

THE KINGDOM OF THAILAND  
NATIONAL ECONOMIC AND SOCIAL DEVELOPMENT COUNCIL (NESDC)

# PROJECT FOR PROMOTING SUSTAINABILITY IN FUTURE CITIES OF THAILAND (STAGE 4-5)

## FINAL REPORT VOL. 2: MODEL CITY PROJECTS

December 2021

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

ALMEC CORPORATION  
INTERNATIONAL DEVELOPMENT CENTER OF JAPAN INC.

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# Table of Contents

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## Executive Summary

<b>1. Tessaban Mueang Chumphon .....</b>	<b>1-1</b>
1.1 SFC Plan, Program, and Projects.....	1-1
1.1.1 Outline.....	1-1
1.1.2 Current Situation .....	1-2
1.1.3 Future Perspective under Current Trend .....	1-10
1.1.4 Assessment of Sustainability .....	1-11
1.1.5 Review of Existing Plans .....	1-13
1.1.6 Sustainable Future City Plan.....	1-17
1.2 Project Implementation Support.....	1-42
1.2.1 List of Potential SFC Projects.....	1-42
1.2.2 Evaluation of Potential Projects under JICA's Criteria.....	1-49
1.3 Pilot Project under JICA's Financial Support .....	1-57
1.3.1 Outline of JICA Pilot Project.....	1-57
1.3.2 Conceptual Framework of JICA Pilot Project.....	1-60
1.3.3 Methodology.....	1-70
1.3.4 Site Analysis .....	1-71
1.3.5 Master Plan on Parks and Sports Facilities Improvement.....	1-92
1.3.6 Selection of Implementation Elements of JICA's Pilot Project (Phase 2).....	1-115
1.3.7 Zone D: Improvement of Banyan Tree Area.....	1-116
1.3.8 Zone H: Improvement of Playground Area.....	1-131
1.4 Operation and Management Plan .....	1-155
1.4.1 Operation and Management Framework.....	1-155
1.4.2 Direction of O&M Plan .....	1-157
1.4.3 Chumphon's Operation and Management (O&M Team).....	1-158
1.5 Lessons Learned.....	1-189
<b>2. Tessaban Mueang Ranong .....</b>	<b>2-1</b>
2.1 SFC Plan, Program, and Projects.....	2-1
2.1.1 Outline.....	2-1
2.1.2 Current Situation .....	2-2
2.1.3 Future Perspective under Current Trend .....	2-9
2.1.4 Assessment of Sustainability .....	2-10
2.1.5 Review of Existing Plans .....	2-11
2.1.6 Sustainable Future City Plan.....	2-14
2.2 Project Implementation Support.....	2-32
2.2.1 List of Potential SFC Projects.....	2-32
2.2.2 Evaluation of Potential Projects under JICA's Criteria.....	2-38
2.3 Pilot Project under JICA's Financial Support .....	2-48
2.3.1 Outline of JICA Pilot Project.....	2-48
2.3.2 Conceptual Framework of JICA Pilot Project.....	2-51
2.3.3 Methodology.....	2-56
2.3.4 Site Analysis .....	2-58
2.3.5 Master Plan on Health Park Renovation with Walkable City Network....	2-83
2.3.6 Selection of Implementation Elements of JICA's Pilot Project (Phase 2).....	2-100

2.3.7	Projects for Detail Designs and Constructions .....	2-102
2.3.8	Projects for Only Detailed Design .....	2-123
2.4	Operation and Management Plan .....	2-131
2.4.1	Operation and Management Framework .....	2-131
2.4.2	Direction of O&M Plan .....	2-133
2.4.3	Ranong's Operation and Management (O&M Team) .....	2-133
2.5	Lessons Learned .....	2-170

<b>3.</b>	<b>Monitoring of the First Phase Model Cities .....</b>	<b>3-1</b>
3.1	Outline of Monitoring Activities .....	3-1
3.3.1	Overview of SFCI Activities in First Phase Model Cities .....	3-1
3.1.2	Outputs of the First Model Cities .....	3-2
3.1.3	Monitoring Activities .....	3-5
3.2	Tessaban Nakhon Chiang Rai .....	3-7
3.2.1	Overview of the SFC Plan Tessaban Nakhon Chiang Rai .....	3-7
3.2.2	Progress of the SFC Plan .....	3-10
3.2.3	Status and Future Direction of the Pilot Project .....	3-15
3.2.4	Lessons Learned .....	3-16
3.3	Tessaban Nakhon Khon Kaen .....	3-27
3.3.1	Overview of the SFC Plan Tessaban Nakhon Khon Kaen .....	3-27
3.3.2	Progress of the SFC Plan .....	3-30
3.3.3	Status and Future Direction of the Pilot Project .....	3-36
3.3.4	Lessons Learned .....	3-41
3.4	Tessaban Mueang Krabi .....	3-43
3.4.1	Overview of the SFC Plan Tessaban Mueang Krabi .....	3-43
3.4.2	Progress of the SFC Plan .....	3-49
3.4.3	Status and Future Direction of the Pilot Project .....	3-61
3.4.4	Lessons Learned .....	3-65
3.5	Tessaban Mueang Nan .....	3-68
3.5.1	Overview of the SFC Plan Tessaban Mueang Nan .....	3-68
3.5.2	Progress of the SFC Plan .....	3-74
3.5.3	Status and Future Direction of the Pilot Project .....	3-88
3.5.4	Lessons Learned .....	3-95
3.6	Tessaban Mueang Phanat Nikhom .....	3-98
3.6.1	Overview of the SFC Plan Tessaban Mueang Phanat Nikhom .....	3-98
3.6.2	Progress of the SFC Plan .....	3-101
3.6.3	Status and Future Direction of the Pilot Project .....	3-106
3.6.4	Lessons Learned .....	3-110
3.7	Tessaban Mueang Phitsanulok .....	3-113
3.7.1	Overview of the SFC Plan Tessaban Nakhon Phitsanulok .....	3-113
3.7.2	Progress of the SFC Plan .....	3-123
3.7.3	Status and Future Direction of the Pilot Project .....	3-140
3.7.4	Lessons Learned .....	3-146
3.8	Conclusion and Recommendations .....	3-149
3.8.1	Progress of the SFC Plan of First Phase Model Cities .....	3-149
3.8.2	Status of Pilot Projects .....	3-151
3.8.3	Lessons learned .....	3-152
3.8.4	Recommendations for the Future Action .....	3-154



## List of Tables

---

Table 1.1.1	Daily Expenditure in Chumphon by Thais and International Tourists.....	1-3
Table 1.1.2	Summary of Tessaban Mueang Chumphon’s Strategies in Local Strategic Development Plan.....	1-14
Table 1.1.3	SWOT Analysis for Sustainable Future City Plan .....	1-17
Table 1.1.4	SFC Programs and Projects under Strategic Direction 1 .....	1-22
Table 1.1.5	SFC Programs and Projects under Strategic Direction 2.....	1-27
Table 1.1.6	SFC Programs and Projects under Strategic Direction 3.....	1-30
Table 1.1.7	SFC Programs and Projects under Strategic Direction 4.....	1-36
Table 1.1.8	SFC Programs and Projects under Strategic Direction 5.....	1-38
Table 1.2.1	Description of Potential Project under Prioritized Program 1-3: Public Space Design for Better Recreational Experiences and Healthy Living .....	1-44
Table 1.2.2	Description of Potential Project under Prioritized Program 2-2: Mode of transportation and sharing road initiatives - design and development	1-45
Table 1.2.3	Description of Potential Project under Prioritized Program 3-1: Center design and development for agricultural products and food safety .....	1-47
Table 1.2.4	Description of Potential Project under Prioritized Program 4-2: Tourism Competitiveness development.....	1-48
Table 1.2.5	Description of Potential Project under Prioritized Program 5-4: Integrated Green City Development .....	1-49
Table 1.2.6	Evaluation of Potential Projects .....	1-51
Table 1.2.7	List of Actions for the Selected SFC Program.....	1-54
Table 1.3.1	Hierarchy of Parks .....	1-63
Table 1.3.2	Criteria for the Sustainable Development of Urban Public Parks .....	1-69
Table 1.3.3	List of Activities in the Provincial Stadium.....	1-76
Table 1.3.4	List of Activities in Arpakornkiattiwong Park.....	1-78
Table 1.3.5	SWOT Analysis of the Pilot Project Site .....	1-81
Table 1.3.6	Results of Focus Group Meeting and In-depth Interviews.....	1-89
Table 1.3.7	Design Criteria .....	1-91
Table 1.3.8	Roadmap of Master Plan on Parks and Sports Facilities Improvement .....	1-107
Table 1.3.9	Implementation Components of JICA’s Pilot Project (Phase 2).....	1-116
Table 1.3.10	Construction Plan for Zone D Pilot Sub-project.....	1-127
Table 1.4.1	Rules and Regulations for the Pilot Projects.....	1-160
Table 1.4.2	Administrative Activities and Promotion of Events .....	1-179
Table 1.4.3	Themes and Target Organizations.....	1-184
Table 1.4.4	Tasks and Responsible Organization .....	1-186
Table 1.4.5	Weekend gathering event.....	1-186
Table 2.1.1	Tourism Statistics of Ranong, 2017-2019.....	2-2
Table 2.1.2	Forest Area in Ranong in 2008–2014.....	2-4
Table 2.1.3	Road information in Tessaban Mueang Ranong.....	2-7
Table 2.1.4	Tessaban Mueang Ranong’s Strategies in the Local Strategic Development Plan .....	2-11
Table 2.1.5	SWOT Analysis for Sustainable Future City Plan .....	2-14
Table 2.1.6	SFC Programs and Projects under Strategic Direction 1 .....	2-18
Table 2.1.7	SFC Programs and Projects under Strategic Direction 2.....	2-19
Table 2.1.8	SFC Programs and Projects under Strategic Direction 3.....	2-22
Table 2.1.9	SFC Programs and Projects under Strategic Direction 4.....	2-26
Table 2.1.10	SFC Programs and Projects under Strategic Direction 5.....	2-29

Table 2.2.1	Description of Potential Project under Prioritized Program 2-1: Development of Tourism Resources .....	2-34
Table 2.2.2	Description of Potential Project under Prioritized Program 4-1: Development of Healthcare Facility and Care System .....	2-36
Table 2.2.3	Description of Potential Project under Prioritized Program 5-1: Improvements of Park, Transport, and Cityscape .....	2-37
Table 2.2.4	Evaluation of Potential Projects .....	2-39
Table 2.2.5	List of Actions for the Selected SFC Program .....	2-45
Table 2.3.1	Purposes of the Pilot Project .....	2-50
Table 2.3.2	Concept and Key Criteria of the Pilot Project .....	2-56
Table 2.3.3	Results of In-depth Interviews .....	2-80
Table 2.3.4	Results of Focus Group Meetings .....	2-81
Table 2.3.5	Roadmap of the Master Plan on Health Park Renovation with Walkable City Network .....	2-96
Table 2.3.6	List of Pilot Projects (Phase 2) .....	2-101
Table 2.3.7	Construction of Zone 1 .....	2-108
Table 2.3.8	Construction of Zone 2 .....	2-119
Table 2.3.9	Monitoring the Kamlangsap Road Improvement Plan .....	2-129
Table 2.4.1	Rules and Regulations for the Pilot Projects .....	2-135
Table 2.4.2	Usage Guidance .....	2-147
Table 2.4.3	Quality Check for Construction .....	2-149
Table 2.4.4	Maintenance Plan .....	2-151
Table 2.4.5	Administrative Activities and Promotion of Events .....	2-158
Table 2.4.6	Themes and Target Organizations .....	2-163
Table 2.4.7	Planning Process .....	2-165
Table 2.4.8	Weekend Event .....	2-167
Table 3.1.1	SFC Visions, Strategies, Programs, and Pilot Projects of First Phase Model Cities .....	3-2
Table 3.1.2	Pilot Projects of the First Phase Model Cities .....	3-4
Table 3.1.3	Monitoring Activities of the First Phase Model Cities .....	3-6
Table 3.2.1	Selection of SFC Program for Tessaban Nakhon Chiang Rai .....	3-8
Table 3.2.2	Action Plan on the Development of Doi Saken Community Area to be a Learning Source and New Tourism Spot: Kiri Chai Yama .....	3-9
Table 3.2.3	Progress of Chiang Rai's SFC Plan .....	3-13
Table 3.2.4	Outputs of the JICA Pilot Project by Component .....	3-17
Table 3.3.1	Selection of SFC Program for Tessaban Nakhon Khon Kaen .....	3-28
Table 3.3.2	Roadmap for the Pilot Project .....	3-28
Table 3.3.3	Short-term Action Plan .....	3-29
Table 3.3.4	Midterm Action Plan .....	3-30
Table 3.3.5	Role Sharing in Khon Kaen .....	3-31
Table 3.3.6	Progress of the Short-term Action Plan .....	3-34
Table 3.3.7	Progress of the Midterm Action Plan .....	3-36
Table 3.3.8	Outputs of the JICA Pilot Project by Component .....	3-37
Table 3.4.1	Selection of SFC Program for Tessaban Mueang Krabi .....	3-44
Table 3.4.2	Projects under Strategy 1 Conservation and Promotion of Environmental and Tourism Resources .....	3-45
Table 3.4.3	Projects under Strategy 2 Conservation and promotion of cultural and tourism resources .....	3-47
Table 3.4.4	Projects under Strategy 3 Promotion of Integrated Community-based Tourism .....	3-48
Table 3.4.5	Progress of Strategy 1: Conservation and Promotion of Environmental	

	and Tourism Resources .....	3-52
Table 3.4.6	Progress of Strategy 2: Conservation and Promotion of Cultural and Tourism Resources .....	3-55
Table 3.4.7	Progress of Strategy 3: Promotion of Integrated Community-based Tourism (CBT) .....	3-59
Table 3.4.8	Outputs of the JICA Pilot Project by Component .....	3-62
Table 3.5.1	Selection of SFC Program for Tessaban Mueang Nan .....	3-69
Table 3.5.2	Projects under Strategy 1 Restoration and Conservation of Local Culture .....	3-71
Table 3.5.3	Projects under Strategy 2 Improvement of the Quality of Life in Nan .....	3-72
Table 3.5.4	Projects under Strategy 2 Improvement of the Quality of Life in Nan .....	3-73
Table 3.5.5	Progress of Strategy 1: Restoration and Conservation of Local Culture .....	3-78
Table 3.5.6	Progress of Strategy 2: Improvement of the Quality of Life in Nan .....	3-83
Table 3.5.7	Progress of Strategy 3: Urban Environment Management .....	3-86
Table 3.5.8	Outputs of the JICA Pilot Project by Component .....	3-88
Table 3.6.1	Selection of SFC Program for Tessaban Mueang Phanat Nikhom .....	3-99
Table 3.6.2	Projects in the Action Plan for Introducing Universal Design .....	3-100
Table 3.6.3	Progress of Project the Action Plan for Introducing Universal Design .....	3-102
Table 3.6.4	Role Sharing in the Renovation of Public Park in Sub-Community 9 .....	3-107
Table 3.7.1	Selection of SFC Program for Tessaban Nakhon Phitsanulok .....	3-114
Table 3.7.2	Strategies and Programs under the 10-year Strategy for Sustainable Ageing Society .....	3-114
Table 3.7.3	Projects in Strategy 1: Health Care System Development .....	3-115
Table 3.7.4	Projects in Strategy 2: Promotion of Smart Ageing Society .....	3-118
Table 3.7.5	Projects in Strategy 3: Silver Economy .....	3-120
Table 3.7.6	Projects in Strategy 4: Public Space and Facility Development with Universal Design .....	3-122
Table 3.7.7	Progress of Strategy 1: Health Care System Development .....	3-126
Table 3.7.8	Progress of Strategy 2 Promotion of Smart Ageing Society .....	3-130
Table 3.7.9	Progress of Strategy 3: Silver Economy .....	3-134
Table 3.7.10	Progress of Strategy 4: Public Space and Facility Development with Universal Design .....	3-137
Table 3.7.11	Proposed Projects for Strategy 4 in FY2021 .....	3-139
Table 3.7.12	Outputs of the JICA Pilot Project by Component .....	3-141
Table 3.7.13	Future Direction of Phra Ong Khao Community Health Center .....	3-142
Table 3.7.14	Future Direction of Phra Ong Khao Community Health Center .....	3-144
Table 3.8.1	Development Issues and Focal Sectors of the First Phase Model Cities .....	3-154

## List of Figures

---

Figure 1.1.1	Location of Chumphon Province.....	1-1
Figure 1.1.2	Community-based Tourism in Chumphon Province .....	1-3
Figure 1.1.3	Population Trend in Tessaban Mueang Chumphon and Chumphon’s Urban Area .....	1-4
Figure 1.1.4	Population Pyramid in Tessaban Mueang Chumphon and Chumphon Urban Area .....	1-5
Figure 1.1.5	Changes in Urban Area from 1990 to 2020 .....	1-8
Figure 1.1.6	Chumphon City Comprehensive Plan.....	1-9
Figure 1.2.1	Project Prioritization Process .....	1-42
Figure 1.2.2	Preliminary Selection of Potential SFC Projects.....	1-43
Figure 1.3.1	Implementation Steps for the JICA Pilot Project.....	1-58
Figure 1.3.2	Pilot Project Site.....	1-59
Figure 1.3.3	The Orthodox Model of Balance in Sustainable Development (left) and the Integrated Model for Sustainable Development (right) .....	1-60
Figure 1.3.4	Key Components of Public Spaces .....	1-61
Figure 1.3.5	Key Components of Public Parks.....	1-64
Figure 1.3.6	Integrated Model for Sustainable Public Park Development.....	1-68
Figure 1.3.7	Vicinity of the Pilot Project Site.....	1-71
Figure 1.3.8	Major Roads around the Pilot Project Site .....	1-72
Figure 1.3.9	Zones of the Pilot Project Site .....	1-73
Figure 1.3.10	Accessibility to the Pilot Project Site.....	1-74
Figure 1.3.11	Routes in the Pilot Project Site.....	1-74
Figure 1.3.12	Existing Facilities in the Pilot Project Site.....	1-75
Figure 1.3.13	Activities in the Pilot Project Site.....	1-75
Figure 1.3.14	Hardscape and Softscape Park Elements .....	1-80
Figure 1.3.15	Pavement Materials in the Park .....	1-80
Figure 1.3.16	Heat Levels at the Park.....	1-81
Figure 1.3.17	Age of Respondents.....	1-82
Figure 1.3.18	Types of Park and Stadium Activities.....	1-84
Figure 1.3.19	User’s Perception on Physical Elements of the Park.....	1-85
Figure 1.3.20	User’s Perception of Current and Future Activities in the Park .....	1-85
Figure 1.3.21	Users’ Satisfaction with Arpakornkiattiwong Park I (left) and the Provincial Stadium (right).....	1-86
Figure 1.3.22	Developments Needs of Arpakornkiattiwong Park (left) and the Provincial Stadium (right).....	1-87
Figure 1.3.23	Requirements for Further Improvement .....	1-88
Figure 1.3.24	Summary Board of Focus Group and In-Depth Interviews .....	1-89
Figure 1.3.25	Goal of Master Plan .....	1-92
Figure 1.3.26	Components of the Master Plan on Parks and Sports Facilities Improvement.....	1-93
Figure 1.3.27	Development Projects for Zone A.....	1-94
Figure 1.3.28	Development Projects for Zone B.....	1-95
Figure 1.3.29	Development Projects for Zone C.....	1-96
Figure 1.3.30	Development Projects for Zone D .....	1-97
Figure 1.3.31	Development Projects for Zone E .....	1-98
Figure 1.3.32	Development Project for Zone F .....	1-99
Figure 1.3.33	Development Project for Zone G .....	1-99
Figure 1.3.34	Development Projects for Zone H .....	1-100

Figure 1.3.35	Development Projects for Zone I .....	1-101
Figure 1.3.36	Development Project for Zone J .....	1-102
Figure 1.3.37	Development Projects for Zone K .....	1-103
Figure 1.3.38	Development Projects for Zone L .....	1-104
Figure 1.3.39	Development Projects for Zone M .....	1-105
Figure 1.3.40	Development Project for Zone N .....	1-106
Figure 1.3.41	Location of Pilot Projects (Phase 2) .....	1-115
Figure 1.3.42	Location of Zone D Improvement of Banyan Tree Area.....	1-116
Figure 1.3.43	Actual Accessibility (Left) and Users' Perception of Accessibility (Right).	1-117
Figure 1.3.44	Shaded Area (Left) and Lighting and Drainage System (Right).....	1-118
Figure 1.3.45	Function (Left) and Zone and Activity (Right).....	1-118
Figure 1.3.46	Design Considerations for Zone D.....	1-119
Figure 1.3.47	Design Concept for Zone D.....	1-120
Figure 1.3.48	Layout of Zone D .....	1-120
Figure 1.3.49	Stage Layout and Perspective .....	1-122
Figure 1.3.50	Landscape Plan.....	1-122
Figure 1.3.51	Lighting Surrounding Pilot Project Site .....	1-123
Figure 1.3.52	Lighting System at the Pilot Project Site .....	1-124
Figure 1.3.53	Drainage System at the Pilot Project Site .....	1-125
Figure 1.3.54	Ideas for Decorating the Banyan Tree Area .....	1-125
Figure 1.3.55	Perspective of Zone D during Daytime and Nighttime .....	1-126
Figure 1.3.56	Inspection Work for Zone D.....	1-129
Figure 1.3.57	Completion of Construction of Zone D .....	1-130
Figure 1.3.58	Location of Zone H Improvement of Playground Area .....	1-131
Figure 1.3.59	Existing Conditions in Zone H .....	1-132
Figure 1.3.60	Site Analysis of Zone H .....	1-132
Figure 1.3.61	Design Concept for Zone H.....	1-133
Figure 1.3.62	Allocation by Axis and Connectivity.....	1-134
Figure 1.3.63	Reorganization of Zones and Activities .....	1-135
Figure 1.3.64	Circulation and Support Services .....	1-136
Figure 1.3.65	Layout Plan for Zone H .....	1-137
Figure 1.3.66	Level Plan.....	1-137
Figure 1.3.67	Level Plan.....	1-138
Figure 1.3.68	Landscape Plan.....	1-139
Figure 1.3.69	Drainage Plan.....	1-140
Figure 1.3.70	Lighting Plan.....	1-140
Figure 1.3.71	CCTV Plan .....	1-141
Figure 1.3.72	First Aid and Evacuation Plan.....	1-142
Figure 1.3.73	Service Plan.....	1-143
Figure 1.3.74	Types of Signage .....	1-144
Figure 1.3.75	Color Schemes.....	1-145
Figure 1.3.76	Examples and Use of Color Schemes.....	1-145
Figure 1.3.77	Components of Zone H.....	1-146
Figure 1.3.78	Common Space in Zone H.....	1-147
Figure 1.3.79	Design Patterns of the Common Space in Zone H.....	1-148
Figure 1.3.80	Active Space in Zone H .....	1-148
Figure 1.3.81	Active Space in Zone H: Touch and Sound .....	1-149
Figure 1.3.82	Active Space in Zone H: Active Wall.....	1-150
Figure 1.3.83	Active Space in Zone H: Swing Yard .....	1-151
Figure 1.3.84	Passive Space in Zone H.....	1-152
Figure 1.3.85	Passive Space in Zone H: Learning Environment .....	1-152

Figure 1.3.86	Passive Space in Zone H: Encounter Space.....	1-153
Figure 1.3.87	Passive Space in Zone H: Learning Wall.....	1-153
Figure 1.4.1	Framework of O&M Team.....	1-155
Figure 1.4.2	Roles of an O&M Team.....	1-156
Figure 1.4.3	Construction of Zone D.....	1-158
Figure 1.4.4	Proposed Composition of the Chumphon O&M Team.....	1-159
Figure 1.4.5	Potential Financial Sources.....	1-163
Figure 1.4.6	Example of Farmers Market and Print Advertisement.....	1-185
Figure 1.4.7	SFCI Champion Pins.....	1-188
Figure 2.1.1	Location of Ranong Province.....	2-1
Figure 2.1.2	Population Trend in Ranong’s Urban Area and Tessaban Mueang Ranong.....	2-3
Figure 2.1.3	Population Pyramid in Ranong’s Urban Area and Tessaban Mueang Ranong.....	2-4
Figure 2.1.4	Map of Ranong’s Biosphere.....	2-5
Figure 2.1.5	Mangrove Area in Tessaban Mueang Ranong.....	2-6
Figure 2.1.6	Urban Expansion in Ranong, 1990–2020.....	2-7
Figure 2.1.7	Songteaw Routes in Tessaban Mueang Ranong.....	2-8
Figure 2.1.8	Land Use Zoning of Tessaban Mueang Ranong.....	2-12
Figure 2.2.1	Project Prioritization Process.....	2-32
Figure 2.2.2	Preliminary Selection of Potential SFC Projects.....	2-33
Figure 2.2.3	Songteaw Routes in Ranong.....	2-35
Figure 2.2.4	Healthy Garden Landscape Design and Improvement Monument Courtyard and Had Som Phant Canal Project.....	2-42
Figure 2.2.5	Raksawarin Park Landscape Design and Improvement Project.....	2-43
Figure 2.2.6	Pavement Improvement on Permpchon Road Project.....	2-44
Figure 2.3.1	Implementation Steps for the JICA Pilot Project.....	2-48
Figure 2.3.2	Pilot Project Site.....	2-50
Figure 2.3.3	Connection between Outdoor Quality and Outdoor Activities by Jan Gehl.....	2-53
Figure 2.3.4	Vicinity of the Pilot Project Site.....	2-58
Figure 2.3.5	Public Space Network in Tessaban Mueang Ranong.....	2-59
Figure 2.3.6	Active Activity: Government and Hospital Services.....	2-59
Figure 2.3.7	Active Activity: Sports and Play.....	2-60
Figure 2.3.8	Active Activity: Trade and service.....	2-60
Figure 2.3.9	Passive Activity: Recreation.....	2-61
Figure 2.3.10	Activity Nodes in Tessaban Mueang Ranong.....	2-61
Figure 2.3.11	SWOT Analysis of the Pilot Project Site.....	2-62
Figure 2.3.12	Survey Area.....	2-63
Figure 2.3.13	Number of Weekday and Weekend Users by Age Group.....	2-64
Figure 2.3.14	Occupations of Users.....	2-65
Figure 2.3.15	Weekday and Weekend Activities in the Pilot Project Site.....	2-66
Figure 2.3.16	Time and Duration of Visit.....	2-68
Figure 2.3.17	Satisfaction with and Need for Criteria 1: Accessibility and Connectivity.....	2-70
Figure 2.3.18	Satisfaction with and Need for Criteria 2: Activity.....	2-72
Figure 2.3.19	Satisfaction with and Need for Criteria 3: Spatiality.....	2-74
Figure 2.3.20	Satisfaction with and Need for Criteria 4: Aesthetics.....	2-76
Figure 2.3.21	Satisfaction with and Need for Criteria 5: Management.....	2-78
Figure 2.3.22	Obstacles to Walking.....	2-79
Figure 2.3.23	Motivations for Walking.....	2-79
Figure 2.3.24	Conceptual Diagram for the Pilot Project.....	2-84

Figure 2.3.25	Master Plan on Health Park Renovation with Walkable City Network .....	2-84
Figure 2.3.26	Design Elements of the Pilot Project.....	2-85
Figure 2.3.27	Design Element 1: Connecting Walkway.....	2-86
Figure 2.3.28	Perspective of Health Office Junction (1).....	2-86
Figure 2.3.29	Perspective of Ranong Hospital Crossway in the Daytime (2).....	2-87
Figure 2.3.30	Perspective of Ranong Hospital Crossway at Nighttime (2).....	2-87
Figure 2.3.31	Perspective of Pedestrian Walkway along Kamlangsap Road (5).....	2-88
Figure 2.3.32	Design Element 2: Public Transportation Connection.....	2-88
Figure 2.3.33	Perspective of a Public Transportation Stop Point (4) .....	2-89
Figure 2.3.34	Design Element 3: Activities along the Walkway.....	2-89
Figure 2.3.35	Perspective of Street Vendors opposite Ranong Hospital (3).....	2-90
Figure 2.3.36	Perspective of Pedestrian Walkway along Kamlangsap Road in front of Pho Ta Khing’s Shrine at Daytime (6) .....	2-91
Figure 2.3.37	Perspective of Pedestrian Walkway along Kamlangsap Road in front of Pho Ta Khing’s Shrine at Nighttime (6).....	2-91
Figure 2.3.38	Design Element 4: Public Space.....	2-92
Figure 2.3.39	Perspective of Pho Ta Khing’s Shrine at Daytime (7).....	2-92
Figure 2.3.40	Perspective of Pho Ta Khing’s Shrine at Nighttime (7).....	2-93
Figure 2.3.41	Perspective of Open Space connecting to Raksawarin (8).....	2-93
Figure 2.3.42	Design Element 5: Landmark and Sense of Place .....	2-94
Figure 2.3.43	Perspective of Open View from Petchkasem Road (9) .....	2-94
Figure 2.3.44	Location of Projects for Detailed Design and/or Construction .....	2-101
Figure 2.3.45	Detailed Plan for Area in front of Ranong Hospital .....	2-102
Figure 2.3.46	Programmatic Design of Area in front of Ranong Hospital.....	2-103
Figure 2.3.47	Painting Plan for Zone 1: Area in front of Ranong Hospital.....	2-104
Figure 2.3.48	Signage and Furniture Plan for Zone 1: Area in front of Ranong Hospital .....	2-105
Figure 2.3.49	Electrical System Plan for Zone 1: Area in front of Ranong Hospital.....	2-106
Figure 2.3.50	Landscape Plan for Zone 1: Area in front of Ranong Hospital .....	2-107
Figure 2.3.51	MOU Signing between JICA Project Team and Tessaban Mueang .....	2-108
Figure 2.3.52	Zone 1 Before and After Improvement - 1 .....	2-111
Figure 2.3.53	Zone 1 Before and After Improvement - 2.....	2-111
Figure 2.3.54	Zone 1 Before and After Improvement - 3.....	2-112
Figure 2.3.55	Zone 1 Before and After Improvement - 4.....	2-112
Figure 2.3.56	Detailed Plan for Pho Ta Khing’s Shrine Area.....	2-113
Figure 2.3.57	Programmatic Design of Pho Ta Khing’s Shrine Area.....	2-114
Figure 2.3.58	Pavement Material Plan for Zone 2: Pho Ta Khing’s Shrine.....	2-114
Figure 2.3.59	Painting Plan for Zone 2: Pho Ta Khing’s Shrine .....	2-115
Figure 2.3.60	Furniture Plan for Zone 2: Pho Ta Khing’s Shrine .....	2-116
Figure 2.3.61	Lighting System Plan for Zone 2: Pho Ta Khing’s Shrine .....	2-117
Figure 2.3.62	Landscaping Plan for Zone 2: Pho Ta Khing’s Shrine .....	2-118
Figure 2.3.63	Zone 2 Before and After Improvement - 1 .....	2-122
Figure 2.3.64	Zone 2 Before and After Improvement - 2.....	2-123
Figure 2.3.65	Zone 2 Before and After Improvement - 3.....	2-123
Figure 2.3.66	Zone 2 Before and After Improvement - 4.....	2-123
Figure 2.3.67	Detailed Plan for Zone 3: Area connecting Raksawarin and Petchkasem Road.....	2-124
Figure 2.3.68	Pavement Plan for Zone 3: Area connecting Raksawarin and Petchkasem Road.....	2-125
Figure 2.3.69	Furniture Plan for Zone 3: Area connecting Raksawarin and Petchkasem Road.....	2-125

Figure 2.3.70	Landscaping Plan for Zone 3: Area connecting Raksawarin and Petchkasem Road.....	2-126
Figure 2.3.71	Perspective of Open Space connecting to Raksawarin (8).....	2-127
Figure 2.3.72	Zoning Plan: Kamlangsap Road Improvement.....	2-128
Figure 2.3.73	Information Signage: Tourist Attraction.....	2-129
Figure 2.3.74	Information Signage: Songteaw Route.....	2-130
Figure 2.4.1	Framework of O&M Team.....	2-131
Figure 2.4.2	Roles of an O&M Team.....	2-132
Figure 2.4.3	Proposed Composition of the Ranong O&M Team.....	2-134
Figure 2.4.4	Potential Financial Sources.....	2-139
Figure 2.4.5	Pracharat Raksamakee Company Fair in Ranong.....	2-164
Figure 2.4.6	Music and Book Club Event in the Park.....	2-165
Figure 2.4.7	Bike and Walk Event in the Park.....	2-167
Figure 2.4.8	SFCI Champion Pins.....	2-169
Figure 2.4.9	SFCI Champion Certificate.....	2-169
Figure 3.2.1	Overall Progress of the Chiang Rai's SFC Plan.....	3-11
Figure 3.2.2	New Bathroom in Doi Saken.....	3-15
Figure 3.2.3	Activities at U3A.....	3-19
Figure 3.2.4	Open-air Learning Space in Doi Saken.....	3-21
Figure 3.2.5	Tourist Map and Brochure.....	3-21
Figure 3.2.6	Golf Cart and Information Banners.....	3-23
Figure 3.2.7	Product selling at Doi Saken.....	3-22
Figure 3.3.1	Overall Progress of the Short-term Action Plan.....	3-32
Figure 3.3.2	Bus Signage and Stop Mock-ups.....	3-39
Figure 3.3.3	Promotion Design for Public Transportation.....	3-40
Figure 3.4.1	Overall Progress of the Krabi SFC Action Plan.....	3-50
Figure 3.4.2	Andaman Cultural Center.....	3-63
Figure 3.4.3	Local Beverage Shop.....	3-64
Figure 3.5.1	Progress of the Five-year Action Plan on "A Living Old Town".....	3-75
Figure 3.5.2	Mahaphod Community Vegetable Garden.....	3-81
Figure 3.5.3	Long Nan Center.....	3-90
Figure 3.5.4	Nan Cycling Map.....	3-90
Figure 3.5.5	Conceptual Lighting Design for Temples and Archeological Sites.....	3-92
Figure 3.5.6	Study Tour group in Mahaphod Community.....	3-93
Figure 3.5.7	Elderly Pension Distribution and Waste Collection.....	3-94
Figure 3.5.8	Waste Separation at a Walking Street.....	3-94
Figure 3.6.1	Work-flow of SFC Project and JICA Pilot Project.....	3-99
Figure 3.6.2	Overall Progress of the Action Plan on Introducing Universal Design.....	3-101
Figure 3.6.3	Structures with Universal Designs.....	3-108
Figure 3.6.4	Equipment with Universal Designs.....	3-109
Figure 3.6.5	Symbols with Universal Design.....	3-109
Figure 3.6.6	New Park Amenities.....	3-109
Figure 3.6.7	Multi Generation Activities at the Park.....	3-110
Figure 3.7.1	Overall Progress of the 10-Year Strategy.....	3-124
Figure 3.7.2	Link between SFC Plan and JICA Pilot Project.....	3-140
Figure 3.8.1	Progress of the SFC Action Plans of First Phase Model Cities.....	3-149



## ABBREVIATIONS

BOQ	bill of quantities
CAT	CAT Telecom Public Company Limited
CBT	community-based tourism
CDD	Community Development Department
COC	Chamber of Commerce
DASTA	Designated Area for Sustainable Tourism Administration
DEPA	Office of Digital Economy Promotion Agency
DEQP	Department of Environmental Quality Promotion
DLA	Department of Local Administration
DLT	Department of Land Transport
DPT	Department of Public Works and Town and Country Planning
EEC	Eastern Economic Corridor
FY	fiscal year
GPS	global positioning system
KKTS	Khon Kaen Transit System Company Limited
KKTT	Khon Kaen Think Tank
KKU	Khon Kaen University
KMLT	King Mongkut's Institute of Technology Ladkrabang
KPI	King Prajadhipok's Institute
LAO	Local Administrative Organization
LEDP	Local Strategic Development Plan
LRT	light rail transit
MDES	Ministry of Digital Economy and Society
MOU	memorandum of understanding
NESDC	National Economic and Social Development Council
NH	National Highway
NIA	National Innovation Agency
O&M	operation and management
OBEC	Office of the Basic Education Commission
OMS	operations management system
OTP	Office of Transport and Traffic Policy and Planning
PAO	Provincial Administrative Organization
PCD	Provincial Community Development Office
PPT	Pilot Project Team
PPTA	Private Public Transportation Agency
PT	Planning Team
PWD	persons with disabilities
SEC	Southern Economic Corridor
SFC	Sustainable Future City
SFCI	Sustainable Future City Initiative
SRT	State Railway of Thailand
TAO	Tambon Administrative Organization
TAT	Tourism Authority of Thailand

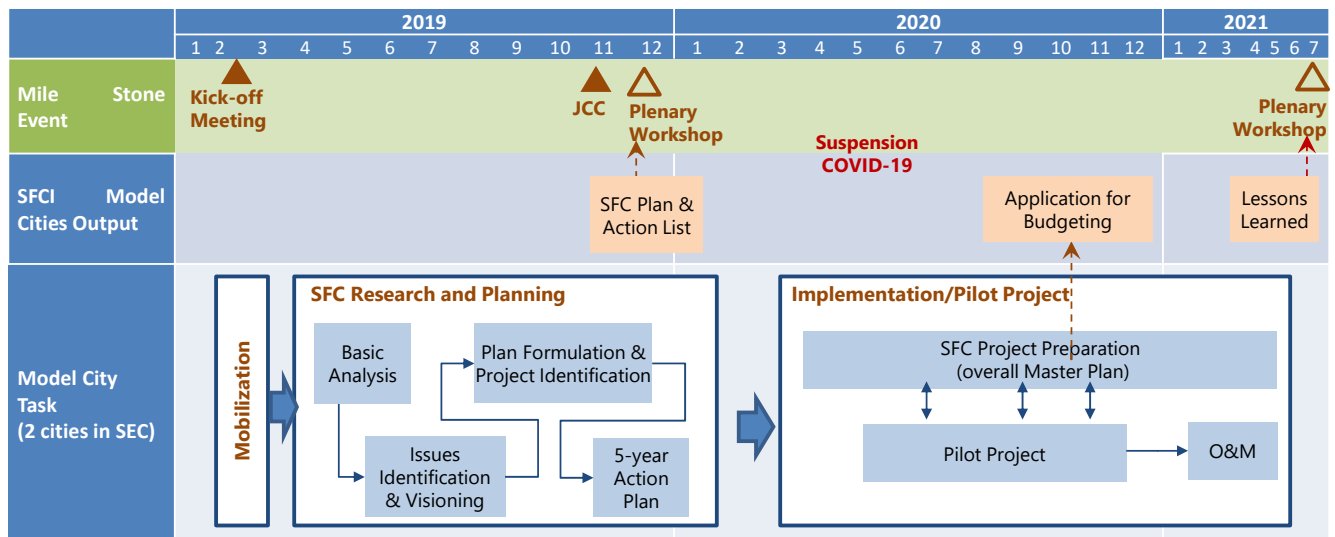
TGO	Thailand Greenhouse Gas Management Organization
TOD	Transit-oriented development
TOT	TOT Public Company Limited
U3A	University of Third Ages
UCLG	United Cities and Local Governments
VHV	village health volunteer

# Executive Summary

## Volume 2 Model City Projects

### 1. Outline of the Second Phase SFCI Model City Projects

The Sustainable Future City Initiative (SFCI) Model City Projects in Tessaban Mueang Ranong and Tessaban Mueang Chumphon started in February 2020. After the kick-off meeting with the JICA Project Team and National Economic and Social Development Council (NESDC), both tessabans established their own SFCI teams and Planning Teams (PTs) involving key stakeholders in their cities. Based on the SFCI Guideline, both tessabans formulated their own SFC Plans and identified priority projects with PT members through a participatory approach. In August 2021, both cities completed the implementation of their pilot projects. The SFC Plans and pilot projects in both cities are described in this section.



Note: Red-colored areas show the period when all or some of the model cities' activities were suspended or cancelled due to COVID-19 prevention measures.

Source: JICA Project Team

**Figure 1.1 Implementation Schedule of the Second Phase Model City Projects**

## 2. Tessaban Mueang Chumphon

### 2.1 SFC Planning in Chumphon

#### 1) Review of Existing Conditions in Chumphon Province

**Vision of Chumphon Province** is "Chumphon, the city of agriculture and quality tourism, linking the development of two sea sides".

This vision is reflected in the SFC Plan by stating that Chumphon is the gateway to the south, connecting tourists to both the Andaman coast and the Gulf of Thailand. Travelers going to southern Thailand by car must pass through Chumphon Province, presenting a very good opportunity to attract more people to visit the province. Chumphon is also rich in agricultural resources. These strengths have led to the determination to position Chumphon Province as a leader in agricultural development along with quality tourism.

#### 2) SFC Planning Work in Tessaban Mueang Chumphon

The SFC Plan of Tessaban Mueang Chumphon was formulated based on the SFC planning process, which includes the review of both national and regional plans, analysis of city data, and conduct of a questionnaire survey among the citizens to highlight the key issues and potentials of the city. The results of these were discussed by the PT to formulate the vision for and the strategies used to formulate the SFC Plan for Chumphon.

### 2.2 Vision and Strategies of Chumphon's SFC Plan

**Vision:** "Chumphon the Livable City, Happiness Social and Good Quality of Life"

**Strategy 1: Create a Happy City for People of All Ages:** This strategy constitutes initiatives to enhance the quality of life of all ages, improving the well-being and living conditions of the youth and for families to grow well, ready to provide care, as well as medical and welfare services, particularly to the elderly to help them become independent, connected, and respected.

- 0 Program 1-1 Center design and development for the well-being of all ages
- 0 Program 1-2 Active aging and multigeneration capacity building program for the sustainable future city
- 0 Program 1-3 Public space design for better recreational experiences and healthy living
- 0 Program 1-4 Security and safety
- 0 Program 1-5 Citizenship and responsible value
- 0 Program 1-6 Health and wellness care and prevention

**Strategy 2: Smart Mobility:** Tessaban Mueang Chumphon aims to become more people-centric by ensuring better mobility through three lenses: connectedness, sustainability and age-friendliness. Initiatives under this strategy include the enhancement of streetscapes, connected mobility, seamless mass transit, as well as

flexible and integrated travel experiences based on technology and data management to benefit visitors.

- 0 Program 2-1 Intelligent system design and development for efficiency and effectiveness
- 0 Program 2-2 Mode of transportation and sharing road initiatives- design and development

**Strategy 3: Center of Agricultural Products and Food Safety:** Tessaban Mueang Chumphon has a potential to become an integrated distribution hub for agricultural products and to develop new tourism products such as local agricultural market, food festivals, and cultural farmers' market in the city.

- 0 Program 3-1 Center design and development for agricultural products and food safety
- 0 Program 3-2 Marketing communication for local products and assets
- 0 Program 3-3 Responsible and tech business development

**Strategy 4: Gateway of the Southern Corridor and a Must-visit Destination:** Chumphon being the sole gateway to the South and a base for regional connectivity can leverage this competitive edge in both trade and tourism to transform itself from a mere "gateway" to a "gateway destination" together with strategies 2 and 3.

- 0 Program 4-1 Trade and investment
- 0 Program 4-2 Tourism competitiveness development

**Strategy 5: Integrated Eco-system Management with Smart Data and Planning:** This strategy focuses on measuring and sustainably managing the city's eco-system. Utilizing available technology and intelligent systems can be applied first to smart urban planning and smart agriculture.

- 0 Program 5-1 Climate change adaptation and climate resilience
- 0 Program 5-2 Waste management
- 0 Program 5-3 Water management
- 0 Program 5-4 Integrated green city development

### **2.3 Selection of the JICA Pilot Project**

After the formulation of the SFC Plan, the PT selected one program from each of the five (5) strategies to initiate the selection of the pilot project to be supported by JICA. The Team then chose one project from each of the program, as shown below.

- 0 Parks and Sports Facilities Improvement Project under Program 1.3
- 0 Walkable City and Streetscape Design and Improvement Project under Program 2.2
- 0 Community Economic Road under Program 3.1
- 0 City Landmarks and Activities Creation Project under Program 4.2

- o Green City Project under Program 5.4

Through project prioritization, the PT selected the Public Space Design for Better Recreational Experiences and Healthy Living Project under Program 1-3 to be the JICA pilot project.

## 2.4 Parks and Sports Facilities Improvement Project

The master plan for the Parks and Sports Facilities Improvement Project was prepared based on the results of the user analysis, physical survey, questionnaire, and focus group discussion. The master plan focused on the creation of a happy city for people of all ages.

### 1) Project Site



Source: JICA Project Team

**Figure 2.1 Project Site**

The project site is in the center of Tessaban Mueang Chumphon and consists of two areas: Arpakornkiattiwong Park (4.0 hectares/ 25 rai) and the Provincial Stadium (5.8 hectares/ 36 rai).

### 2) Design Concept

Considering the connectivity between Arpakornkiattiwong Park and the Provincial Stadium, the key concept in master plan formulation was the creation of public space. This concept consists of two planning guidelines, which are: 1) level of accessibility and 2) participatory process. The objectives of the pilot project are:

- o To create a new destination or landmark in Tessaban Mueang Chumphon.
- o To stimulate economic activities and increase land values in surrounding areas.
- o To promote the use of public space to improve the quality of life.
- o To create cooperation in management among the public, private, and civil sectors.
- o To build a sense of belonging among the locals.

### 3) Master Plan on Parks and Sports Facilities Improvement

The master plan on parks and sports facilities improvement consists of several projects spread in 14 zones, as shown in Figure 2.2.



Source: JICA Project Team

**Figure 2.2 Master Plan on Parks and Sports Facilities Improvement**

### 4) Projects in the Master Plan by Planning Horizon

The projects under the master plan are divided into four phases, as shown below. The Pilot Project Team (PPT), comprising key stakeholders in the pilot project site, selected the flagship project to prepare the detailed design and implement it using JICA budget.

- 0 **Pilot (Flagship) Project:** Completed within 6 months under the second phase of the pilot project and funded by JICA budget to serve as a tangible output based on which the Tessaban can get further budget support from relevant organizations.
- 0 **Short-term Projects:** Continued projects from the pilot or flagship project and to be completed following the prepared detailed design.
- 0 **Mid-term Projects:** Can be completed within 1–2 year(s).
- 0 **Long-term Projects:** Can be completed within 3–5 years to complete the master plan.

### 2.5 Design and Construction of the JICA Pilot Project

The JICA pilot project consists of two subprojects, namely: (i) detailed design and construction of Zone D improvement of Banyan tree area, and (ii) detailed design of Zone H improvement of the playground.

## 1) Detailed Design and Construction of Zone D Improvement of Banyan Tree Area



Source: JICA Project Team

**Figure 2.3 Design Perspective of Zone D**

Zone D is located at the main entrance of the public park. The purpose of improving this area is to create a landmark for the users, to provide a space for community activities, and to support community gathering. A multifunctional stage was also designed to serve as recreation area and landmark, as well as to support various events and night-time activities.

The Zone D subproject has four components: (i) installation of stage with universal design, (ii) landscape improvement, (iii) improvement of the drainage and lighting systems, and (iv) suggestion for decoration of the stage.

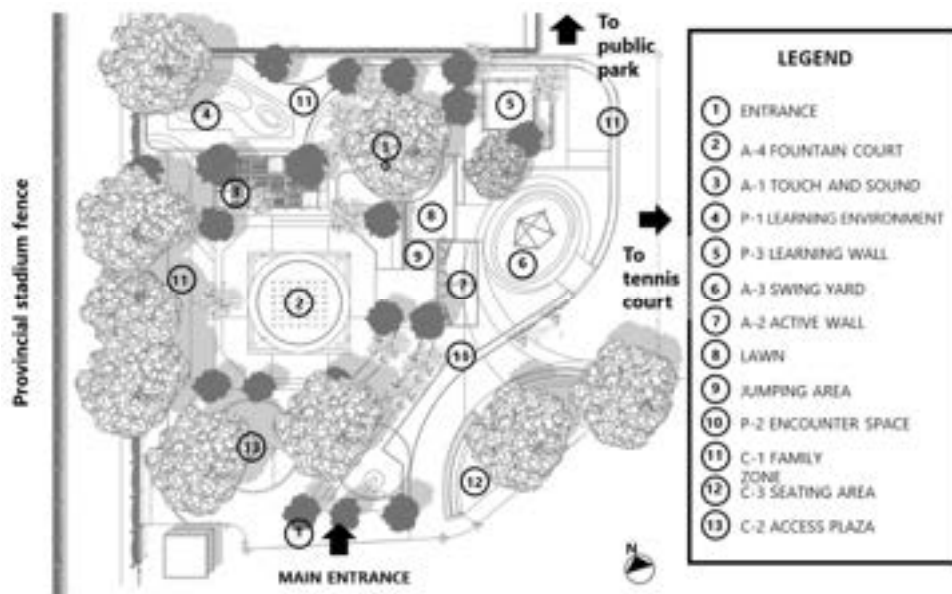




Source: JICA Project Team

**Figure 2.4 Completed Zone D Subproject**

**2) Detailed Design of Zone H Improvement of Playground Area**



Source: JICA Project Team

**Figure 2.5 Layout Plan for Zone H**

The Zone H subproject aims to promote suitable activities for children and youths and to enhance economic activities. Zone H was designed to have 3 spaces which are:

**(1) Common space** is located at the entrance of the park from the Provincial Stadium side. This space was designed to increase user's perception and to connect the users of the park and the Provincial Stadium. This space is divided into the 1) family zone, 2) access plaza, and 3) seating area.

**(2) Active space** was designed to support activities involving fast movements (suited for older children), such as running, jumping, and climbing, which stimulate children's development. Besides a fountain court for children, this space consists of the following 3 play equipment:

- **Touch and sound**, the main material of which is bamboo hanging at different heights. Users can walk through the "bamboo grove" and tap them to make a sound. This will build companionship when children create rules to play here and build their physical skills through touch (of the surface) and sound (of bamboo).
- **Active wall** is a wall-mounted basketball hoop. Parents can play with their children for fun and for family interaction. This play equipment also enhances balancing skills, builds concentration, and stimulates physicality and flexibility.
- **Swing yard** is a rope at different levels to enhance the experience and problem-solving skills of users. This also enhances balancing and climbing skills, concentration, and imagination through roleplaying.

**(3) Passive space** supports activities involving slow movements and is aimed at younger children to promote social interaction and learning. This space is divided into 3 spaces which are:

- **Learning Environment** is a flat berm with logs at different levels to improve balancing and concentration skills. This will allow users to give time to themselves and to immerse themselves in the surrounding environment.
- **Encounter Space** is a vital part of the passive space. Located in the center of this space, this area was designed for social gathering to promote social interactions among all ages.
- **Learning Wall** is a wall with different levels and sizes of holes to peer through. This is suitable for circular exhibitions during festivals and other events to stimulate curiosity among children and promote learning through exhibitions/information provided on the wall.



Source: JICA Project Team

**Figure 2.6 Design Perspective of Zone H**

Supporting plans were also prepared, including a first aid and evacuation plan, CCTV plan, drainage plan, lighting plan, and service plan (information signage and bins). The color schemes of and instructions for the play equipment were provided in the detailed design.

## **2.6 MOU on the Detailed Design and Construction of Zone D Banyan Tree Area under JICA Budget**

The detailed design and construction of Zone D subproject started with a financial support from JICA. The memorandum of understanding (MOU) was signed on 1<sup>st</sup> March 2021. The MOU stated that the JICA Project Team would take responsibility for the detailed design and construction of Zone D Subproject with the consensus of Tessaban Mueang Chumphon. The Tessaban would provide initial field inspection, supervise construction, and inspect the construction once completed. The Tessaban would also be responsible for the maintenance and operations management of the subproject.

## **2.7 Lessons Learned**

Public space management is an essential task of the city. The development of public parks in the city center improves the quality of life and enhances both physical and mental health of citizens. An efficient public park also enhances the attractiveness of a city and provides economic opportunities for the locals.

In Chumphon, the Arpakornkiattiwong Park is the main urban park. It is important for all parties to participate in public park development and management to realize their own potentials and understand current issues from different perspectives.

Through discussions with stakeholders, all demands were reflected in the detailed design for the zone. Meanwhile, conflicts of interest among the stakeholders were mitigated and properly managed since they understood each other's situation more than before.

Throughout the planning process, the involvement of multisectoral agencies, such as public and private sectors, citizens, and academic sector, showed a positive result. It was useful for the Tessaban as those agencies helped in identifying the issues in a focused way and shared their own resources, especially knowledge. The Tessaban could optimize their own resources, such as budget, time, and human resources, and avoid a duplication of activities, so it was a useful way to improve and fulfil their plans, programs, and projects effectively and efficiently.

A partnership network was also created. The Tessaban's coordination with national and provincial government was strengthened. In other words, the Tessaban had more chances to propose and discuss their plans or ideas which increased the opportunities for them to gain the support of these organizations. Similarly, the relationship among the Tessaban, the private sector, and the communities improved as a result of the participatory process. On one hand, the citizens (such as vendors and community headers) had more chances to propose their ideas. As they were involved in all the process, the sense of belonging and trust were built which made them take care of the city. On the other hand, the private sector contributed their economic perspective to support the plan and project. In this perspective, the private sector could benefit from urban development; in turn, they could give back to the community.

The Tessaban gained experiences in the planning process which can be applied in the future. Also, they can exchange their experiences with other cities. The experiences from other cities will also motivate them to achieve the sustainable city in the future.

It is expected that the partnership among the multisectoral agencies built by this JICA project will become stronger. To sustain it, the stakeholders should be periodically monitored and evaluated to ensure that they are always involved.

At the same time, the Tessaban faces several limitations, such as budget, personnel, and regulations. Even though projects beyond the Tessaban's capacity can be proposed to the provincial cluster, or provincial office, the Tessaban should explore other financial sources, such as project-based, international, or private funding. It would be a good step to learn how to prepare proposals and to develop partners from these organizations.

The pilot project should be sustained through good maintenance, while its use should be promoted and its events periodically arranged. Through marketing, the city's appeal can be recognized by the public and private sector, as well as visitors. This is not only to complete the implementation of the SFC Plan and projects but also to generate income for the locals.

### **3. Tessaban Mueang Ranong**

#### **3.1 SFC Planning in Ranong**

##### **1) Review of Existing Conditions in Ranong Province**

**Vision of Ranong Province** is "Becoming a leading health tourism city, creative agriculture, livable cities in which people have good health and open trade doors through the Andaman coast".

Ranong has an outstanding potential to become a leading regional center for health tourism especially with its high-quality hot springs situated amid a beautiful natural forest. Ranong has an opportunity to be connected internationally since its border posts the second-highest border trade. The door is open for Ranong to connect its trade and tourism with ASEAN+ countries through Myanmar. Ranong has unique and competitive natural resources which can be a good basis to become an internationally known health tourism center. By further developing facilities, services, and products offered in conjunction with its hot springs and mineral water, these main products and attractions could stimulate more innovation.

##### **2) SFC Planning Work in Tessaban Mueang Ranong**

The SFC Plan of Tessaban Mueang Ranong was formulated based on the SFC planning process, which includes the review of both national and regional plans, analysis of city data, and conduct of a questionnaire survey among the citizens to highlight the key issues and potentials of the city. The results of these were discussed by the PT to formulate the vision for and the strategies used to formulate the SFC Plan for Ranong.

#### **3.2 Vision and Strategies of Ranong's SFC Plan**

**Vision:** "Being the head of health tourism and livable city with well-being",

**Strategy 1: Inclusive and Multiculturalism City:** This strategy focuses on the existing diversities by including all voices in planning for the future. Although the awareness-raising and sense of belonging are different, the diversity covers race, ethnicity, gender, gender identity, sexual orientation, age, social class, physical abilities or attributes, religious or ethical value system, national origin, and political beliefs.

- o Program 1-1 Inclusive and multicultural human resource development
- o Program 1-2 Inclusive and multicultural awareness raising

**Strategy 2: World-class Holistic Health and Wellness Tourism Destination City:** To upgrade local expertise in managing heated mineral waters needs both scientific knowledge and design experience design. Employment and empowerment of human capital in this unique field will help sustain the local economy.

- o Program 2-1 Development of tourism resources

- 0 Program 2-2 Development of local products

**Strategy 3: Green City:** The focus of this strategy is to change the way people see and value environmental resources, especially mangroves. This aims at increasing the commitment to conserve and restore this environmental system. Besides this, the waste management is another key issue to realize a sustainable future city.

- 0 Program 3-1 Sustainable water resource management
- 0 Program 3-2 Sustainable solid waste management
- 0 Program 3-3 Sustainable forest management

**Strategy 4: Healthy City;** Tessaban Mueang Ranong has a vision of a health and wellness city. This is not just about preventing ill health and disabilities but is a holistic approach to maximize physical and mental health and well-being, independence, and social connectedness as people age.

- 0 Program 4-1 Development of healthcare facility and care system
- 0 Program 4-2 Development of elderly care facility and care system
- 0 Program 4-3 Promotion of healthy lifestyle

**Strategy 5: Safe, Convenient, and Comfort City:** This strategy focuses on improving urban design and physical environment which is essential to achieve the city's vision. Design and physical improvement not only promotes the beauty of a city but also facilitates urban safety and manage urban climate.

- 0 Program 5-1 Improvements of park, transport, and cityscape
- 0 Program 5-2 Improvements on safety management

### 3.3 Selection of the JICA Pilot Project

After the formulation of the SFC Plan, the PT selected one program from each of the five (5) strategies to initiate the selection of the pilot project to be supported by JICA. The PT then chose one project from each of the programs, as shown below.

- 0 Transportation Network Design Project using local cars to allow tourists to experience the history and identity of Ranong province (under Program 2-1)
- 0 Healthy Garden and Recreation Development Project (under Program 4-1)
- 0 Walkable City and Streetscape Design and Improvement Project (under Program 5-1)

Tessaban Mueang Ranong planned to improve the sidewalk of Permpnon Road, while the Department of Public Works and Town and Country Planning (DPT) provincial office had a project to design a health garden and improve the monument grounds and riverside along the Khlong Som Pant Canal. Therefore, the participants integrated these potential projects, which are: (i) healthy garden and recreation development project and (ii)



walkable city development into a “Health Park Renovation with Walkable City Networks Project” as the pilot project.

### 3.4 Health Park Renovation with Walkable City Networks Project

#### 1) Project Site



Source: JICA Project Team

**Figure 3.1 Project Site**

The designated project site is in the center of Tessaban Mueang Ranong surrounded by Kamlang Sap Road, Permpon Road, and Hat Som Paen. The important locations in the area are the Ranong Provincial Public Health Office, Ranong hospital, and Hat Som Paen Riverwalk which is connected to the Ranong health park, Ranong City Pillar Shrine, Pho Ta Khing’s Shrine, and Raksawarin hot spring.

#### 2) Design Concept

The walkable city concept was used to design and develop the master plan for the Health Park Renovation with Walkable City Network Project focusing on a linkage between places and recreation nodes to create use of space and activities. The purposes of this masterplan are:

- 0 To enhance space usage and activities
- 0 To connecting the activities in the city
- 0 To increase the efficiency of pedestrian accessibility
- 0 To create a sense of place and belonging through the walk and activities



Source: JICA Project Team

**Figure 3.2 Concept of the Health Park Renovation with Walkable City Network**

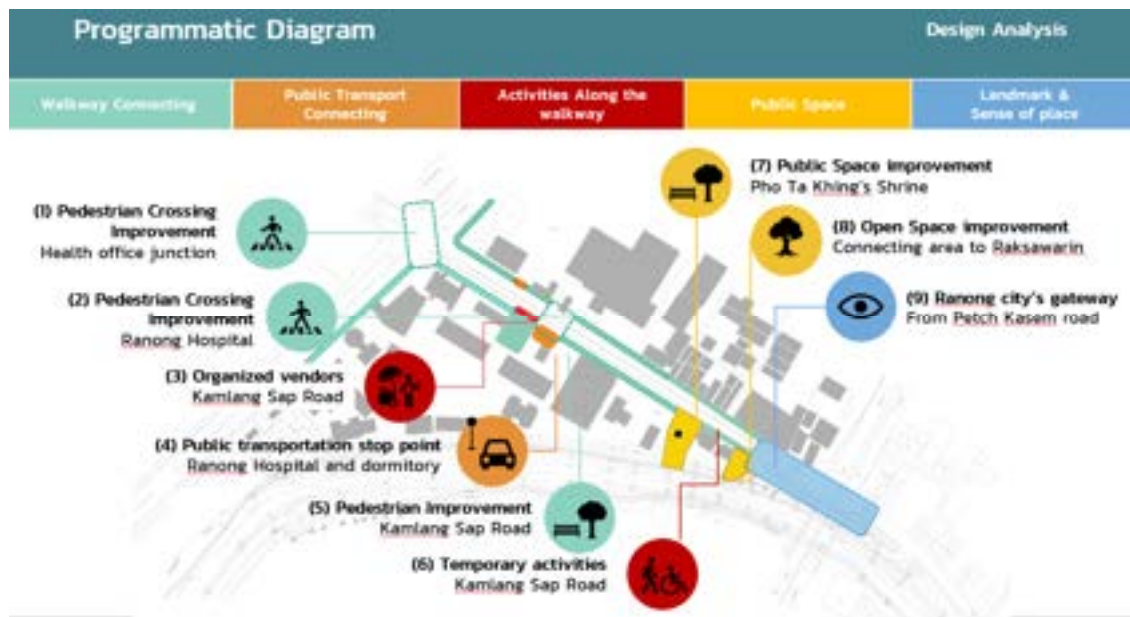
There are five components of the Health Park Renovation with Walkable City Network Project, to wit:

- (1) Walkway Connection: Connection between area and district.
- (2) Public Transport Connection: Connection between district and city.
- (3) Activities along the Walkway: To promote economic activities and efficient management.
- (4) Public Space: Increasing public space, both open space and green space for the communities.
- (5) Landmark and Sense of Place: To promote the identity of the city.

### **3) Master Plan on Health Park Renovation with Walkable City Network**

The master plan is composed of nine (9) design areas on Kamlang Sap Road, namely: (1) health office junction, (2) area in front of Ranong Hospital, (3) street vendors opposite Ranong Hospital, (4) public transportation stop point, (5) pedestrian along Kamlang Sap Road, (6) pedestrian along Kamlang Sap Road in front of Pho Ta Khing's Shrine, (7) Pho Ta Khing's Shrine, (8) open space connecting area to Raksawarin, and (9) open view from Petch Kasem road.





Source: JICA Project Team

**Figure 3.3 Master Plan on Health Park Renovation with Walkable City Network**

#### 4) Projects in the Master Plan by Planning Horizon

The projects under the master plan are divided into three phases, as shown below. The PPT, comprising key stakeholders in the pilot project site, selected the flagship project to prepare the detailed design and implement it using JICA budget.

- **Short-term (Flagship) Project:** Project which can be completed within 6 months and supported by JICA budget. The Tessaban can continue the project by requesting for budget and collaborating with relevant organizations.
- **Mid-term Projects:** Projects that can be completed within 1.5 years. They are projects continued from the short-term project.
- **Long-term Projects:** Projects that can be completed within 3 years to comprehensively fulfill the master plan.

#### 3.5 Design and Construction of the JICA Pilot Project

The JICA pilot project covers two subprojects, namely: 1) design and construction around Ranong Hospital, and 2) design and construction of Pho Ta Khing's Shrine.



Source: JICA Project Team

**Figure 3.4 Design Perspective of the Ranong Hospital Area**

## 1) **Design and Construction around Ranong Hospital**

### ***(Project 2) Pedestrian Crossing Improvement at Ranong Hospital***

Improving the pedestrian crossing in front of Ranong Hospital aims to create connectivity between the area and the district. The improvement of pedestrian crossing focuses on user safety by implementing the following points:

- 0 Make the crossing clearly visible by painting it;
- 0 Use technology for management i.e., traffic calming;
- 0 Install street lighting; and
- 0 Build ramps to connect sidewalks and crossings for everyone.

### ***(Project 3) Organization of Vendors on Kamlang Sap Road***

The purpose of organizing vendors is to develop and support local economic activities effectively. Organized vendors not only enhances the economy but also promotes safety and interaction among the area's users. The components of this project are:

- 0 Organization of vendors by zone;
- 0 Waste management by providing bins for vendors in front of the hospital dormitory; and
- 0 Provision of temporary seats along the fence of the hospital dormitory.



Source: JICA Project Team

**Figure 3.5 Before and After Improvement of the Ranong Hospital Area  
(Project 2 and Project 3)**

***(Project 4) Public Transportation Stop Point***

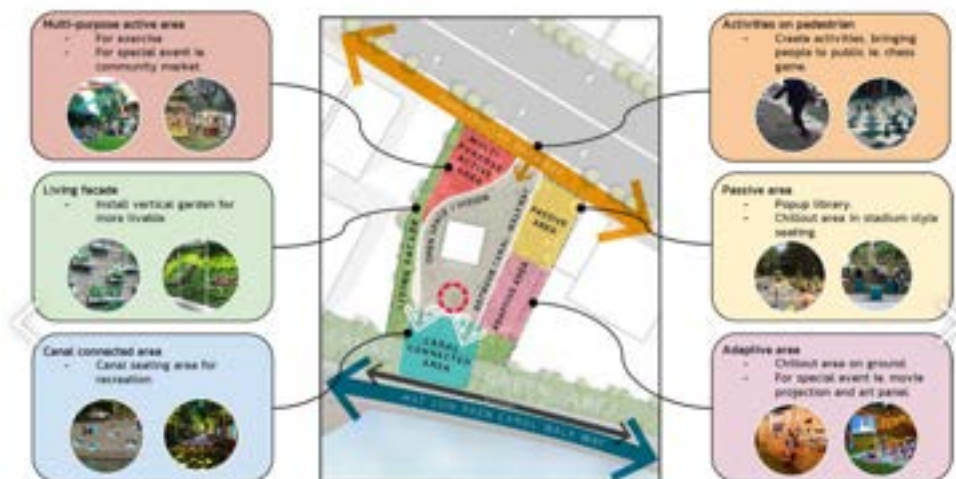
Public transportation stop point aims to create a linkage between the inner and outer city, to promote safety among public transport users, and to enhance area accessibility through public transport. The components are construction (painting the shelter), installation of bus and cross walk signage using universal designs, and installation of lighting and solar cells to save energy and increase the safety in the area.

***(Project 5) Pedestrian Improvement of Kamlang Sap Road***

Kamlang Sap is the main road in the project site. The goal of this improvement is to enhance the efficiency of sidewalks and to promote walking. Its components are:

- 0 Sidewalk extension (detailed design only);
- 0 Installation of temporary parking for motorcycles and bicycles in certain parts of the road;
- 0 Lighting of the sidewalk for safety (detailed design only);
- 0 Installation of pavement device that people can interact with (detailed design only); and
- 0 Tree planting to provide shade while walking.

## 2) Pho Ta Khing's Shrine Area Improvement



Source: JICA Project Team

**Figure 3.6 Design Perspective of the Pho Ta Khing's Shrine Area**

### ***(Project 6) Temporary Activities on the Sidewalk in front of Pho Ta Khing's Shrine***

Creating temporary activities on the sidewalk will not only provide recreational space for the community but will also support event/festival as an outstanding entrance of Pho Ta Khing's Shrine which can be connected to the Raksawarin hot spring. The goals of this area improvement are:

- 0 To encourage temporary activities to promote urban interaction;
- 0 To promote physical activities during festivals or other events in the surrounding area;
- 0 To install pavement devices that people can interact with; and
- 0 To install lighting.



Source: JICA Project Team

**Figure 2.3.7 Before and After the Improvement of Pho Ta Khing's Shrine Area (Project 6)**



### **(Project 7) Public Space Improvement at Pho Ta Khing's Shrine**

The Pho Ta Khing's Shrine is an open space where people in the community interact. The improvement aims to create a space that accommodates a variety of activities, such as exercise and events, and serves as connection to Raksawarin hot spring. The goals of this improvement are:

- 0 To partially open the fence for the activities which pedestrians enjoy on the sidewalk;
- 0 To improve the area to ensure that there are spaces for various activities for the people in the community and district;
- 0 To create an area for interaction among the people in the community;
- 0 To add lighting and CCTV for safety; and
- 0 To install signage about the history of the shrine to create uniqueness.

**Waste management** was considered in the overall pilot project site to keep it clean and to create awareness on waste separation. Separated bins (3R) are located in front of Ranong hospital, in front of the medical staff dormitory, at the bus stop, and at Pho Ta Khing's Shrine area.



Source: JICA Project Team

**Figure 3.8 Bins around#Ranong Hospital and Pho Ta Khing's Shrine**

### **3) Detailed Design**

#### **(Project 9) Ranong City's Gateway**

Ranong City's gateway aims link the primary road (Phetkesem) and the inner city. Open spaces connecting to Raksawarin hot spring will be improved to attract visitors. These improvement components are:

- 0 Creation of a visual point from the pathway leading from Raksawarin;
- 0 Seamless adaptation to the waterfront corridor;
- 0 Being the area for community focusing on physical activities;
- 0 Addition of elements to create pedestrian-friendly environment; and
- 0 Addition of elements that represent a healthy city i.e., growing trees, adding shade.



Source: JICA Project Team

**Figure 3.9 Design Perspective of Ranong City's Gateway**

### **3.6 MOU on the Detailed Design and Construction of Kamlang Sap Road Area under JICA Budget**

The detailed design and construction of Kamlang Sap Road area under the Health Park Renovation with Walkable City Network Project started with the financial support from JICA. The MOU was signed on 25<sup>th</sup> February 2021. The MOU stated that the JICA Project Team would take responsibility for the detailed design and construction in Kamlang Sap Road area with the consensus of Tessaban Mueang Ranong. On the other hand, the Tessaban would support the detailed design and construction of Kamlang Sap Road areas and would conduct the initial field inspection, supervise construction, and inspect the construction once completed. The Tessaban would also be responsible for the operations management of the Kamlang Sap Road and Pho Ta Khing Shrine after the pilot project completion.

### **3.7 Lessons Learned**

The sustainable walkable city concept is a goal for global city. The concept promotes the well-being of people living in the city by encouraging walking to places. It is also an important part of keeping the city livable. Bustling, conducive sidewalks and spaces encourage people to spend more time outside and interact more, which helps in economic recovery. It also answers to calls for saving energy, preserving the environment, and solving traffic problems.

As Tessaban Mueang Ranong has a small size and surrounded by a natural environment, the pilot project was an essential part for improving the urban environment, connecting the tourism attractions, enhancing the health and well-being of its citizens and visitors. It is perfectly compatible with the city's vision aiming to become a health tourism city.

The pilot project mainly covered public space, especially road. Getting opinions, concepts, and directions from different perspectives from the public, private, and civil sectors to

design and improve the city was crucial and useful to develop and design public space because the Tessaban can truly proceed with the project in accordance with the people's demands. Using the public participatory process has become key to the success of the Tessaban.

Changes to the administration team was a key challenge to Tessaban Mueang Ranong because it lacked an understanding of the planning and implementation process. However, the discussions with the Tessaban and the participatory process have allowed the Tessaban to learn and build its capacity in planning and design, skills which can be used in the future. In addition, the Tessaban has increased its capacity to build partnerships with other relevant agencies and collaborate with its citizens to determine the city's future direction efficiently and effectively.

The participatory process also created the awareness in urban development and changes in behavior in terms of using a public space, such as safe road crossing, reduced car speed, and use of public transport. As the pilot project provided temporary parking space and developed a bus stop in the city, the locals learned how to follow traffic rules and became aware of shared spaces. Therefore, maintaining the quality and promoting the pilot project are imperative for it to be sustained.

In the future, the Tessaban should develop and extend its partnerships and keep working on the participatory approach to gain further support for its SFC Plan. The pilot project was a good step for the Tessaban to initiate collaboration and gain either technical or financial support, as well as to build the capacity of local staff. In the end, Ranong will be the best-practice city in Thailand in terms of a walkable city in Thailand and to further achieve sustainable urban development.

## 4. Operations and Management Plan

### 4.1 Direction for Operations and Management Plan

The operations and management (O&M) Plan aims to enhance the efficiency of management, to provide safety for the users, and to contribute to the sense of belonging to all stakeholders in the city. With these objectives, the collaboration among the public, private, and civil sectors to efficiently share the responsibilities is essential. Therefore, the key roles and responsibilities of an O&M team will be allocated to different agencies based on their potentials and capacities to reach maximum benefits from using the pilot project.

### 4.2 Establishment of an O&M Team

The PPT agreed that Tessaban Mueang Chumphon and Tessaban Mueang Ranong themselves should be the main agencies or the focal points of the O&M team. This is because the Tessaban has, in accordance with the provisions of the law, powers, and duties for the management of public areas. The O&M Team consists of representatives from the public, private, and civil sectors, as well as all stakeholders in the project site (Figure 4.1 and Figure 4.2).

Tessaban	Community (representatives)	Private corporations (representatives)	Public Organisations (representatives)
<ul style="list-style-type: none"> <li>•Mayor</li> <li>•Clerk office</li> <li>•Director of Strategy and Budget Division.</li> <li>•Director of finance division</li> <li>•Director of Public Works Division</li> <li>•Director of Public Health and Environment Division</li> <li>•Director of Social welfare</li> <li>•Etc.</li> </ul>	<ul style="list-style-type: none"> <li>•Head of Community</li> <li>•Nearby Communities</li> <li>•Group of interests</li> </ul>	<ul style="list-style-type: none"> <li>•Chamber of Commerce</li> <li>•Motorcycle Taxi Group</li> <li>•Vendors in the park</li> <li>•Shop Owners nearby</li> <li>•Etc.</li> </ul>	<ul style="list-style-type: none"> <li>•Sport Authority</li> <li>•DPT</li> <li>•TAT</li> <li>•Etc.</li> </ul>

Source: JICA Project Team

**Figure 4.1 Members of the Chumphon O&M Team**



Tessaban	Community (representatives)	Private corporations (representatives)	Public Organisations (representatives)
<ul style="list-style-type: none"> <li>•Mayor</li> <li>•Clerk office</li> <li>•Director of technical planning division</li> <li>•Director of finance division</li> <li>•Director of Public Works Division</li> <li>•Director of Education division</li> <li>•Director of Public Health and Environment Division</li> <li>•Director of Social welfare</li> <li>•Etc.</li> </ul>	<ul style="list-style-type: none"> <li>•Head of Por Ta King Community</li> <li>•Communities nearby Ranong hospital</li> <li>•Cycle group</li> <li>•Group of interests</li> </ul>	<ul style="list-style-type: none"> <li>•Ranong Chamber of Commerce</li> <li>•Bus operator</li> <li>•Motorcycle Taxi Group</li> <li>•Food-carts vendors</li> <li>•Shop Owners along the street</li> <li>•Etc.</li> </ul>	<ul style="list-style-type: none"> <li>•DPT</li> <li>•Ranong hospital</li> <li>•Police officers</li> <li>•Public Agency along the street</li> <li>•TAT</li> <li>•Etc.</li> </ul>

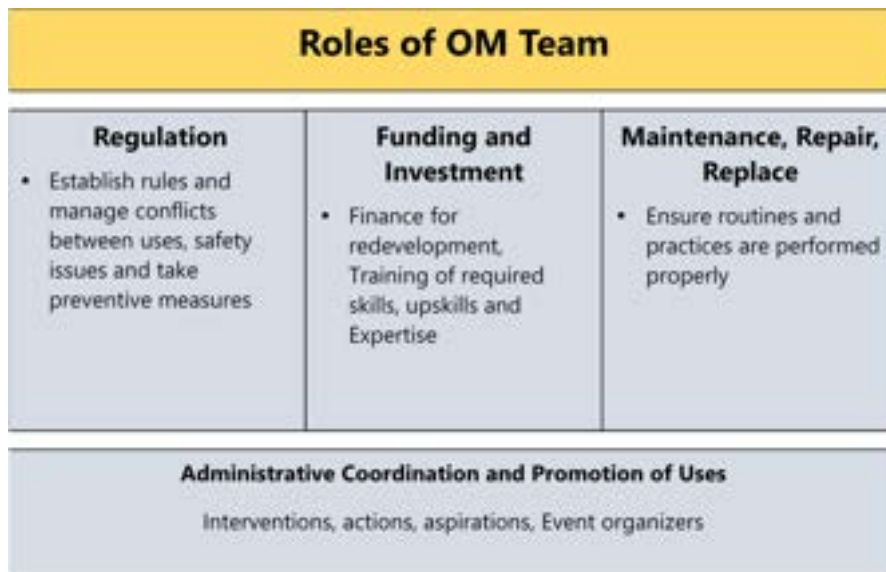
Source: JICA Project Team

**Figure 4.2 Members of the Ranong O&M Team**

To achieve the goals of the O&M plan, it is highly recommended that the O&M Team be authorized by the Tessaban to be formed as a committee. The purpose of the O&M committee is to maintain and secure the construction of the pilot project, organize events, and promote the overall developments proposed in the master plan.

#### **4.3 Roles and Responsibilities of an O&M Team**

There are four key roles of an O&M team, namely: 1) formulation of rules and regulations; 2) funding and investment; 3) preparation of a maintenance plan (maintenance, repair, and replacement); and, 4) administration and promotion of uses. The details of these roles are illustrated in Figure 4.3.



Source: JICA Project Team

**Figure 4.3 Roles and Responsibilities of an O&M Team**

**1) Rules and Regulations**

Rules and regulations refer to the establishment of rules to ensure the usage of the pilot project and to manage the conflicts of interest among stakeholders. This can be done by setting zoning, regulating access and uses to match the needs of users, and to prevent the risks that may occur. In addition, rules and regulations should be used to promote economic, social, and environmental aspects, for instance, the cleanliness of the site, using clean energy, no smoke, and promoting the use of local products. To do this, the Tessaban can establish incentives to ensure citizen engagement, to promote responsible behaviors, and to increase awareness on using the area efficiently.

**2) Funding and Investment**

Funding and investment can be done in line with the fiscal year to request budgets from different financial sources. It is necessary to secure the budget for maintenance and operation of the project. Despite the majority of funding being under the Tessaban, it should prepare the proposal to private and international agencies to gain further support. These could be either budget or technical support to complete the project and plan. This will help Tessaban to reduce its financial burden for operations management.

Besides the Tessaban’s budget, there are four potential financial sources, and these are public expenditure, project-based fund, international public finance, and private sector finance. The details are summarized below.

**(1) Public Expenditure:** There are three groups of budgets, namely, resources allocated to the ministries (based on function and proposed strategies), budget for policy integration based on the government’s agenda, and budget allocated to area-based integration, for example, provincial clusters or regional plans.

**(2) Project-based Fund:** Besides the existing public budget, there are public organizations which work on a project grant basis. The remaining government budget is composed of funds of state-owned enterprises which operate several issue-based projects on their strategies, for example, smart cities, smart farmers, community-based tourism. Therefore, project-based funds are a special program set by the organizations with a specific period. The objectives, requirement, and details will be differed by projects and period. Thus, the Tessaban is required to submit their own project proposals to the funding organization's platform. The examples are:

- City & Community Innovation Challenge 2022 by the National Innovation Agency (NIA) and
- Thai Health Promotion Foundation Fund.

**(3) International Public Finance:** This aims to build the capacity of locals along global concerns, such as climate change, old-city development, and creative city development. International agencies could provide both financial and technical support. Thus, the Tessaban can learn and develop their own skills in different aspects, such as wastewater management and clean energy use. Also, some international agencies provide grants through awards to raise the awareness and encourage the city development in different topics. Sustainable development goals are the focus of these international organizations. The examples are:

- The World Organization of United Cities and Local Governments
- SWITCH-Asia by the European Union

**(4) Private Sector Finance:** This refers to fundraising or collaborating with the private sector to increase financial capacity and to promote the use of the project through activities. The Tessaban can gain support from private sector by fundraising or joining CSR project. The examples of CSR programs are:

- Sharing Opportunities Program by SCG Foundation
- "Chum-Chon-Yim-Dai (Smiley Community) by PTT Foundation
- "The 7<sup>th</sup> Thailand Bike and Walk Forum; Think Globally, Bike Walk Locally" by Thailand Walking and Cycling Institute Foundation

Besides these, it is recommended that the O&M team consider the influence of volunteer groups, such as coffee club, dance club, and kids club, to cultivate awareness and to motivate them in urban development. It is widely accepted that this sector can be used to help deliver wider government agendas such as health improvement, community cohesion, reductions in delinquency, and improvements in educational attainment. Some of these activities will be formulated as event calendar and can be used to incorporate OM objectives.

### 3) **Maintenance**

This refers to establishing clear guidelines for the maintenance of the pilot project area. Determining an area maintenance plan is an important aspect of site management. The maintenance of various physical elements in the area aims to secure the quality of construction and increase the safety for the users.

The O&M Team is required to monitor and evaluate the construction periodically and to prepare a comprehensive maintenance plan, including usage guidance, inventory of quality check, and maintenance guideline. Also, the procurement of a private firm for routine works and its maintenance may be required.

Custodial/housekeeping aspects is another important service to ensure that the construction site is clean and functional. This is part of public service that is essential for maintenance, promotion of uses, and creation of good image and user experience. Therefore, this should be operated as routine work.

Reporting of problems and damage is also crucial to secure the construction and equipment that may cause risk to the users. The O&M Team should continually resolve the problems and damages to mitigate the possible risks and to find maintenance solutions. Based on the severity of the problem or damage, the remedy will take one of the following three ways:

- **Maintenance:** This refers to the work necessary to maintain the facilities and equipment. Maintenance includes periodic or occasional inspection, adjustment, lubrication, cleaning (non-janitorial), painting, replacement of parts, minor repairs, and other actions to prolong service and prevent unforeseen breakdowns.
- **Repair:** This refers to restoring damaged or worn-out facilities and equipment, or to a normal operating condition. Repairs are curative, whereas maintenance is preventive. Repairs can be classified as minor or major. Minor repairs are those associated with maintenance activities that do not exceed 1–2 workdays per task. Major repairs are those that exceed 2 workdays per task or are beyond the capability of existing maintenance personnel.
- **Replacement:** This refers to facility and equipment components or systems which need to be replaced. It is the exchange or substitution of one fixed asset for another having the capacity to perform the same function. Replacement arises from an asset becoming obsolete, having excessive wear and tear, or being damaged beyond repair.

### 4) **Administration and Promotion of Uses**

Administration and promotion of uses aims to perform all the above responsibilities, to develop the skills for operations management, and to promote economic activities to generate income for the locals. This also involves event preparation to promote the area

to outsiders. The promotion of uses can be designed as a supporting mechanism. Also, regular meetings of the O&M Team is required to prepare the plan and to solve any issue in the next step.

The O&M Team should prepare an annual event schedule to promote the use of the project site. Event can involve the following issues:

- Learning, planning, and monitoring activities, such as exchange learning trip with other future cities;
- Maintenance activities and events, such as tree trimming and planting day, big cleaning day, and walking street day; and
- Cultural activities and PR events (Table 4.1).

**Table 4.1 Potential Activities in Tessaban Mueang Chumphon and Tessaban Mueang Ranong**

<b>Tessaban Mueang Chumphon</b>			
<b>Activity</b>	<b>Objective</b>	<b>Organizer/Target</b>	<b>Budget Source</b>
“Art and craft with COCO collective in the park”	. To promote use of venue . To raise awareness of multifunctional site . To promote local products	@ChumphonCollective Agricultural cooperative Community	Fundraising from shops and vendors Tessaban
“Creative tourism and Food Fun Fair activities in the park”	. To promote tourism . To promote local shops	University of MaeJoo, Chumphon Campus	Fundraising from shops and vendors Tessaban
“Coffee festival”	. To promote use of venue . To raise awareness of multifunctional site . To promote local products	Tourism Authority of Thailand (TAT) Tessaban	Fundraising from shops and vendors Tessaban
<b>Farmers market in the park</b>	. To create space for distribution of local products . To create an exchange of understanding about farmer and local wisdom . To promote quality of local products	Tessaban Community Local shop Farmer Thai Health Promotion Foundation TAT NIA	Tessaban
<b>Health and well-being: Weekend gathering</b> - Book reading and music in the park - Coffee, tea, and free healthy living tips - Kids and my little tree day	. To engage residents in a healthy living promotion/preventive measures . To engage Tessaban with communities (opportunities to have feedbacks)	Tessaban Community	Tessaban
<b>Tessaban Mueang Ranong</b>			
<b>Activity</b>	<b>Objective</b>	<b>Organizer/Target</b>	<b>Budget Source</b>
“Ranong Cyclist fun day -art and craft in the park”	. To promote use of venue . To raise awareness of multifunctional site	Bicycle Club Ranong Pracharat RakSamakdee Ranong	SCG Foundation

	<ul style="list-style-type: none"> <li>. To access the other financial sources</li> </ul>		
“City Walking Tour: Food Fun Fair activities in the park”	<ul style="list-style-type: none"> <li>. To promote use of venue</li> <li>. To raise awareness of multifunctional site</li> <li>To generate income to locals</li> </ul>	Suan Sunandha Rajabhat University, Ranong Campus (Faculty of Tourism)	SCG Foundation
“Mini hot spring at POR TA KING: product and innovation from hot spring showcase”	<ul style="list-style-type: none"> <li>. To promote the local resources</li> <li>. To raise awareness of multifunctional site</li> <li>. To generate income to locals</li> </ul>	TAT Pracharat Raksamakee Ranong	Fundraising from shops and vendors Thai Health Promotion Foundation SCG Foundation
Story of Por Ta Khing and music in the park	<ul style="list-style-type: none"> <li>. To provide a space to learn about local history and wisdom</li> <li>. To create an exchange of understanding about local values and local assets</li> <li>. To promote quality time and to build family bonding and happiness</li> </ul>	Community Tessaban TAT School Sport Club	Tessaban TAT
Bike and Walk Route and Circuit: the hidden tale in Ranong	<ul style="list-style-type: none"> <li>. To engage residents in a healthy living promotion/ preventive measures</li> <li>. To promote tourism and walking trail connectivity</li> <li>. To engage Tessaban with communities (opportunities to have feedbacks)</li> </ul>	Community Tessaban TAT Bicycle Club Ranong	Tessaban Thai Health Promotion Foundation TAT

Source: JICA Project Team

## 5. **Monitoring of the First Phase Model City Projects**

Monitoring activities have been conducted annually since the completion of the model city projects for three years, from 2019 to 2021. The purpose is to check the progress of SFC Plans and Projects of model cities as well as to get feedback for the SFCI. More specifically, the objectives of monitoring are;

- to evaluate the progress of the SFC Plan and Projects;
- to monitor the status of the output of the JICA Pilot Project;
- to gain lessons learned from each city, key success, and challenges; and
- to get a recommendation to continue SFCI.

The first monitoring activities were in 2019, aimed to screen, examine, and update the output of the model city project. It also aimed to examine possibilities of providing more support in implementing SFC Projects by the relevant departments.

The second monitoring activities were in mid-2020 after restriction measures under COVID-19 were lifted. It aimed to review the impacts of COVID-19, measures responding to COVID-19, emerging urban issues, and adaptation of outputs of SFCI under COVID-19, as well as checking the progress of the SFC Plan and Projects. The final monitoring activities were conducted in the final stage of the TFCP in mid-2021.

### **Progress of SFC Plan**

Progress of SF Projects and the five-year action plan of 6 tessabans were assessed in order to categorize into projects that have been implemented, those that are in process, and those that have been delayed. Based on the result of assessment, necessary adjustment and actions have been identified, including revision of the plans, further coordination with relevant department, etc.

Monitoring results showed that all six tessabans were proceeding with their SFC plans as originally planned, although there were some delays due to COVID-19. Some of them already adjusted it in accordance with socio-economic changes of each city.

### **Status and Future Direction of JICA Pilot Project**

Output of the JICA Pilot Project were assessed and evaluated on the following points;

- How they operate and maintain the quality of project construction: Conditions of output of pilot project in most of tessabans are good in general. Tessabans are in charge of overall maintenance, including regular maintenance activities and coordination with communities.
- How the tessaban utilizes the output: Some of tessaban integrated what they learned from the pilot project into next projects,

## **Lessons Learned from SFCI**

Monitoring activities revealed that all of tessabans have learned a lot of lessons through SFCI activities and utilized them to implement SFC Projects continuously toward sustainable development of each city. Key lessons learned from SFCI can be summarized as below;

**Sustainability through participatory approach:** All of tessabans applied participatory approach in the SFCI process, which involve various stakeholders from the planning to the implementation of pilot project. Many tessabans realized that such participatory approach has gained trust and reliability among local stakeholders and thus contributed sustainable implementation of SFC Projects and effective O&M of the completed projects.

**Tessaban's strong commitment on SFC Projects:** Through monitoring activities, it was found that all tessabans have continued to implement the SFC Projects, with strong commitment of Mayor. At each stage of the SFCI planning process, the commitment of the Mayor was confirmed. This has contributed greatly to continuity of the SFC Projects.

**Lessons from Japanese Cities:** Many tessabans got inspired by experiences of Japanese Cities, through Study Tour in Japan or advice from JICA Project Team, particularly for newly emerging issues in Thailand, such as aged society, universal design, multi-generational interaction, etc. Such lessons have been integrated them into SFC Projects, particularly for pilot project activities.

**Partnership among relevant organizations:** All tessabans found partnership or networking with relevant organizations as key of success. Participatory process and collaborative approach under SFCI have greatly contributed to enhance tessaban's partnership with local stakeholders, including private sector, key provincial department, civil society, and surrounding tessabans.

**Capacity development of tessaban:** One of the most fundamental factors for sustainable development is capacity of tessaban's staff. The SFCI model city projects have emphasized that the tessaban's SFCI Team should take the lead to prepare SFC Plan and Project. Moreover, SFCI planning process, including PT meeting, community workshop and learning workshop for tessaban, have greatly contributed to enhance tessaban's capacity.



# 1. Tessaban Mueang Chumphon

## 1.1 SFC Plan, Program, and Projects

### 1.1.1 Outline

#### 1) Location and Position in Regional Context



Source: Chumphon PAO Development Plan

**Figure 1.1.1 Location of Chumphon Province**

Chumphon province is the gateway to southern Thailand. On its east lies the Gulf of Thailand, while on the west are the northern hills of the Phuket range. The area is about 6,009 km<sup>2</sup> and is mostly cradled by the Phuket mountains. The Isthmus of Kra, the narrow land bridge connecting the Malay Peninsula with mainland Thailand, is partly located in Chumphon. As a gateway, the province has a western route to connect to the Andaman coast through Myanmar.

Tessaban Mueang Chumphon is the center of Chumphon province. The city comprises Tambon Tha Taphao and parts of five other tambons, i.e., Bang Mak, Wang Phai, Na Thung, Tak Daet, and Khun Krathing. It is approximately 21.10 km<sup>2</sup> in size, flat, and has no beach.

#### 2) Regional Accessibility

There are no international flights to Chumphon airport, only domestic flights to Bangkok via two airlines. Meanwhile, the main road access starts at Phet Kasem Road (National Highway (NH) 4) from Bangkok. Southward, NH4 intersects with NH327 in the east leading to Chumphon City and with NH41, leading to other southern provinces and Ranong in the west. Chumphon has an important railway station being the first refueling point in the southern railway network. The station is 486.53 km from Bangkok (around 8 to 9 hours of travel).

### **3) Position in National and Regional Development Policy**

With its location and accessibility, Chumphon is pointed out as a strategic location. It is part of the Southern Economic Corridor (SEC), which links the Andaman Sea, the Gulf of Thailand, and countries along the Indian Ocean rim. Governments have formulated strategies to optimize SEC's competitiveness based on its unique opportunities.

In addition, due to its coastal geography, Chumphon province is now promoting its city as a secondary tourist destination. Under this initiative, Chumphon is expected to achieve a better tourist dispersion from the primary tourist cities such as Bangkok, Chiang Mai, and Phuket.

### **4) Chumphon Urban Area**

Chumphon's urban area covers Tassaban Mueang Chumphon, Tambon Tha Yang, and Tambon Wang Phai. As of 2017, its population was approximately 83,670, showing a gradual increase from 10 years ago (i.e., 81,530 persons, 2007). Its area is approximately 291.45 km<sup>2</sup> with a density of about 287 persons/km<sup>2</sup>.

### **5) Tassaban Mueang Chumphon**

Tassaban Mueang Chumphon is 463 km from Bangkok. As of 2017, its population was about 31,864 with a gradual decrease from the past decade. The area covers 21.1 km<sup>2</sup> with a density of 1,510 person/km<sup>2</sup>.

## **1.1.2 Current Situation**

### **1) Economy**

The key economic sector in Chumphon province is agriculture (45 percent), followed by service and tourism (42 percent), and industry (13 percent). Agriculture can be broken down into two subsectors, namely agricultural products and fishery.

The agricultural area in Chumphon province is approximately 3.75 million rai which covers over half of the total provincial area (58.11 percent). Five major economic crops are palm oil, durian, rubber, coconut, and coffee. Chumphon is the largest Robusta coffee bean producer in Thailand, meanwhile the province has been the second-largest producer of coconuts and durian. Palm oil, rubber, and durian have become more popular and valuable agricultural products.

The secondary economic sector of Chumphon is services and tourism. Chumphon province is now being promoted as a secondary tourism city or alternative destination by the Tourism Authority of Thailand (TAT). The project aims to achieve a better tourist dispersion between main destinations and alternative destinations at a ratio of 70 to 30.

Chumphon Province has 1.5 million tourist arrivals. This number is expected to grow once the campaign has reached more international tourists and incentives for the domestic market have widely been placed. Currently, the share of international tourist arrivals makes up less than 10%. Majority of tourists are Thais (92%), as is the case in most secondary cities in the country. The limited accessibility whether through air, road, or rail is the key obstacle; this has also been aggravated by the limited number of tourist facilities. For example, in Chumphon there is only one international hotel chain (Novotel). There is also no hotel that

can accommodate large meetings and conventions.

In terms of daily tourist expenditure, accommodation expense (THB 484.08) is lower than the amount of food spending (THB 523.24), which offers an opportunity to boost food tourism.

**Table 1.1.1 Daily Expenditure in Chumphon by Thais and International Tourists**

Daily expenditure	Thai tourist			International tourist		
	2016	2017	% Change	2016	2017	% Change
1. Accommodation	462.46	484.08	+ 4.67	697.24	764.86	+ 9.70
2. Food and beverage	486.80	523.24	+ 7.49	597.17	658.79	+ 10.32
3. Souvenir	316.38	328.81	+ 3.93	418.48	441.73	+ 5.56
4. Entertainment	174.53	181.89	+ 4.22	253.20	274.75	+ 8.51
5. Services	173.23	182.11	+ 5.13	172.38	185.69	+ 7.72
6. Transportation	267.61	275.23	+ 2.85	270.84	280.17	+ 3.44
7. Others	132.01	138.03	+ 4.56	66.40	70.66	+ 6.42
<b>Dairy spending/ person</b>	<b>2,013.02</b>	<b>2,113.39</b>	<b>+ 4.99</b>	<b>2,475.71</b>	<b>2,676.65</b>	<b>+ 8.12</b>

Source: Ministry of Tourism and Sports, 2018

Besides typical “sand, sea, and sun” attractions, community-based tourism (CBT) has been promoted as one of the main tourist brands of Chumphon Province. There are thematic routes which are offered now, and the network of CBT in the province is very strong, providing a basis for further development and linkages between the center of city (Tessaban area) and other CBT destinations.



Source: Chumphon CBT network, 2019

**Figure 1.1.2 Community-based Tourism in Chumphon Province**

Agro-industry is the biggest industry in Chumphon province. As the province produces many agricultural products, high-value products are food and beverage, rubber and plastic products, and OTOP products.

Tessaban Mueang Chumphon functions as a commercial center. The key economic activities are retail and services, such as food and beverage shops, grocery shops, and beauty salons, etc. Such commercial activities mainly serve the tourists and other visitors. Other occupations, such as farming, orchard growing, and fisheries, are mostly located around the Tessaban's area.

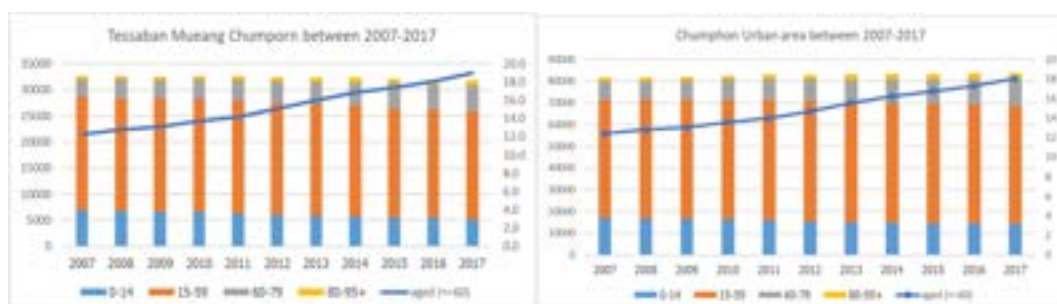
Despite having limited agricultural area, Tessaban Mueang Chumphon has the potential to become a distribution center for destinations within the city and in other provinces. As most of its agricultural areas are located around the Tessaban, another potential is to promote the agricultural tourism.

Besides the above, almost half of Tessaban Mueang Chumphon's residents work as fishermen. However, fishing for freshwater fish in the canal has become more difficult due to the worsening quality of water and the presence of mosquito.

In Tessaban Mueang Chumphon, there are only small-scale industries, such as those water industry and food (like meatballs, noodles, and ice cream). However, such industries caused environmental issues, especially noise, dust, and wastewater, due to the industries' unsuitable locations. Thus, some industries have been closed.

## 2) Society

In 2017, the population of Tessaban Mueang Chumphon was 31,864 which showed a slight decrease in the past 10 years. Meanwhile, the population in the urban area gradually increased from 81,530 in 2007 to 83,670 in 2017. The population has remained concentrated in the city center at about 1,510 persons/km<sup>2</sup> compared to 287 persons/km<sup>2</sup> in the urban area.

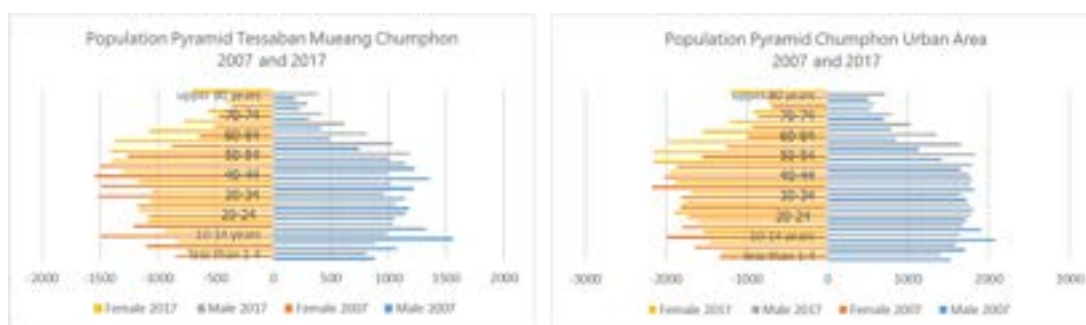


Source: JICA Project Team

**Figure 1.1.3 Population Trend in Tessaban Mueang Chumphon and Chumphon's Urban Area**

In Tessaban Mueang Chumphon, the aging population has rapidly increased. Over the past ten years, the number of ageing population is almost doubled from 3,984 in 2007 to 6,046 in 2017. The ageing ratio (19 percent) has almost reached 20 percent in 2017. It can be implied that Tessaban Mueang Chumphon is now becoming an aged society. Similarly, the ageing population in the urban area is continually growing from 10,635 persons in 2007 and 15,087 persons in 2017. In 2017, the ageing ratio become 18 percent reaching the aged

society.



Source: JICA Project Team

**Figure 1.1.4 Population Pyramid in Tessaban Mueang Chumphon and Chumphon Urban Area**

The upward trend of ageing population in Tessaban Mueang Chumphon causes a concern. Looking at the population between 2007 and 2017, the shape has changed to a constrictive pyramid, referring to the higher number of elderly people while the overall population is shrinking. Another evidence of this concern is the dependency ratio, which, reached almost half of Tessaban Mueang Chumphon’s population in 2007. In 2017, the ratio surged to over half at 54.6 percent. This higher ratio presented the greater burden for the working-age population. To mitigate this burden, the development of ageing people has become more essential. The quality of ageing and elderly people will not only reduce the burden in medical services but also the burden of households.

**Employment/Labor forces:** In 2017, the labor force in Chumphon province comprised of agricultural workers (53%), followed by service (37%) and industrial sectors (10%). Interestingly, the number of populations aged 15 and older slightly decreased by 4,284 from 2012 to 2017. Its unemployment rate was lower than the national figure; it was only 1,808 unemployed persons in 2017 or about 0.65% of the population at that time.

In addition to agricultural work, other occupations are wholesale, retail, and automotive (39,898), followed by accommodation and food (18,739), and construction services (15,581). This number could also mean that trade and retail accounted for a high proportion of business activities in the Tessaban. Developing start-ups or new ventures related to the trading of local products and produce could present additional value to the existing economy.

**Migrant:** As of August 2018, the number of foreign workers reached 37,328, an increase of 3,141 from 2017, which totaled 34,187. The number of illegal foreign workers decreased significantly due to the government’s measures to allow illegal foreign workers to register themselves into the legal system in 2018.

In many sectors, there are insufficient frontline staff and/or unskilled workers. Opening up opportunity for more migrants to enter the system allows employers to access lower costs of labor. This is a double-edged sword situation for a country trying to develop more value-added economy where creativity and upskilling labor are essential. In many cases, filling in with cheaper migrant labor could be a major impediment to such strategies. Managing human capital and labor force in the city is key to a sustainable future.

**Education:** There are eight (8) public schools and eight (8) private schools in Tessaban Mueang Chumphon, 14 of which are under the Ministry of Education and two under the Tessaban. There is one international school called Theodore International school. All these schools offer primary to secondary education.

There are three (3) tertiary institutions in Chumphon Province, namely King Mongkut's Institute of Technology Ladkrabang Chumphon Khet Udomsak Campus, Maejo University – Chumphon, and Institute of Physical Education Chumphon Campus. These institutions have strong partnerships with the public sector and play a significant role in city development. Such territory institutions in the area could help further provide the needed skilled workforce.

**Public Health:** In Chumphon Province, there are 13 public and three (3) private hospitals, as well as tambon health centers in over 100 locations. Considering the ratio of medical personnel compared to the population, the ratio is higher than the national average and the average of the southern region in all types of personnel.

In the tessaban, there are several medical services serving the population. There are one public and two private hospitals. The tessaban also has four medical centers and two community health centers. Beside this, there are several medical and dental clinics, as well as pharmacies in the city center.

**Crime:** Crimes against persons in Chumphon decreased in 2016-2017 and cases against property slightly increased in 2017. It is important to note that while the case in which the state is the victim reduced significantly, drug cases are still shocking. Drug situation in Chumphon Province during the past year spread in various villages / communities with many related factors attributed to this issue.

### **3) Environment**

In Chumphon province, the forest area accounts for 798,173.53 rai, made up 21.29% of the province. However, there are a few forested areas in the Tessaban, most of which are located outside the city center.

The air quality in Chumphon Province is normal. The result of dust measurements of not more than 10 microns is at 0.043, which does not exceed the standard value of 0.12 mg per cubic meter.

The noise level in Chumphon Province does not exceed the standard. The average noise level for 24 hours is not more than 70 decibels, while the maximum noise level is not more than 115 decibels.

**Water resources:** The two major rivers in Tessaban Mueang Chumphon are Tha Taphao river and Chumphon river, both of which run through Mueang districts. Tha Taphao river was formed by the merging of Tha Sae and Rub Roh canals and flow into the sea at Pak Nam sub-district. Its length is about 33 kilometers. Chumphon river originates in Kraburi district, Ranong province, flowing out at the Ao Sawee, Thung Kha sub-district. Its length is about 50 kilometers.

The water resources in Chumphon are in fair condition in accordance with the standard for water type 3, which can be used for consumption and agriculture. However, some heavy

metals have been detected in the rivers, such as lead, mercury, chromium, and cadmium. In particular, the coliform bacteria are relatively high in the urban area because the water is contaminated by water runoff from human activities, such as agriculture, industries, and general consumption. At present, Chumphon province still has no wastewater treatment system.

**Solid waste:** Another key environmental issue is solid waste management. Chumphon Province has 47 solid waste management service providers, namely Tessaban Mueang Chumphon and Lang Suan Municipality, 23 municipalities and 22 administrative organizations with 17 solid waste disposal facilities, and two others with waste incinerators, namely Tako Subdistrict Administration Organization and Phato Sub-district Municipality.

By 2018, the amount of solid waste that was collected within Tessaban Mueang Chumphon was about 650 tons per year, which did not include the amount of solid waste that is collected for sale and some solid waste that people in the communities dispose of by themselves. This waste will be dumped into the fields. Without being properly landfilled in accordance with full sanitary standards, the practice caused large volumes of solid waste to accumulate in the area.

At present, Tessaban Mueang Chumphon is in the process of developing a community-based waste-to-energy project of 5.0 megawatts under a build-own-operate-transfer (BOOT) scheme. Service during the specified period with ownership of the assets will be transferred to the government at the end of the contract.

**Green Space:** In Tessaban Mueang Chumphon, there are parks and important recreation areas. These include the central stadium, which has an area of 49,776 m<sup>2</sup> (31.11 rai) and Aphakorn Kiatwong Park, which has an area of 47,184 m<sup>2</sup> (29.49 rai). Both are adjacent to each other and provide green spaces for the creation of activity areas in the urban area.

The World Health Organization (WHO) stated that the average green area per population should be 9 m<sup>2</sup> per person or more. The standard of Thailand is 16 m<sup>2</sup> per person.

The green space in Tessaban Mueang Chumphon is 276.38 m<sup>2</sup> per person, which is higher than both the international and national standards. The green space per person in Tessaban Mueang Chumphon is high because the area around the municipality is an agricultural area, such as fields of perennial trees and fruit trees. These areas are counted as green space or "community economy," which is 6.59 km<sup>2</sup> or 71.87% of the total green area.



#### 4) Urban Development and Infrastructure

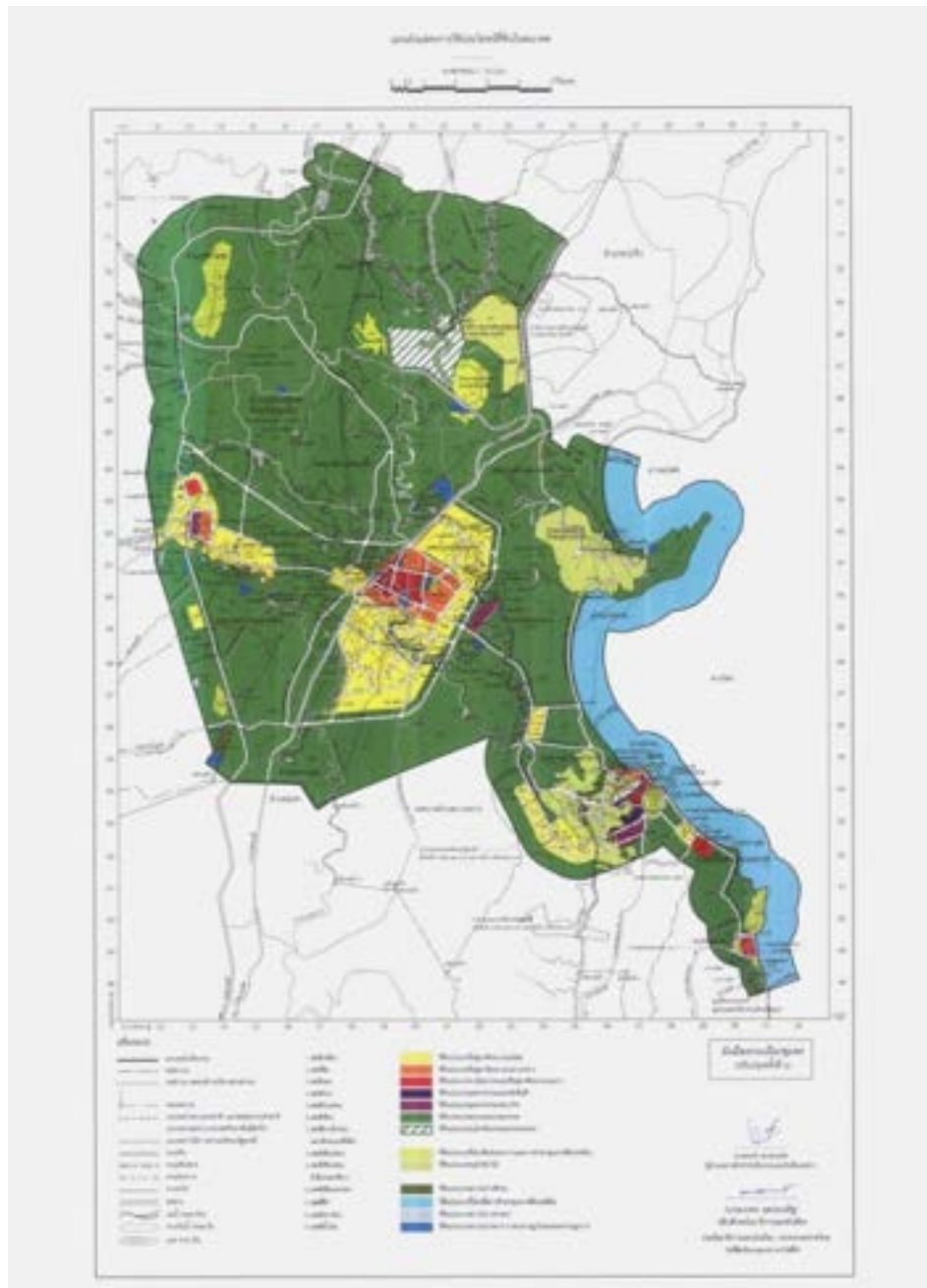


Source: JICA Project Team

**Figure 1.1.5 Changes in Urban Area from 1990 to 2020**

The city of Chumphon started urbanizing 30 years ago. Urbanization has particularly occurred at the intersection of NH4 along highway 327 to Tessaban Mueang Chumphon. Meanwhile, the city has also expanded up to the city hall on the northeast of the city.





Source: Department of Public Works and Town and Country Planning (DPT) Chumchon, 2017

**Figure 1.1.6 Chumchon City Comprehensive Plan**

Comparing to the city's comprehensive plan, the main reason for this expansion is because the land use has been determined as residential areas. Therefore, the city has limited chance to grow in the other directions. As the surrounding area of the Tessaban is determined for agricultural use, the residential and commercial areas have become highly concentrated in the inner city. The high density has caused several issues, such as the limitation of residential areas and traffic congestion in rush hours.

There are several public transport modes to Tessaban Mueang Chumchon, including songteaw, bus, and van, providing rides on routes within the city center and city-to-city services. As Chumchon has a potential access to the beach and famous islands (like Koh Tao), there are the private bus companies and special songteaw serving passengers from

the airport, city center, or bus terminal directly to the beach. Meanwhile, within the city center, there are motorcycle and taxi services which passengers can easily call, and the fares depend on travel distances.

## **5) Urban Management**

Tessaban Mueang Chumphon is well-managed with a strong leadership and vision of the mayor. The Tessaban has various relationships with several partners either public or private sector. Additionally, there is a strong relationship with the communities to drive several projects. There are 43 communities in Tessaban Mueang Chumphon. In each community, a community committee is assigned to bring up the demands and problems of its citizens. The community leader serves as intermediary to coordinate with the Tessaban to solve such issues and to share Tessaban's activities. However, public participation in local election remains in the moderate levels at 61 percent.

### **1.1.3 Future Perspective under Current Trend**

#### **1) Economy and Society**

As mentioned above, the main economy of Tessaban Mueang Chumphon is based on agriculture and tourism. However, there are several opportunities provided through Thailand's national plan, Chumphon's provincial plan, and SEC plan, pointing to a booming agricultural economy which need to be smarter, more innovative, and with added value. Therefore, the city should prepare to enter the ASEAN community especially for trading as there is expected to be a distribution and service center to support both domestic and international trades. To take maximum advantages from these opportunities, it is essential to recognize the value of the surrounding communities, forests, and agricultural lands as critical to the city economy and environmental health and quality of life, and the future of the region.

The current population growth also presented a decline in a line with the increasing trend of aged society. On the one hand, it is necessary for the Tessaban to utilize the economic opportunity to create jobs for youths and workers in the city center. On the other hand, it is necessary to provide social welfare and services for supporting their quality of life. As the elderly people are expected to live longer, it is also crucial to consider how they can be empowered to integrate them into the socio-economic development as active members of the society. To reach maximum benefits, comprehensive measures and plans are required not only to deal with an ageing society but also to attract youths and workers in the city center.

#### **2) Environment and Urbanization**

The high density in the city center causes further serious issues, especially traffic congestion and lack of both residential and commercial space. Regarding people's mobility, even though there are public transport modes, such as minibus or songthaews, most people remain using personal cars. Traffic situation is crowded in the morning and after-school period because there are many educational institutions and government offices within the municipality. Hence, it can be considered that songthaews provide limited routes and services. Public transport should be improved and properly planned in accordance with

citizens' lifestyles and tourists/visitors. This will enhance both the city's economy and the quality of people's life.

Another issue is the urban growth in the suburban area. The trend showed that people are starting to move to outside of the city center. One key reason is that people are looking for inexpensive housing and affordable real estate. While commuting to the CBD will create more congestion, it also causes the risk of the deterioration of the city center. It is therefore essential to consider how to bring people to downtown sustainably.

From the Google Maps image of the Tessaban, the disorderly spread and density of the city have widened into a larger area. This is eating up the agricultural land area. The interrelationship between the inner city and surrounding areas needs to be established to develop the city effectively to protect and conserve its environment. Also, the urbanized area may require extending the coverage of utilities, especially water supply, sewage, and garbage collection.

Since the lack of data results in inadequate/unclear analysis, intelligence system should also make a significant part of planning. For example, there are many people living in the city but there is no data to show the true number of people commuting to the city on a daily basis.

#### **1.1.4 Assessment of Sustainability**

##### **1) Economic Sustainability**

Being an agriculture-based economy, it is important to realize the potential for value adding. This could be pursued by creating a linkage to unique local economies. This venture could stimulate future sustainable growth, particularly when designing products and creating brands entering the global market. Market viability could also include ventures which link to tourism. Such an experience economy thinking, or circular economy, provides a platform that focuses on the quality and totality of supply chain management and service. Consumers are seeking a memorable experience from unique local products or services. Enabling consumers to enjoy activities or to consume local products by increasing the level of authenticity, as well as adding feelings and emotional elements into the products and services.

An example of this kind of venture in the area is Gong coffee: Coffee bean growers are taking part in the supply chain where Gong (the owner of Gong coffee) created an experience for visitors. This kind of value-added experience includes a DIY coffee, coffee tasting, and story of how each bean is grown and sorted locally. Gong coffee is therefore an example demonstrating how value can be added to agricultural products. On site, tourists are invited to learn about coffee beans and experience coffee making. Similar processes could also be invented for other types of produce, for example, durian and coconut.

Sustainable agriculture can be developed in Tessaban Mueang Chumphon because of its geographical advantage. A large agricultural area, green space, and economic vitality based on plentiful produce create a promising future for the Tessaban. It is therefore important for the Tessaban to rethink the linkages between "farm-to-market" and "market-to-farm"

concepts.

To do this, sustainable agriculture can be enhanced by building multigenerational knowhow, food entrepreneurs, favorable climate and water supply, and supportive institutions. With such a valuable competitive advantage as an agricultural producer, Tessaban Mueang Chumphon is uniquely poised to tap into growing profitable specialty crop markets and high-value market hub that most other regions cannot. Food hubs connect locally produced foods directly to markets by creating new market channels between growers and consumers and can help small and midsize growers. The city center consists of retail businesses, restaurants, and street vendors; therefore, thematic food routes or innovative food markets or hubs can induce more visitors. Other future benefits can also include:

- Access larger markets, such as institutional, wholesale, or even export buyers;
- Become more resilient and self-reliant to uncertain market conditions;
- Boost foods to higher premiums through value-added processing; and
- Create jobs while increasing access to fresh, healthy food for local people.

Moreover, demand for local food and local food experience is growing nationwide. Thailand is promoting gastronomy tourism to the international market and all other related foodie experiences are in high demand. Tessaban Mueang Chumphon could be well-positioned to capitalize on the rapidly expanding demand for locally grown food, with strategic proximity to these vast and growing consumer markets.

Healthy agricultural economies complement urban development and future urban economic strategies. These help bind the surrounding areas and regions around linked goals and objectives such as smart growth, resource conservation, enhancement of agriculture and food industries, food access and healthy eating, and recreation.

## **2) Social Sustainability**

Considering the increasing aging of population in Tessaban Mueang Chumphon, an aging society is one of the critical issues which could become more critical and should be further addressed in the future. In addition to the extensive experiences in elderly services of Tessaban Mueang Chumphon, it could plan for the right infrastructure and strategies to keep people of all ages in good health and provide for those who are not. As people live longer with long-term conditions and complex needs, either at home or in aged residential care, Tessaban Mueang Chumphon will increasingly need to support and develop the skills of "looking after yourself" as a more effective preventive health program.

Health is fundamental to be able to live well, age well, and continue to participate in family and community life. Older people make a significant contribution to the society, economically, socially, and intellectually as mentors, leaders, and skilled workers and volunteers. A healthy ageing approach seeks to enable older people to continue to be active, engaged, and enjoying life.

Ageing well is not just about preventing illness and disability but also about maximizing physical and mental health and well-being, independence, and social connectedness as people age. Moving to an active, healthy society is ambitious; starting small could be an

achievable long-term goal for the city.

Remaining in good health, ageing well, and being able and supported to live well with long-term conditions, although complex, is critical to enable elderly people to continue participating and feeling valued (two important factors for health and well-being) in their society. Future cities should be well-equipped with health strategies, i.e., describing the future we want, identifying the cultures and values that underpin this future, and setting out strategic themes for changes.

The following could potentially be considered as components of a healthy aging society:

- Older people are physically, mentally, and socially active and have healthy lifestyles and greater resilience throughout their lives, meaning, they spend more of their lives in good health and living independently.
- Older people are health-smart, able to make informed decisions about their health, and know when and how to get help early. Everyone in the health system and in the wider social sector understands what contributes to healthy ageing and takes part in achieving it.

### **3) Environmental Sustainability**

To sustain its economic growth based on tourism and agriculture, solid waste management is essential for Tessaban Mueang Chumphon and its surrounding areas. The close collaboration between Tessaban Mueang Chumphon and neighboring areas for solid waste management is required to increase the capacity of landfills and to reduce the amount of waste.

Another point is land use and urbanization. The agricultural area should be properly protected and managed through innovative and comprehensive measures. To limit urban growth, affordable housing and commercial space should be provided and managed while land incentives should be given to attract people living in the city center.

Traffic congestion causes social and environmental issues relating to, for example, air quality, community well-being, and public health. To minimize the number of private vehicles and to solve traffic problems, it is not only useful to promote better use of public transport or other means of travel in inner-city areas, such as walking or bicycling. The city landscape and green space should also be developed to enhance walkability in the city center. Sustainable streetscapes play an important role in forming the future visual image of the sustainable city of Chumphon, as it is one of the most important factors to help the city succeed and to attract tourists. At present, Tessaban Mueang Chumphon lacks the visual image of being a sustainable city, which negatively affects the attractiveness of the city. Streetscapes will create a good environment and green space. Accordingly, a good city design will enhance social interaction and the local economy.

#### **1.1.5 Review of Existing Plans**

The LSDP and the Comprehensive Plan for Tessaban Mueang Chumphon were reviewed based on the viewpoints mentioned above.

## 1) Local Strategic Development Plan

Tessaban Mueang Chumphon's vision is "Chumphon the Livable city, Happiness social and Good quality of life'. The strategies comprise eight main components, which are summarized in the table below.

**Table 1.1.2 Summary of Tessaban Mueang Chumphon's Strategies in Local Strategic Development Plan**

Strategy	Development Guideline
1. Infrastructure Development	<ol style="list-style-type: none"> <li>1) Transportation and logistics</li> <li>2) Public utility and public assistance development / integrated water supply management to facilitate the people</li> </ol>
2. Quality of Life Development	<ol style="list-style-type: none"> <li>1) Promote careers for informal workers and unemployed groups to be able to earn income including encourage the elderly, the disabled and the victims to have jobs to be able to live appropriately.</li> <li>2) Promote and develop elderly persons and disabilities are given a living allowance and have a good environment.</li> <li>3) Promote and develop the children, adults and local people focus on Child development center.</li> <li>4) Promote the accommodation with poor, disadvantaged, and impoverished persons.</li> <li>5) Promote and develop public health of people including preventing, suppressing communicable diseases, and maintaining the health of the underprivileged in society.</li> <li>6) Promote and develop the education by focusing on the formal education and non-formal education.</li> <li>7) Develop a variety of sports and music activities; motivate all groups regardless of gender and age.</li> </ol>
3. Social Organization Development and Safety	<ol style="list-style-type: none"> <li>1) Support democratic development in the civil sector and community leaders' capacity building.</li> <li>2) Increase the protection efficiency.</li> <li>3) Keep calm and orderliness in the community.</li> </ol>
4. Plan, Promotion, Commercial Investment and Tourism Development	<ol style="list-style-type: none"> <li>1) Promote investment and creative economy concepts to people in the community, increasing the local products' value and focusing on self-reliance according to the sufficiency economy philosophy.</li> <li>2) Promote agriculture by providing academic knowledge, setting up the farmer group, selling products, and maintaining soil.</li> <li>3) Promote eco-friendly tourism.</li> </ol>
5. Management and conservation of natural resources and the environment Development	<ol style="list-style-type: none"> <li>1) Increase efficiency in promoting and preserving the environment.</li> <li>2) Increase efficiency in solid waste management.</li> </ol>
6. Arts, Culture, Traditions, and Local Wisdom Development	<ol style="list-style-type: none"> <li>1) Promote and restore the local wisdom.</li> <li>2) Conserve the traditions and community identities.</li> </ol>

7. Administration and Political Development	<ol style="list-style-type: none"> <li>1) Develop tools, places, and facilities to provide public services; promote use of new technology in the implementation step.</li> <li>2) Encourage people to participate in the administration of the municipality.</li> <li>3) Develop people according to the moral system and increase work motivation.</li> <li>4) Develop municipal income collection.</li> </ol>
8. Preparation of readiness to enter the ASEAN Community	<ol style="list-style-type: none"> <li>1) Encourage schools in the municipality to accelerate youth development to be able to use foreign languages for communication.</li> <li>2) Encourage the organization of groups to accelerate youth development to be able to use foreign languages for communication.</li> <li>3) Create the standard of international communication channel and update the information.</li> <li>4) Promote public health.</li> <li>5) Organize the garbage collection system and encourage the community to conserve natural resources and environment.</li> </ol>

Source: JICA Project Team

## **2) Comprehensive Plan**

Figure 1.1.6 shows Tessaban Mueang Chumphon's Comprehensive Plan. As the city center is surrounded by agricultural areas, in the next revision, it is planned to determine the incentives to prevent urban expansion and measures to conserve the green space. Meanwhile, the city center needs to promote a compact urban structure in order to minimize the maintenance costs of infrastructure and to maximize its economic opportunities.

## **3) Provincial Strategic Development Plan**

The vision of Chumphon Province is "Chumphon, the city of agriculture and quality tourism, linking the development of two sea sides". This vision has been substantiated in the plan by stating that Chumphon is the gateway to the south; it is a route that connects tourists to both the Andaman coast and the Gulf of Thailand. Travelers traveling to the southern region by cars must pass through Chumphon Province, all of which could be strengthened to attract more people to visit Chumphon Province.

Chumphon also marked itself as rich in agricultural resources. Promoting to enhance the potential of durian in Chumphon has been one of its key strategic focuses, particularly to enhance the standard of organic agriculture. In addition, it also promotes the development of many important economic crops, such as rubber, palm oil, and coffee. These strengths have led to the determination of positioning Chumphon Province as "agricultural development along with quality tourism". The following development issues are outlined in the plan:

- Development Issue 1: Agricultural, tourism, and regional development
- Development Issues 2: Human development, family, community, and society to be stable according to the philosophy of sufficiency economy.
- Development Issues 3: Natural resource management, environment, and energy to be balanced and sustainable.
- Development Issue 4: Enhance the integrated management system and security management for civil development.



## 1.1.6 Sustainable Future City Plan

### 1) Future Vision

The vision of Tessaban Mueang Chumphon is 'Chumphon the Livable city, Happiness social and Good quality of life'.

### 2) Issues to Address

Tessaban Mueang Chumphon has potentials to promote agro-tourism, gastronomy, and cultural and community-based tourism to achieve its vision. To realize the vision and maximize its potentials, the following key issues need to be addressed:

- Business innovation for increasing agricultural values by promoting smart farming (food-processing, preservation, and seasonality management).
- Hub of agricultural distribution.
- Preparation for an active aging society and multigenerational families.
- Wastewater management (treatment and power plant).
- Mobility management (walkability, urbanization, and cityscape) .
- Promotion of city attractions.

### 3) SWOT Analysis of the Vision

**Table 1.1.3 SWOT Analysis for Sustainable Future City Plan**

Strength	Weakness
<p><b>Economy</b></p> <ol style="list-style-type: none"> <li>1. Agriculturally based economy (Durian, Rubbers, Palm, Coffee)</li> <li>2. Large agricultural land based, not only being an economic driver but also providing green space for the city (carbon emission offsetting)</li> <li>3. Community based Tourism (CBT) network and activities</li> <li>4. Diverse tourist attractions in the surrounding area</li> <li>5. High income per household (higher than national average)</li> <li>6. Main supplier for durian and coffee</li> <li>7. High number of workers in agricultural sectors</li> <li>8. Known fresh seafood</li> </ol> <p><b>Social</b></p> <ol style="list-style-type: none"> <li>1. Extensive experiences/initiatives to support elderly and dependent persons (aging society ready)</li> <li>2. Strong tertiary education providers in agriculture and tourism</li> </ol> <p><b>Environment</b></p> <ol style="list-style-type: none"> <li>1. High green area space within central district (Tessaban Mueng)</li> </ol>	<p><b>Economy</b></p> <ol style="list-style-type: none"> <li>1. Lack distribution hub for agricultural products</li> <li>2. Lack an advancement of food processing and food innovation</li> </ol> <p><b>Social</b></p> <ol style="list-style-type: none"> <li>1. Insufficient health care facilities (hospitals) and doctors</li> <li>2. Limited number of tertiary education providers in food related curriculum</li> <li>3. Lack of people network between cities (for example between Chumphon and Ranong)</li> </ol> <p><b>Environment</b></p> <ol style="list-style-type: none"> <li>4. No water treatment system in place</li> </ol> <p><b>Urban planning</b></p> <ol style="list-style-type: none"> <li>1. High population density</li> <li>2. Lack systematic management of people mobility around inner city (Centre Business District-CBD), resulting in traffic congestion during rush hours.</li> <li>3. Lack of events and social activities to create city attractiveness (limited activities to attract tourists/residents to visit centre district)</li> </ol>

	<ol style="list-style-type: none"> <li>4. Lack public transports for travelling route</li> <li>5. People mobility in the city (lack of walking area, bicycle lane)</li> <li>6. Lack unique character</li> <li>7. Lack expertise in sustainable town planning</li> </ol>
<b>Opportunity</b>	<b>Threat (Anticipated Problem)</b>
<b>Economy</b> <ol style="list-style-type: none"> <li>1. Thailand 4.0 is promoting food processing and food innovation</li> <li>2. Growth of smart farming system</li> <li>3. Gastronomy Tourism is in high demand</li> <li>4. Unique food gifts are in need</li> <li>5. Growth of global tourism and regional tourism (for example ASEAN)</li> <li>6. Being part of the Southern Economic Corridor (SEC) development <ul style="list-style-type: none"> <li>-infrastructure upgrading (road, rail, sea and air connectivity)</li> </ul> </li> <li>7. Part of the (55) secondary cities for better tourism dispersal campaign by Tourism Authority of Thailand</li> <li>8. Growing opportunities with Twinning cities- Ranong</li> <li>9. Growth in technology advancement</li> </ol> <b>Social</b> <ol style="list-style-type: none"> <li>1. Increase in health-conscious society</li> </ol> <b>Urban and infrastructure development</b> <ol style="list-style-type: none"> <li>1. Rail connectivity from/to Bangkok and from/to Malaysia</li> </ol>	<b>Economy</b> <ol style="list-style-type: none"> <li>1. Heavily depend on labor intensive in agricultural sector, impediments to innovation</li> <li>2. Growth of organic farming and care for the safe and livelihood of the farmers (no evidence of organic farming movement in place)</li> </ol> <b>Environment</b> <ol style="list-style-type: none"> <li>1. Lack systematic plan for identifying climate risks and climate change adaptation (extreme weather disrupted residents, tourism, and businesses)</li> <li>2. Lack systematic waste management, depending heavily on landfill (power plant is in process)</li> <li>3. City has no water treatment system which could tarnish its reputation as environmentally consciousness is pertinent.</li> </ol>

Source: JICA Project Team

#### 4) Basic Direction

Tessaban Mueang Chumphon has sustainable potentials for related agricultural business innovations which could increase the value of agricultural products with the focus on smart farming (food processing and preservation, seasonality management). This potential could be integrated into the preparedness for an active aging society and multi-generational families which the Tessaban has an extensive experience in and should continue to enhance its social welfare, particularly for children and family well-being. Tessaban Mueang Chumphon also has potential to be a hub for agricultural products, which could lead to the further development of an agro-tourism, gastronomy, and community-based tourism. These potentials could be developed as a basis to further help mitigate critical problems which are related to environmental issues and the betterment of the mobility of people of all ages.

#### 5) SFC Strategy

##### Strategic Direction 1: Create a happy city for people of all ages

This strategic direction constitutes initiatives to enhance the quality of life for all, providing well-being and living conditions for youth and family to grow well, ready for aging care,

medical and welfare services, particularly for healthy living of the elderly to achieve being “independent, connected, and respected”. Building sustainable cities need a mechanism to support and develop the skills of “looking after yourself” as part of the preventive health program to address the issue of insufficient medical services. A healthy-living approach seeks to enable all citizens regardless of their ages to continue to be active, engaged, and enjoying life with all generations. The future city should be well-equipped with a health strategy, describing the citizens’ future needs and wants, identifying the cultures and values that underpin this future, and setting out strategic themes for healthy changes. As part of this focus, advancement in the use and design of public spaces for healthy living should be stimulated, enabling an exchange of preventive health program. Any initiatives could be linked to the city’s existing assets, for example, better agricultural system for sustainable food processing, food design, and innovation for all ages.

- Program 1-1 Center design and development for the well-being of all ages
- Program 1-2 Active aging and multigeneration capacity building program for a sustainable future city
- Program 1-3 Public space design for better recreational experiences and healthy living
- Program 1-4 Security and safety
- Program 1-5 Citizenship and responsible value
- Program 1-6 Health and wellness care and prevention

### **Strategic Direction 2: Smart mobility**

Tessaban Mueang Chumphon will be more people-centric to create better mobility through three lenses: connectedness, sustainability, and friendliness for all ages. Initiatives include enhancement of streetscapes, connected mobility, seamless mass transit, and flexible and integrated experience to benefit travelers based on technology and data management. It is aimed to reduce congestion, enhance better air quality, and reduce energy consumption. The design of space and landscape requires multidisciplinary knowledge and collaboration with several organizations.

- Program 2-1 Intelligent system design and development for efficiency and effectiveness
- Program 2-2 Mode of transportation and sharing road initiatives- design and development

### **Strategic Direction 3: The Center of Agricultural Products and Food Safety**

Tessaban Mueang Chumphon has the potential to concentrate on the development of an integrated distribution hub for agricultural products and the promotion of the site as a new tourist attraction (i.e., cultural farmers market in the city).

Unique brand identity for agricultural products and unique local food gifts could be further innovated. Such a distinct cultural identity will be a good foundation for the development of gastronomy tourism, agro-tourism, and creative tourism. Other potentials included in

this direction are as follows:

- Connect local products and food directly to the market by creating new market channels between growers and consumers and can help small and midsize growers'
- Access larger markets, such as institutional, wholesale, or even export buyers;
- Become more resilient and self-reliant to uncertain market conditions;
- Boost foods to higher premiums through value-added processing; and
- Create jobs while increasing access to fresh, healthy food for local people.

The programs under this strategy are:

- Program 3-1 Center design and development for agricultural products and food safety
- Program 3-2 Marketing communication for local products and assets
- Program 3-3 Responsible and tech business development

#### **Strategic Direction 4: Gateway of the Southern Corridor and a Must-visit Destination**

Tessaban Mueang Chumphon being a gateway of the south and a base for regional connectivity could enhance its competitiveness in both trade and tourism. Tessaban Mueang Chumphon is situated in a strategic location being part of the SEC in the southern part of Thailand. Being such an important gateway, it is generally acknowledged that Chumphon serves as the point of entry, or gateway, for trade logistics and tourists into the region. However, there are several aspects which could be enhanced and transformed itself from a "gateway" to be a "gateway destination" or "business hub". Tessaban Mueang Chumphon needs to enhance its urban (city) experiences as related to strategic direction 2 and 3. As a gateway destination it needs centers of accommodation and bases for excursions to rural areas and/or to other attractions, in addition to developing itself to be a destination in its own right. Hence, cities have their own challenges to address people's mobility, not only within their boundaries, but also with regard to visitors en-route to other destinations. The extent to which places can establish themselves as something greater than a gateway – that is, as destinations in their own right – will depend on their ability to provide trade facilities and attractions that will appeal to the connecting traffic to stop for a few hours or even to spend some nights for many possible business-related activities. For example, many cities that have traditionally acted as gateways are recognizing the potential to increase their earnings from both business visitors and leisure visitors by enhancing their services in financial system, MICE (meeting, incentive, convention, and exhibition) image, and taking advantage of increasing visitor interest in urban experiences. The development of strategic direction 2 and 3 will provide a grounding principle for this to happen.

- Program 4-1 Trade and investment
- Program 4-2 Tourism competitiveness development

#### **Strategic Direction 5: Integrated Eco-system with Smart Data and Planning**

Environmental data and intelligence system play a significant part of planning. This strategic direction focuses on how to measure the city's eco-system sustainably. Tessaban

Mueang Chumphon is facing critical threats if it does not meet basic environmental management, such as water management (wastewater and drainage issues) and waste management. Environmental issues should be measured with better data to manage water consumption, waste, and energy. Baseline data on wastewater and water consumption could be used to find solutions for wastewater management and provide a springboard to uplift the development of other related indicators for climate mitigation. These include 3Rs program for waste management, water, and energy consumption.

- Program 5-1 Climate change adaptation and climate resilience
- Program 5-2 Waste management
- Program 5-3 Water management
- Program 5-4 Integrated green city development

#### **6) SFC Plan**

Table 1.1.4 to Table 1.1.8 show the details of projects in the Sustainable Future City (SFC) Plan with description, implementation agencies, relevant agencies, timeframe, and estimated budget.

Table 1.1.4 SFC Programs and Projects under Strategic Direction 1

Strategic Direction 1: Create a happy city for people of all ages						
Project Name	Objective	Brief description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
<b>Program 1-1 Center design and development for the well-being of all ages</b>						
1	To promote the quality of life for people of all ages and provide shelter for people of different ages who encounter problems	Build a shelter and a place to do activities for people of all ages who experience various problems. To be able to continue to be a part of social power in the community	- Tassaban Mueang Chumphon - Provincial Social Development and Human Security Office	- Provincial Administrative Organization (PAO)	2021-2030	300
2	To develop a place as a shelter for underprivileged children, abandoned children and children with family problems	Create a residence to educate and heal the physical and mental conditions of abandoned children, children with family problems and children requiring shelter due to various problems	- Tassaban Mueang Chumphon - Provincial Social Development and Human Security Office	- PAO	2022-2027	200
3	Project Establishment of the Center for the Development and Rehabilitation of the Quality of Life of the Elderly (Continuous Project)	To provide physical rehabilitation services for the elderly and the disabled	- Tassaban Mueang Chumphon	- Tassaban Mueang Chumphon	2020-2030	100
<b>Program 1-2 Active aging and multigenerational capacity building program for the sustainable future city</b>						
4	Elderly job creation project	To provide more opportunities for the elderly to work and create a quality aging society	- Tassaban Mueang Chumphon - Office of Skill Development	- Provincial Social Development and Human Security Office - PAO - Provincial Community Development Office (PCD)	2021-2023	5

Strategic Direction 1: Create a happy city for people of all ages						
Project Name	Objective	Brief description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
5 Elderly Project	<ul style="list-style-type: none"> <li>- For the elderly to have activities that are beneficial to society and make oneself valuable, step into the elderly with potential</li> <li>- To create a quality aging society</li> </ul>	Organize activities that are appropriate for the elderly who want to work voluntarily and are suitable for the knowledge and skills of the elderly by creating a network of the elderly in and outside the area	<ul style="list-style-type: none"> <li>- Tassaban Mueang Chumphon</li> <li>- Provincial Labor</li> </ul>	<ul style="list-style-type: none"> <li>- Provincial Social Development and Human Security Office</li> <li>- PAO</li> <li>- Provincial Health Office</li> </ul>	2021-2027	7
6 Aging University, specializing in educating elderly	To provide education and suitable courses for the elderly who want to learn more in various fields	Create curricula and prepare locations and lecturers in various subjects suitable for the elderly to study at no cost or with the least expense	<ul style="list-style-type: none"> <li>- Education Institutions</li> <li>- Tassaban Mueang Chumphon</li> </ul>	<ul style="list-style-type: none"> <li>- PAO</li> <li>- King Mongkut's Institute of Technology Ladkrabang (KMITL)</li> <li>- Provincial Health Office</li> </ul>	2023-2030	10
7 3 generation university project (a training program or curriculum for all 3 generations to share the classroom)	<ul style="list-style-type: none"> <li>- To enhance the learning of people of different ages</li> <li>- To provide new academic education for people of all ages</li> <li>- To transfer knowledge, ways of thinking, and experience of one age to another through collaborative learning</li> </ul>	Create courses, arrange locations and teachers in various fields. That people of all ages can come to study By allowing people of all ages to have the opportunity to share experiences and ideas with each other	<ul style="list-style-type: none"> <li>- Education Institutions</li> <li>- Tassaban Mueang Chumphon</li> </ul>	<ul style="list-style-type: none"> <li>- Office of the Basic Education Commission (OBEC)</li> <li>- Office of Secondary Education Service Areas (SorBorNor.)</li> <li>- KMITL</li> <li>- Maejo University, Chumphon Campus</li> <li>- National Sports University</li> <li>- Vocational College</li> <li>- Vocational</li> </ul>	2023-2030	20

Strategic Direction 1: Create a happy city for people of all ages						
Project Name	Objective	Brief description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
<b>Program 1-3 Public Space design for better recreational experiences and healthy living</b>						
8	Public Space: experiential design and development project	To enhance the quality of life by creating a space for exchange of ideas and create recreational activities for people in the area and visitors	- Tessaban Mueang Chumphon	- Tessaban Mueang Chumphon	2021-2023	10
9	Parks and Sports Facilities improvement project	- To promote good health and well-being for people of all ages - To add green areas to the city	- Tessaban Mueang Chumphon	- Tessaban Mueang Chumphon	2021-2023	40
10	Civilized Architecture Project (universal design for all ages)	To design and construct for various areas and buildings suitable for people of all ages and every physical condition	- Tessaban Mueang Chumphon	- Tessaban Mueang Chumphon	2021-2030	30
<b>Program 1-4 Security and Safety</b>						
11	Drug Prevention Project	To reduce and eliminate drug problems in society	- Tessaban Mueang Chumphon - Police	- Provincial Police - Provincial Health Office - PAO - OBEC	2021	8



Strategic Direction 1: Create a happy city for people of all ages						
Project Name	Objective	Brief description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
12	Crime Prevention Project	<ul style="list-style-type: none"> <li>- Build a drug-free community</li> <li>- Organize activities to build cooperation among people in the community for crime prevention.</li> <li>- Design and build physical in various areas that are at risk of criminal activity to be a safer area.</li> </ul>	<ul style="list-style-type: none"> <li>- Tessaban Mueang Chumphon</li> <li>- Police</li> </ul>	<ul style="list-style-type: none"> <li>- Office of Secondary Education Service Areas (SorBorNor.)</li> <li>- Office of the Narcotics Control Board</li> <li>- OBEC</li> <li>- Office of Secondary Education Service Areas (SorBorNor.)</li> <li>- Vocational institution</li> <li>- University</li> <li>- Local Administrative Organization (LAO)</li> </ul>	2021	8
Program 1-5 Citizenship and responsible value						
13	Thai Culture and Value: Discipline Project	<ul style="list-style-type: none"> <li>- To create a society that is aware of Thai values and ways of life</li> <li>- To create a society for discipline, generous and considerate</li> </ul>	<ul style="list-style-type: none"> <li>- Tessaban Mueang Chumphon</li> <li>- Schools</li> <li>- University</li> </ul>	<ul style="list-style-type: none"> <li>- Provincial Cultural Office</li> <li>- OBEC</li> <li>- Office of Secondary Education Service Areas</li> <li>- Vocational Institution</li> <li>- KMITL</li> <li>- National Sports University</li> <li>- Maejo</li> </ul>	2021	9

**Final Report, Vol. 2: Model City Projects**

Strategic Direction 1: Create a happy city for people of all ages						
Project Name	Objective	Brief description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
14	Development of Hospital and Healthcare project	To expand medical services and facilities to meet local needs and to promote health and well-being	Develop and expand the capacity of hospitals and public health systems to be efficient and sufficient for the needs of the people.	<ul style="list-style-type: none"> <li>- Provincial Office</li> <li>- Public &amp; Private Network</li> </ul>	<ul style="list-style-type: none"> <li>- Provincial Health Office</li> <li>- Local hospital</li> <li>- Buddhist Hospital</li> <li>- OBEC</li> <li>- Office of Secondary Education Service Areas (SorBorNor.)</li> <li>- Vocational institution</li> </ul>	200
<b>Program 1-6 Health and wellness Care and Prevention</b>						

Remark: Agencies/Organizations and budget mentioned here are tentative.

Source: JICA Project Team

**Table 1.1.5 SFC Programs and Projects under Strategic Direction 2**

Strategic Direction 2: Smart mobility						
Project Name	Objective	Brief description	Implementing Agency*	Relevant Agency*	Timeframe	Budget* (mil. baht)
<b>Program 2-1 Intelligent system design and development for efficiency and effectiveness</b>						
1	<ul style="list-style-type: none"> <li>- To create traffic flow</li> <li>- To ease the burden of traffic police in rush hour</li> <li>- To allow traveling in the city to be more definite</li> </ul> To secure safety for pedestrians and cyclists	Provide a system for managing the flow of people and cars in the city by an automatic calculation system	<ul style="list-style-type: none"> <li>- Tessaban Mueang Chumphon</li> <li>- Police</li> </ul>	<ul style="list-style-type: none"> <li>- Provincial Police</li> <li>- Provincial Transport Office</li> <li>- Ministry of Digital Economy and Society</li> <li>- Office of Digital Economy Promotion Agency (DEPA)</li> </ul>	2021-2024	80
2	To create intelligent and efficient real time travel systems for users	Provide applications that make traveling within the city convenient and systematic easy to use of all ages	<ul style="list-style-type: none"> <li>- Tessaban Mueang Chumphon</li> </ul>	<ul style="list-style-type: none"> <li>- Provincial Transport Office</li> <li>- TOT Public Company Limited (TOT)</li> <li>- CAT Telecom Public Company Limited (CAT)</li> <li>- DEPA</li> </ul>	2023-2024	40
3	<ul style="list-style-type: none"> <li>- To solve traffic problems and systematically manage the urban transport structure</li> <li>- To reduce the use of private cars and create an eco-friendly travel style</li> </ul>	<ul style="list-style-type: none"> <li>- Study the model of public transport management that is appropriate for the city.</li> <li>- Procure operator</li> <li>- Create management guidelines and install an efficient management and display system.</li> </ul>	<ul style="list-style-type: none"> <li>- Tessaban Mueang Chumphon</li> <li>- Provincial Office</li> <li>- Public &amp; Private Network</li> </ul>	<ul style="list-style-type: none"> <li>- Provincial Transport Office</li> <li>- Private company responsible for operation</li> <li>- State Railway of Thailand (SRT)</li> </ul>	2021-2024	50
<b>Program 2-2 Mode of transportation and sharing road initiatives- design and development</b>						
4	To encourage people to comply with traffic	Organize activities to encourage people to strictly	<ul style="list-style-type: none"> <li>- Tessaban Mueang</li> </ul>	<ul style="list-style-type: none"> <li>- Provincial police</li> <li>- Schools</li> </ul>	2020	10

Strategic Direction 2: Smart mobility						
Project Name	Objective	Brief description	Implementing Agency*	Relevant Agency*	Timeframe	Budget* (mil. baht)
Chumphon	discipline of road safety	follow traffic regulations and establish a traffic discipline area	Chumphon - Police	- OBEC - Office of Secondary Education Service Areas (SorBorNor.) - Community leaders		
5 Inner City Project	- To build a pleasant and environmentally friendly city - To Create activities that can be a model for other cities to solve traffic problems sustainably To build the city that reduce the use of cars to be able to create other activities in the inner-city area.	- Determine the area in the inner city as a personal car-free area except for emergency vehicles Create a planning guideline for a car-free inner-city area and systematically manage the flow of people to the inner-city areas initiated the creation of a car-free day activity to be a city event with local leaders and high-level officials acting as examples	- Tessaban Mueang Chumphon - Police	- Tessaban Mueang Chumphon	2021-2022	10
6 Walkable city and streetscape design and improvement	- To build a pleasant and environmentally friendly city - To create beautiful, memorable, and useful streetscape and conditions for people of all ages To strengthen economic distribution patterns and urban activities	- Study guidelines and design a city that is suitable for walking. - Improve, install, and construct pathway to be more beautiful and suitable for pedestrians for all ages. Encourage people to walk in the city and do various activities in the urban area by walking	- Tessaban Mueang Chumphon	- Tessaban Mueang Chumphon	2021-2030	50
7 Pedestrians Project	To secure pedestrian safety, make the roads easy to walk, and	- Promote traffic discipline to keep pedestrians in mind for safe walking in the city.	- Tessaban Mueang Chumphon	- Tessaban Mueang Chumphon	2021-2022	20

Strategic Direction 2: Smart mobility						
Project Name	Objective	Brief description	Implementing Agency*	Relevant Agency*	Timeframe	Budget* (mil. baht)
8	Promote the use of bicycles in everyday life project	encourage people to obey traffic rules  To create well-being and good health, and in environmentally friendly manner, reduce traffic congestion and the budget for solving traffic problems or creating projects for cars	<ul style="list-style-type: none"> <li>- Police</li> <li>- Tassaban Mueang Chumphon</li> </ul>	<ul style="list-style-type: none"> <li>- OBEC</li> <li>- Office of Secondary Education Service Areas (SorBorNor.)</li> <li>- Provincial Health Office</li> <li>- Related government agencies</li> </ul>	2021-2022	20

Remark: Agencies/Organizations and budget mentioned here are tentative.

Source: JICA Project Team

Table 1.1.6 SFC Programs and Projects under Strategic Direction 3

Strategic Direction 3: Center of Agricultural Products and food safety						
Project Name	Objectives	Brief Description	Implementing Agency*	Relevant Agency*	Timeframe	Budget* (mil. baht)
<b>Program 3-1 Center design and development for agricultural products and food safety</b>						
1	Distribution Project Center To make the city of Chumphon a center for agricultural products that are quality and safe. To be a distribution point for local farmers and attract tourists to the city	Establish and manage a quality and safe agricultural distribution center. For local agriculture to have exhibits and sell products and is a place to promote agricultural products in the local area and the surrounding area	- Tessaban Mueang Chumphon - Pracharat Rak Samakkee Company Limited	- Provincial transport - Provincial Agricultural Extension Office - PCD - Provincial Chamber of Commerce	2021-2024	100
2	Creating smart information system of products supply and demand management To promote integrated management of the chain system and ecosystem of agricultural activities	Develop and create intelligent tools for managing information in the chain system and ecological system of agricultural activities.	- Tessaban Mueang Chumphon - Provincial Agricultural Extension Office	- Provincial Statistical Office - Provincial Agriculture and Cooperatives Office - National Agricultural Council - Tourism Industry Council - Maejo University, Chumphon Campus - KMITL	2021-2024	80
3	Farmers' Markets and sustainable lifestyle center (linking urban to rural) To connect urban and rural areas, promote tourism, create a society of coexistence, and learn about the well-being of people in various areas, as well as promoting	Establish green market center, integrating great products, local food and local art and craft, regularly organize activities connecting urban and rural areas, promoting tourism, creating a society of	- Tessaban Mueang Chumphon	- Provincial Agricultural Extension Office - LAO - Provincial Agriculture and Cooperatives	2021-2022	50

Strategic Direction 3: Center of Agricultural Products and food safety						
Project Name	Objectives	Brief Description	Implementing Agency*	Relevant Agency*	Timeframe	Budget* (mil. baht)
4	Safe, tasty, and good food center in Chumphon	economic activities  To promote Chumphon to be a delicious, safe, non-toxic food city	coexistence, and learning for the well-being of people in various areas, as well as promoting economic activities by agricultural markets at the location or address of farmer  Establish a safe and delicious food center for both tourists and locals, and provide food-related activities to promote the economy and well-being of the people and to speed up the promotion of Chumphon as a delicious food city for health and sanitation, safe and non-toxic	- Tessaban Mueang Chumphon - Provincial Health Office  Office  - Provincial Agricultural Extension Office - Tessaban Mueang Chumphon - PCD	2021-2022	40
5	Community Economic Road Project (*Street Food Souvenir)	To promote a sustainable economic system of the community by using the city area wisely in accordance with the productivity of the city and the surrounding area  To stimulate economy and promote community products to enter the international market	Organize economic road activities in urban areas to attract tourists and display products from various communities.  Manage to create high quality standardized agricultural products in Chumphon Province to market and create recognition that they are high quality products	- Tessaban Mueang Chumphon  - Tessaban Mueang Chumphon  - Provincial Commerce Office - Provincial Industrial Office - Provincial Health Office - Tourism Industry Council - Provincial Chamber of Commerce	2021-2027	40
6	Premium food gift from Chumphon				2022-2024	60

Strategic Direction 3: Center of Agricultural Products and food safety						
Project Name	Objectives	Brief Description	Implementing Agency*	Relevant Agency*	Timeframe	Budget* (mil. baht)
<b>Program 3-2 Marketing communication for local products and assets</b>						
7	To promote urban economic activities in terms of food and seasonal agricultural produce	Conduct economic promotion activities for cities in relation to food and famous agricultural produce according to season	- Tassaban Mueang Chumphon - Tourism Industry Council - TAT	- Provincial Agricultural Extension Office - Provincial Commerce Office - Provincial Chamber of Commerce - Restaurant Operator Club	2021-2022	40
8	To create a new image of the products and brands of the city through the exhibition of the movies of students and the general public. Promote food tourism in the city	Organize a contest for food movies in Chumphon, by allowing students or individuals to submit their works and release them at an art festival or festival related to food and movies.	- Provincial Office - Public & Private Network - Chamber of Commerce - TAT - Communities	- TAT - Tassaban Mueang Chumphon - Provincial Public Relations Office - Provincial Chamber of Commerce - Restaurant Operator Club - Vocational college - Technology College - Maejo University, Chumphon Campus - KMITL	2022-2023	40
9	Organic exhibition and award	Organize awards and markings for organic products in the province and establish	- Tassaban Mueang Chumphon - TAT	- Provincial Agriculture and Cooperatives	2022-2023	40



Strategic Direction 3: Center of Agricultural Products and food safety						
Project Name	Objectives	Brief Description	Implementing Agency*	Relevant Agency*	Timeframe	Budget* (mil. baht)
	products and promote organic agricultural products	standards for award-winning products		Office - Provincial Agricultural Extension Office - Maejo University, Chumphon Campus - KMITL		
10	To stimulate awareness about food knowledge for young people and people in society	Organize activities to stimulate awareness about food knowledge for young people and people in the society so that the new generation or the general public will have good culinary skills and health benefits	- Tessaban Mueang Chumphon	- Provincial Health Office - Provincial Social Development and Human Security Office - Provincial Education Office - Vocational college - Technology College - Maejo University, Chumphon Campus - KMITL	2021-2022	20
11	To promote sales and access to goods from general and international people	Create a space in social media that supports marketing activities and create a platform for product owners to bring their agricultural products to market with an intermediary system	- Tessaban Mueang Chumphon - Provincial Commerce Office	- Provincial Statistical Office - Vocational college - Technology College - Maejo University, Chumphon	2022-2024	75

Strategic Direction 3: Center of Agricultural Products and food safety						
Project Name	Objectives	Brief Description	Implementing Agency*	Relevant Agency*	Timeframe	Budget* (mil. baht)
12	Viral Marketing - 24/7 of Best Culinary Hot Spots in Chumphon	To promote marketing activities for tourism, food in Chumphon	<ul style="list-style-type: none"> <li>- Tessaban Mueang Chumphon</li> </ul>	<ul style="list-style-type: none"> <li>- Campus - KMITL</li> <li>- Provincial Tourism and Sports Office</li> <li>- TAT</li> <li>- Tessaban Mueang Chumphon</li> </ul>	2022-2023	10
<b>Program 3-3 Responsible and Tech Business Development</b>						
13	Smart Farming and AgTech (Agriculture Technology) Startup Promotion	To promote start-up entrepreneurs regarding smart agriculture and let local farmers try out the system before releasing it to the market	<ul style="list-style-type: none"> <li>- Tessaban Mueang Chumphon</li> <li>- Ministry of Digital Economy and Society (MDES)</li> <li>- DEPA</li> </ul>	<ul style="list-style-type: none"> <li>- Provincial Industrial Office</li> <li>- Provincial Commerce Office</li> <li>- Provincial Agricultural Extension Office</li> <li>- Provincial Agriculture and Cooperatives Office</li> <li>- Provincial Chamber of Commerce</li> </ul>	2021-2023	30
14	Sustainable Consumption and Production	To seek support from Department of Environmental Quality Promotion (DEQP), the "SCP Policy Project – Thailand" to organize information campaigns on Sustainable Consumption and Production	<ul style="list-style-type: none"> <li>- Tessaban Mueang Chumphon</li> </ul>		2021	6

Strategic Direction 3: Center of Agricultural Products and food safety						
Project Name	Objectives	Brief Description	Implementing Agency*	Relevant Agency*	Timeframe	Budget* (mil. baht)
		recommendations are made for developing SCP policies and improving the institutional framework for the future implementation of SCP				

Remark: Agencies/Organizations and budget mentioned here are tentative.

Source: JICA Project Team

Table 1.1.7 SFC Programs and Projects under Strategic Direction 4

Strategic Direction 4: Gateway of the Southern Corridor and a must visit destination						
Project Name	Objectives	Brief Description	Implementing Agency*	Relevant Agency*	Timeframe	Budget* (mil. baht)
<b>Program 4-1 Trade and Investment</b>						
1	<ul style="list-style-type: none"> <li>- To promote various types of businesses and attract new entrepreneurs to the area</li> <li>To create economic innovations in urban areas</li> </ul>	<p>Organize activities to promote various types of business groups that are appropriate for the city and attract new entrepreneurs to the area to create tools and economic innovations in the urban areas</p>	<ul style="list-style-type: none"> <li>- Provincial Office</li> <li>- Public &amp; Private Network</li> <li>- Chamber of Commerce</li> <li>- TAT</li> <li>- Communities</li> </ul>	<ul style="list-style-type: none"> <li>- Provincial Commerce Office</li> <li>- Provincial Industrial Office</li> <li>- Provincial Chamber of Commerce</li> <li>- Bank association</li> <li>- SME Bank</li> <li>- Provincial Agriculture and Cooperatives Office</li> <li>- MDES</li> <li>- DEPA</li> </ul>	2022-2023	40
2	<ul style="list-style-type: none"> <li>To promote investment and create meeting activities in urban areas to stimulate the local economy</li> </ul>	<p>Create large-scale symposium events in urban areas to stimulate the local economy and attract investors in various fields suitable for the city</p>	<ul style="list-style-type: none"> <li>- Provincial Office</li> <li>- Public &amp; Private Network</li> <li>- Chamber of Commerce</li> <li>- TAT</li> <li>- Communities</li> </ul>	<ul style="list-style-type: none"> <li>- Provincial Chamber of Commerce</li> <li>- Provincial Office</li> <li>- Provincial Commerce Office</li> <li>- Provincial Treasury Office</li> <li>- Provincial Industrial Office</li> <li>- PAO</li> </ul>	2022-2023	40
<b>Program 4-2 Tourism Competitiveness development</b>						
3	<ul style="list-style-type: none"> <li>To make traveling to Chumphon and nearby</li> </ul>	<p>Establish and manage the travel network connected to the</p>	<ul style="list-style-type: none"> <li>- Provincial Office</li> <li>- Public &amp; Private</li> </ul>	<ul style="list-style-type: none"> <li>- TAT</li> <li>- Provincial</li> </ul>	2021-2023	30

Strategic Direction 4: Gateway of the Southern Corridor and a must visit destination						
Project Name	Objectives	Brief Description	Implementing Agency*	Relevant Agency*	Timeframe	Budget* (mil. baht)
Chumphon	areas that are tourist spots convenient and easy via a developing rail system connected to the city's transportation system.	Chumphon railway station	Network of Chamber Commerce - TAT - Communities - SRT	Tourism and Sports Office - LAO - PCD - Community - Provincial Transport Office - PAO - Private business sector		
4 City Landmarks and Activities Creation Project	To make Chumphon as a tourist destination	Create the identity different from other cities together with creating other activities that attract visitors to make Chumphon as a tourism destination by setting a target number of nights that visitors must visit	- Tessaban Mueang Chumphon	- Tessaban Mueang Chumphon	2021-2022	20

Remark: Agencies/Organizations and budget mentioned here are tentative.

Source: JICA Project Team

Table 1.1.8 SFC Programs and Projects under Strategic Direction 5

Strategic Direction 5: Integrated Eco-system management with Smart Data and Planning							
Project Name	Objectives	Brief Description	Implementing Agency*	Relevant Agency*	Timeframe	Budget* (mil. baht)	
<b>Program 5-1 Climate change adaptation and climate resilience</b>							
1	Climate change adaptation program	To adapt the people of the city and the activities in the city in accordance with the climate change	Create activities to reduce global warming and activities to adjust living conditions, use of buildings and places to deal with climate change problems	- Tessaban Mueang Chumphon	- Tessaban Mueang Chumphon - Provincial Natural Resources and Environment Office - Meteorological Department - PAO	2021-2027	30
<b>Program 5-2 Waste management</b>							
2	Smart Management Project (wastewater, 3R, food waste sustainable practices)	To manage the environment sustainably and efficiently	Establish systematic waste management projects related to reuse/reduction/recycling of waste for people in cities and outer areas	- Tessaban Mueang Chumphon	- Tessaban Mueang Chumphon	2021-2030	20
3	Transform waste into electricity (Waste power plant)	To manage the city's solid waste disposal	Study the feasibility of constructing and managing a waste power plant to efficiently dispose waste in urban and surrounding areas, destroy the environment to a minimum, and not cause pollution to the communities where the waste disposal plant is located. Procure waste power plant operators	- Tessaban Mueang Chumphon	- Tessaban Mueang Chumphon - LAO - Provincial Natural Resources and Environment Office - Provincial Industrial Office - Provincial Electricity Authority	2020-2022	30

Strategic Direction 5: Integrated Eco-system management with Smart Data and Planning						
Project Name	Objectives	Brief Description	Implementing Agency*	Relevant Agency*	Timeframe	Budget* (mil. baht)
<b>Program 5-3 Water management</b>						
4	Intelligent water management project To manage water and systematically sustainable	Provide intelligent water management and wastewater management and sustainable management project	- Provincial Office - Public & Private Network	- Tessaban Mueang Chumphon - Royal Irrigation Department - Provincial Natural Resources and Environment Office - Provincial Waterworks Authority - Department of Public Works and Town and Country Planning (DPT) - PAO	2021-2030	50
<b>Program 5-4 Integrated green city development</b>						
5	Green City Project To build a livable and environmentally friendly city, and reduce toxic carbon	Create a project to encourage people in the city to plant trees, increase green space, live life friendly and reduce environmental damage.	- Tessaban Mueang Chumphon	- Tessaban Mueang Chumphon	2021-2030	50
6	Energy saving project To build an energy-saving, environmentally friendly city	Organize activities that encourage people in the city to create energy-saving and eco-friendly cities by creating a model of energy-saving communities in urban areas	- Tessaban Mueang Chumphon	- Tessaban Mueang Chumphon - Provincial Natural Resources and Environment	2021-2024	20

Strategic Direction 5: Integrated Eco-system management with Smart Data and Planning						
Project Name	Objectives	Brief Description	Implementing Agency*	Relevant Agency*	Timeframe	Budget* (mil. baht)
7	Project to promote the use of natural containers among entrepreneurs, businesses, consumers and the public	<ul style="list-style-type: none"> <li>- Organize activities to encourage people to use devices and containers that are made from natural or biodegradable</li> <li>- Designate areas or buildings as free of plastic or disposable equipment that are toxic to the environment</li> </ul>	<ul style="list-style-type: none"> <li>- Tessaban Mueang Chumphon</li> </ul>	<ul style="list-style-type: none"> <li>- Office</li> <li>- Restaurant Operator Club</li> <li>- Provincial Energy Office</li> <li>- Provincial Electricity Authority</li> <li>- KMITL</li> <li>- PAO</li> <li>- Tessaban Mueang Chumphon</li> </ul>	2021-2023	30
8	Green street and green space development (micro-climate project)	To build a livable and environmentally friendly city, reduce toxic carbon and energy, and create shade and beauty for the city	<ul style="list-style-type: none"> <li>- Tessaban Mueang Chumphon</li> </ul>	<ul style="list-style-type: none"> <li>- Tessaban Mueang Chumphon</li> </ul>	2021-2023	45
9	Non-toxic Chumphon Project	To build a city that is healthy and environmentally friendly	<ul style="list-style-type: none"> <li>- Tessaban Mueang Chumphon</li> <li>- Provincial Natural Resources and Environment Office</li> </ul>	<ul style="list-style-type: none"> <li>- Provincial Agricultural Extension Office</li> <li>- PCD</li> <li>- Provincial Chamber of Commerce</li> <li>- Provincial</li> </ul>	2021-2030	50

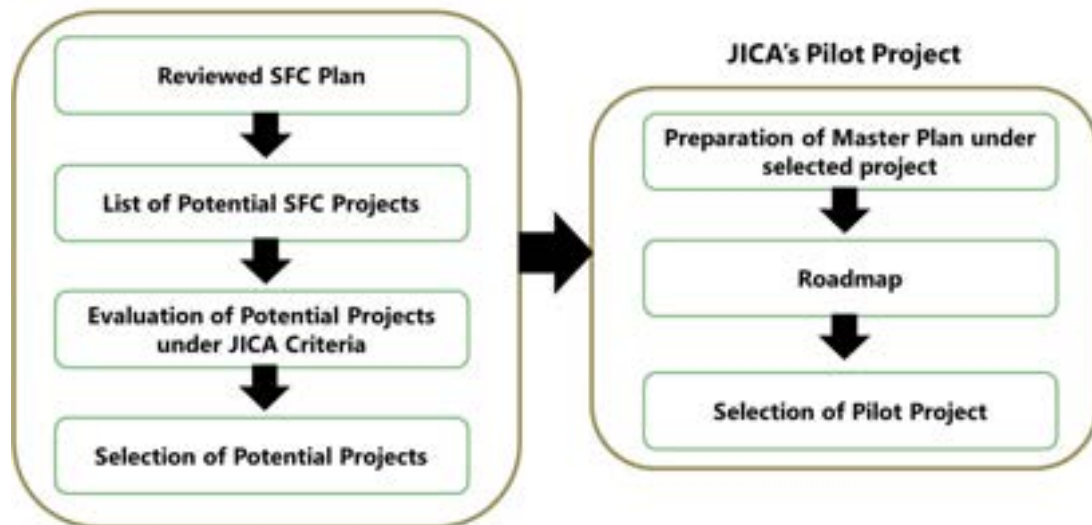


Strategic Direction 5: Integrated Eco-system management with Smart Data and Planning						
Project Name	Objectives	Brief Description	Implementing Agency*	Relevant Agency*	Timeframe	Budget* (mil. baht)
				Commerce Office - Provincial Health Office Southwest District - PAO		

Remark: Agencies/Organizations and budget mentioned here are tentative.

Source: JICA Project Team

## 1.2 Project Implementation Support



Source: JICA Project Team

**Figure 1.2.1 Project Prioritization Process**

Figure 1.2.1 shows the process of project prioritization to prepare the action plan for the pilot project. Firstly, the SFC Plan was reviewed by Planning Team (PT) members to select a list of potential SFC projects. After the PT's consideration, the list of potential projects was elaborated in detail and rediscussed according to JICA's criteria. After the evaluation of potential SFC projects, one project was selected and developed into the master plan and the roadmap. Then, the master plan was reviewed and evaluated by PT members to select the pilot project for the concrete construction as a tangible output.

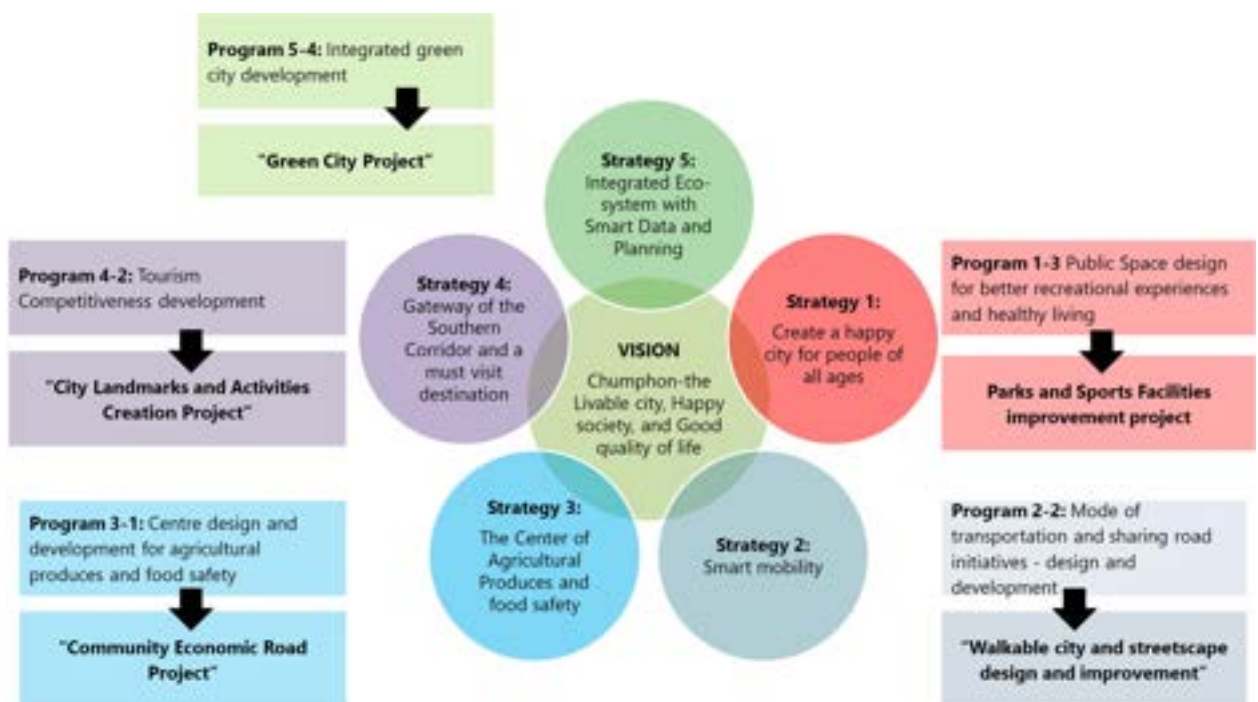
### 1.2.1 List of Potential SFC Projects

In order to implement the SFC Plan in line with the Tessaban's direction, the plan was firstly reviewed by Tessaban's key members, including mayor, clerk, and director of strategic and budget division. The Tessaban considered that one project from each strategy should be selected as a candidate project. Since the key focus of the Tessaban is to promote the quality of people's life by enhancing local economy and promoting good environment, the Tessaban has proposed this intention to PT members as a basic concern for PT's consideration.

Besides this, the capacity (budget and/or personnel) to promote further development, current situations of Chumphon (being a gateway), and project timeframe of Sustainable Future City Initiative (SFCI) model city project were also considered to initially prioritize the potential SFC projects. In terms of capacity, it considers not only the Tessaban but also the capacity of other organizations to support the project in the future. As Chumphon is a gateway, the project should relatively support the tourism development in the city. To do this, it was necessary to prioritize the project that contributes to the image of the city; like landmark which can potentially generate incomes for locals from tourism while enhancing the quality of life by improving its environment. Hence, the potential projects should be able to support various aspects, such as economy, environment, and society, while the outcomes can be concretely impacted and easily recognized within a short time.

As a result, PT members proposed five (5) candidate projects, i.e., one project from each strategy as a preliminary selection. The selected potential projects are listed below and shown in Figure 1.2.2.

- Parks and Sports Facilities Improvement Project under Program 1.3;
- Walkable City and Streetscape Design and Improvement under Program 2.2;
- Community Economic Road Project under Program 3.1;
- City Landmarks and Activities Creation Project under Program 4.2; and
- Green City Project under Program 5.4.



Source: JICA Project Team

**Figure 1.2.2 Preliminary Selection of Potential SFC Projects**

The details of these projects were elaborated into project descriptions, timeframes, and estimated budgets for further selection as shown in Table 1.2.1 to Table 1.2.5. The components of each potential project are summarized below.

**1) Program 1-3: Public Space Design for Better Recreational Experiences and Healthy Living**

The “Parks and Sports Facilities Improvement Project” was selected as a potential project of the prioritized program 1-3: Public spaces design for better recreational experiences and healthy living. Within Tassaban area, there are a number of available public spaces including riverfront (canal), areas around railway stations, empty spaces, parks, and sports facilities. These existing public spaces could be re-designed and enhanced to ensure that the vision of being a happy city for people of all ages could be accomplished. This project will address the need to improve parks and sports facilities which is one of the significant public spaces available in the Tassaban and can play a significant role in providing a case example of how space for residents and visitors can be enhanced to better engage in healthy activities.

**Table 1.2.1 Description of Potential Project under Prioritized Program 1-3:  
 Public Space Design for Better Recreational Experiences and Healthy Living**

<b>Strategic Direction 1: Create a happy city for people of all ages</b>	
<b>Program 1-3 Public Space design for better recreational experiences and healthy living</b>	
Project Name	Parks and Sports Facilities Improvement Project
Objectives	Promote good health and well-being for people of all ages Add green areas to the city
Brief description	Improve, develop, and repair parks, sports stadiums, as well as equipment and facilities that are suitable, usable, and sufficient.
Implementing Agencies	Tessaban Mueang Chumphon
Relevant agencies	Tessaban Mueang Chumphon
Timeframe	3 years (2021-2023)
Budget (Mil., THB)	40

Source: JICA Project Team#

This project should be started with the identification of available public spaces suitable for improvement. For the improvement of public spaces, it is important to regenerate a new concept of what should constitute a public space design for better recreational experience and healthy living. It should include basic principles of universal design, be multifunctional for various users/stakeholders, and serve sustainable development goals.

The overall improvement or re-designing process aims at achieving the following elements:

- Better citizen engagement – to achieve better local economy. The component is to provide spaces to showcase local products, arts, and stories.
- Healthy living – the components should include spaces catering to all users. User analysis and zoning design (for example, for sports, family activities, elderly, etc.)
- Environmentally friendly – Energy, water, and waste management within the facilities should be re-designed. Drainage adapted to the climate and seasonality should be well-planned.

Other physical improvements could include lighting re-design, pedestrian path development, canal and drainage system development, and greenery development. Organization and management system will be re-established, such as calendar for community activities, events and unique city festivals, the maintenance system and voluntary team, funding and space service fees.

**2) Program 2-2: Mode of Transportation and Sharing Road Initiatives - Design and Development**

The “Walkable city and streetscape design and improvement” project was selected as a potential project of the prioritized program 2-2: Mode of transportation and sharing road initiatives - design and development. A walkable city means a city where most people use walking and cycling and public transportation. People can walk conveniently every day. A good walkable city will bring good results to the people who live in the city both in terms of health, economy, and society, helping to promote the environment and improving the

quality of life and society.

**Table 1.2.2 Description of Potential Project under Prioritized Program 2-2:  
 Mode of transportation and sharing road initiatives - design and development**

<b>Strategic Direction 2: Smart mobility</b>	
<b>Program 2-2 Mode of transportation and sharing road initiatives - design and development</b>	
Project Name	Walkable city and streetscape design and improvement
Objectives	<ul style="list-style-type: none"> <li>• To build a pleasant city</li> <li>• To enhance environmental friendliness</li> <li>• To create beautiful memories and is useful for people of all ages and conditions</li> <li>• To strengthen economic distribution and urban activities</li> </ul>
Brief description	<ul style="list-style-type: none"> <li>• Study guidelines and design a city that is suitable for walking.</li> <li>• Improve, install, and construct pathways to be more beautiful and suitable for pedestrians for all ages.</li> <li>• Encourage people to walk in the city and do various activities in the urban area by walking.</li> </ul>
Implementing Agencies	Tessaban Mueang Chumphon
Relevant agencies	Tessaban Mueang Chumphon
Timeframe	10 years (2021-2030)
Budget (Mil., THB)	50

Source: JICA Project Team#

Cities are growing quickly, and the use of parks, public spaces, and streets is changing. Around the world, local investment is moving from highways and urban sprawl to transit and compact cities, and the role of design is shifting from building bigger roads to making streets that support quality places. Most people in the world live in city area, and a vast majority move on foot, by cycle, or in transit; but most public spaces in urban areas are currently designed for cars. This increasingly visible imbalance is shifting the way cities are planned. Streets must be designed to better balance the needs of more people. Designing urban streets to minimize auto-dependency and promote safe, sustainable alternatives can help address several challenges that cities struggle with around the world, including:

- Traffic violence
- Physical inactivity and chronic diseases
- Poor air quality
- Economic inefficiency
- High energy consumption
- Climate change
- Noise pollution
- Poor quality of life
- Inequity

The walkable city concept promotes walking (walk-ability) and the use of bicycles (ride-ability) within the city by designing the city with physical elements that encourage people

to walk and bike for short-distance travel. These can be done in many ways, including physical design, such as making the sidewalk wider, shaded, and without obstructions; by creating bicycle paths that are separated from car lanes for safety; or through planning and policy making, such as promoting urban use of mixed land use with residences within walking distances of the workplace and shops, etc.

The principles of creating walkable cities are outlined in the Walkable City book by Jeff Speck, depicting the following components which play a significant part in the program to promote sharing road initiatives:

- (1) Organize cars: An increase in the number of new roads does not reduce traffic congestion but instead is a factor to increase the number of cars. What should be done is to reduce the number of cars on the road so that the areas can be provided to people and to attract them to be able to safely on foot.
- (2) Support integrated and mixed land use: The community that has a wide range of proximate activities is considered as a good factor for creating a walkable city because the people living in the community have places which they can access on foot. For example, walking from home to school, walking from home to market, etc.
- (3) Manage effective parking spaces to prevent parking spaces that obstruct the connection of activities, which can be organized as a common parking area for buildings, stores that are in the same area, including managing roadside parking spaces. A suitable parking fee should be managed so that pedestrian footpaths can be organized to make it truly pedestrian-friendly.
- (4) Support public transportation by recognizing that walking requires a good connecting transportation system that can take people to areas that are outside of walking distances.
- (5) Promote cycling by providing safe cycling routes that can be used in conjunction with roads.
- (6) Design the sidewalk to be pleasant, making the sidewalk to be a supporting area with an appropriate width, smooth surface, no obstructions, and allow continuous walking.
- (7) Plant trees to provide shade for pedestrians, as well as help reduce heat from the road surface and reduce air pollution.

This project focuses on the application of walkable city to enhance cityscape to achieve smart mobility city and are composed of the following items:

- Concept design: A specific concept for walkable city based on Chumphon's context should be developed and envisioned. There are several potential candidate sites for the development around the Tessaban. The principles of walkability should be applied to create a master plan for the selected site.
- Technological advancement: Traffic monitoring system in the walkable area, park and walk distance calculation and healthy steps counted could be promoted. On-demand public transport technology to connect and create better/ smart mobility

to encourage more walking opportunities.

### 3) **Program 3-1: Centre Design and Development for Agricultural Products and Food Safety**

The “Community Economic Road Project” was selected as a potential project of prioritized Program 3-1: Centre design and development for agricultural products and food safety. Community economy refers to various economic activities, whether production, consumption, and distribution that the people in the community could participate in, think, do, and benefit from. The project is owned by the community and should have its roots in the community's potential. Community wisdom, such as culture, traditions, and the variety of resources available should be used as a basis to create additional value.

**Table 1.2.3 Description of Potential Project under Prioritized Program 3-1: Center design and development for agricultural products and food safety**

<b>Strategic Direction 3: Center of Agricultural Products and food safety</b>	
<b>Program 3-1 Centre design and development for agricultural products and food safety</b>	
Project Name	Community Economic Road Project (*Street Food Souvenir)
Objectives	To promote a sustainable economic system of the community by using the city area wisely in accordance with the productivity of the city and the surrounding area.
Brief description	Organize economic road activities in urban areas to attract tourists and display products from various communities.
Implementing Agencies	Tessaban Mueang Chumphon
Relevant agencies	Tessaban Mueang Chumphon Community development organization
Timeframe	7 years (2021-2027)
Budget (Mil., THB)	40

Source: JICA Project Team#

The components of this project are:

- Select an area in the city to develop as a community economic road.
- Activity area design: it could include identification of suitable trade area and setting up of the procurement system for local products and artisanal pieces. The selected area will be a center where villagers/vendors/farmers/artisans introduce their products to the market, linking rural to city markets without paying fees and encouraging farmers to form a group to sell their agricultural products. This is often associated with the management of community funding and savings activities, stock raising, fundraising, production, and food processing, which is considered as a circular economy established by groups of experienced farmers.
- Physical redesign: to reflect the unique identity of Chumphon (market branding process), procurement of handmade decorations for the markets (umbrella, lighting, plants).
- Management system: Community activities, events, calendars for special festivals and seasons.

#### 4) Program 4-2: Tourism Competitiveness Development

The “City Landmarks and Activities Creation Project” was selected as a potential project of the prioritized Program 4-2: Tourism Competitiveness development. The city is like a living thing that has expanded and changed according to the times. The physical characteristics of the city that as seen today are the results of changes that occurred in the past. Therefore, in order to identify the characteristics of the city, it requires both a visual survey and an original study of the area. To be able to distinguish important features that are the true identity of the city, one must find the characteristics that indicate the uniqueness of the city.

**Table 1.2.4 Description of Potential Project under Prioritized Program 4-2  
 Tourism Competitiveness development**

<b>Strategic Direction 4: Gateway of the Southern Corridor and a must visit destination</b>	
<b>Program 3-1 Centre design and development for agricultural products and food safety</b>	
Project Name	City Landmarks and Activities Creation Project
Objectives	To make Chumphon as a tourist destination
Brief description	Create the identity of a different city from other areas through creativity, together with creating other activities that attract visitors to make Chumphon as a tourism destination by setting a target number of nights that visitors must visit.
Implementing Agencies	Tessaban Mueang Chumphon
Relevant agencies	Tessaban Mueang Chumphon
Timeframe	2 years (2021-2022)
Budget (Mil., THB)	20

Source: JICA Project Team#

Some guidelines for identifying Chumphon’s characteristics to create landmarks are outlined as follows:

- (1) A unique identity that is rare such as building styles, openings, roof shapes, or decorative parts which are unique to the area or in the region.
- (2) Outstanding visibility may be buildings, monuments, city gates, or other elements within the city that can be perceived visually as a landmark or have a unique characteristic that can be seen clearly.
- (3) Expressing the history or important development in the past of the city and is related to the history of the area, such as city walls, fortifications, pagodas, or buildings that indicate the important history and heritage of the city.
- (4) Complete with original conditions or improvements that do not damage the original (root culture) appearance.
- (5) Visually harmonious and consistent means the characteristics of a building or group of buildings that still maintain a harmonious and continuous style.
- (6) Consistency with aesthetic characteristics, beautiful in terms of composition and meaning that people can recognize.
- (7) Demonstrate identity or promote awareness of the important identity of the city,



reflecting the identity of the city location, not by copying or following the pattern of other areas. Based on the city’s identity, the city can also be promoted as a destination brand and a hub of investment in the south.

**5) Program 5-4: Integrated Green City Development**

The “Green City Project” was selected as a potential project of the prioritized Program 5-4: Integrated green city development. Green city aims to succeed in its carbon action plan to reduce and recycle waste, improve municipal energy efficiency, and promote environmentally friendly means of transport. Its overall goal is to cut community-level emissions. This project aims to make a long-term commitment to a holistic eco-system management.

**Table 1.2.5 Description of Potential Project under Prioritized Program 5-4: Integrated Green City Development**

<b>Strategic Direction 5: Integrated Eco-system with Smart Data and Planning</b>	
<b>Program 5-4: Integrated Green City Development</b>	
Project Name	Green City Project
Objectives	To build a livable and environmentally friendly city, reduce toxic carbon.
Brief description	Create a project to encourage people in the city to plant trees, increase green space, live life friendly and reduce environmental damage.
Implementing Agencies	Tessaban Mueang Chumphon
Relevant agencies	Tessaban Mueang Chumphon
Timeframe	10 years (2021-2030)
Budget (Mil., THB)	50

Source: JICA Project Team#

To ignite the green city initiative, Tessaban Mueang Chumphon could start with banning single-use plastic and other related initiatives which could yield effective environmental results, including the first phase initiatives from the retail and tourism sectors.

This project also could include the following components:

- Identify stakeholders to be involved in the banning of single-use plastic;
- Launch the campaign;
- Establish baseline data and evaluate the results every 6 months;
- Expand the initiative to cover totality of waste management – reduce-reuse- recycle and upcycle; and
- Establish Chumphon Green-Award, for example, green hotels, green market.

**1.2.2 Evaluation of Potential Projects under JICA’s Criteria**

The lists of SFC programs and projects were carefully reviewed, and several potential SFC projects were selected. The selection criteria were formulated to ensure that the strategies would start with its initial implementation of the selected programs and projects. These criteria are summarized below and were used to assess the priority of candidate projects.

- (1) Integrated Program: (high/medium/low)
  - Can be developed as one program with several projects.
- (2) Feasibility: (high/medium/low)
  - Overall budget within THB 3 million, covering planning, designing, and implementation.
  - To be implemented within one (1) year.
- (3) Consensus building (high/medium/low)
  - Share of stakeholders (PT and involved agencies) who approve of the project.
  - Clear ownership by the Tessaban to manage/follow up the selected program after completion.
- (4) Other criteria (ability to manage – high/medium/low)
  - To involve more than one (1) organization.
  - Include certain elements or components to be completed with clear tangible outcomes, which can be implemented under the Tessaban's authority.

All five (5) potential projects were evaluated based on set criteria. Although all five (5) candidates were deemed to fit the set criteria, the PT helped debate the benefits and together considered the positive impacts and the potential sustainability and scalability of the available seeded/supported budget. Key considerations are summarized in Table 1.2.6.

**Table 1.2.6 Evaluation of Potential Projects**

JICA Project Criteria	(1) Integrated Program		(2) Feasibility		(3) Consensus Building		(4) Other Criteria	
	Budget	One-year Implementation	Stakeholder Agreement	Ownership by Tessaban	Multi organization Involvement	Clear Outcomes under Tessaban's Authority		
<p>Candidate Project</p> <p>1. Parks and Sports Facilities Improvement Project (Promoting good health and well-being for people of all ages Add green areas to the city)</p>	<ul style="list-style-type: none"> <li>High</li> <li>Starting up budget to envision the long-term master plan.</li> </ul>	<ul style="list-style-type: none"> <li>High (complete in one-year)</li> </ul>	<ul style="list-style-type: none"> <li>High</li> <li>Consensus reached</li> <li>(no drawback or debatable concern of the project)</li> </ul>	<ul style="list-style-type: none"> <li>High</li> <li>Decision making process in the implementation is authorized by Tessaban's mandate</li> </ul>	<ul style="list-style-type: none"> <li>High potential to manage multi-organization involvement</li> <li>Diverse range of users and the existing multi-organization involvement is well established and need further development</li> </ul>	<p>Clear Outcomes under Tessaban's Authority</p> <ul style="list-style-type: none"> <li>High</li> <li>Potentials in long term financial acquisition to complete the entire master plan (based on the existing budgeting and financial mechanism at Provincial and by Tessaban themselves.</li> </ul>		
<p>2. Walkable City and Streetscape Design and Improvement (Build a pleasant city Environmentally friendly Create beauty and memorable and useful for people of all ages and conditions Strengthen economic distribution patterns and urban activities)</p>	<ul style="list-style-type: none"> <li>medium</li> <li>further budget to support the long term will need to be established.</li> </ul>	<ul style="list-style-type: none"> <li>Medium (complete in 1 year)</li> </ul>	<ul style="list-style-type: none"> <li>Medium</li> <li>Main concerns about potential time-consuming in reconciliation of the existing street users.</li> </ul>	<ul style="list-style-type: none"> <li>Low</li> <li>A shift in mindset and learning curve about what should constitute walkable city (considered the existing street and the occupied street)</li> </ul>	<ul style="list-style-type: none"> <li>Low potential in managing multi-organization involvement</li> <li>Concern raised about the complexity of a wide range of organizations involved in the decision-making process and bureaucratic structure may lead to unobtainable results in time</li> </ul>	<ul style="list-style-type: none"> <li>Medium</li> <li>Dependable on many organizations to agree on the plan</li> </ul>		

**Final Report, Vol. 2: Model City Projects**

JICA Project Criteria	(1) Integrated Program		(2) Feasibility		(3) Consensus Building		(4) Other Criteria	
	Candidate Project		Budget	One-year Implementation	Stakeholder Agreement	Ownership by Tessaban	Multi organization Involvement	Clear Outcomes under Tessaban's Authority
3. Community Economic Road Project (* Street Food Souvenir)	High	<ul style="list-style-type: none"> <li>• High</li> </ul>	<ul style="list-style-type: none"> <li>• Medium</li> <li>• further budget to support the long term will need to be established.</li> </ul>	<ul style="list-style-type: none"> <li>• medium</li> </ul>	<ul style="list-style-type: none"> <li>• Medium</li> <li>• Main concerns about potential time-consuming in reconciliation of the existing street users.</li> </ul>	<ul style="list-style-type: none"> <li>• Low</li> <li>• A shift in mindset and learning curve about what should constitute economic road (considered the existing street and the occupied street)</li> </ul>	<ul style="list-style-type: none"> <li>• Low potential in managing multi-organization involvement-</li> <li>• Concern raised about the complexity of a wide range of organizations involved in the decision-making process and bureaucratic structure may lead to unobtainable results in time</li> </ul>	<ul style="list-style-type: none"> <li>• Medium</li> <li>• Dependable on many organizations to agree on the plan</li> </ul>
4. City Landmarks and Activities Creation Project (Create the identity of a different city from other areas through creativity, together with creating other activities that attract visitors to make Chumphon as a tourism destination by setting a target number of nights that visitors must visit.	Low	<ul style="list-style-type: none"> <li>• (very specific)</li> </ul>	<ul style="list-style-type: none"> <li>• Medium</li> <li>• (may not be sufficient to create an iconic landmark)</li> </ul>	<ul style="list-style-type: none"> <li>• High</li> <li>• (completed)</li> </ul>	<ul style="list-style-type: none"> <li>• Medium</li> <li>• (challenging in reaching agreement on what should be the iconic landmark)</li> </ul>	<ul style="list-style-type: none"> <li>• Low</li> <li>• Reconciliation process and the final decision of what should be and where it should be built create a foreseeable challenge for Tessaban</li> </ul>	<ul style="list-style-type: none"> <li>• High</li> <li>• In the conception process but may not be in the long term (maintenance)</li> </ul>	<ul style="list-style-type: none"> <li>• Low</li> <li>• (if the landmarks are built on the site which is under the authority of Tessaban but this may not be the case)</li> </ul>

JICA Project Criteria	(1) Integrated Program	(2) Feasibility		(3) Consensus Building		(4) Other Criteria	
		Budget	One-year Implementation	Stakeholder Agreement	Ownership by Tessaban	Multi organization Involvement	Clear Outcomes under Tessaban's Authority
Candidate Project 5. Green City Project (Build a livable and environmentally friendly city, reduce toxic carbon)	<ul style="list-style-type: none"> <li>• High</li> <li>• Encompasses multi facets of the 5 strategies</li> </ul>	<ul style="list-style-type: none"> <li>• Low</li> <li>• (pilot project could be only a seeding budget to envision the overall plan)</li> </ul>	<ul style="list-style-type: none"> <li>• Low</li> <li>• (short-term initiatives could be achieved)</li> </ul>	<ul style="list-style-type: none"> <li>• Low</li> <li>• There are many elements involved in the green city; banding single plastic use and other related initiatives need private sector's supports</li> </ul>	<ul style="list-style-type: none"> <li>• Low</li> <li>• Implementation must be depending on other parties.</li> </ul>	<ul style="list-style-type: none"> <li>• Medium</li> <li>• Challenging in the coordination between policy makers and implementors (commercial related organization)</li> </ul>	<ul style="list-style-type: none"> <li>• Low</li> <li>• Implementation must be depending on other parties.</li> </ul>

Source: JICA Project Team#

It was agreed that it is important to prioritize a project that could be a “learning case” and could potentially integrate the significant elements of sustainable future cities: financially realistic and achievable in a timeframe which could provide a solid foundation if it needs to be scaled up in the longer term. In the process of program prioritization and project selection, it was also concluded that the selected project should be one wherein the Tessaban could be the focal point for management. The Tessaban should have the power to manage the project, identify key partners, and develop a coordination and work plan with relevant organizations.

Finally, it was concluded to select Parks and Sports Facilities improvement project as a priority project. The pilot project is to be implemented as an initial action of this priority project and could integrate various projects stipulated in Program 1-3: Public Space design for better recreational experiences and healthy living project. The details and scope of the project are explained in the subsequent section. The actions listed below provide information about the scope, implementing agency, implementing schedule, and draft budget of the prioritized program.

**Table 1.2.7 List of Actions for the Selected SFC Program**

<b>Program 1-3 Public Space Design for Better Recreational Experiences and Healthy Living</b>					
	Project Name	Brief Description	Implementing Agency	Timeframe	Budget (mil baht)
1	Preparation of overall improvement plan of City Park and Chumphon Provincial Stadium	The overall master plan of city park and Chumphon Provincial Stadium will be prepared as a direction for further development and for supporting and organizing areas various activities of several organizations, such as events, campaign and etc. In order to improve quality of park and stadium, it is essential to prepare and develop details design for overall improvements.	<ul style="list-style-type: none"> <li>•Tessaban</li> <li>•Mueang Chumphon</li> <li>•Changwat</li> </ul>	2020-2025	40
<b>Physical Improvement of City Park Area</b>					
2	Provincial Stadium Improvement	Improving facilities in the stadium and improving connectivity of the stadium to the park. This aims to provide access and connect the activities between provincial stadium and public park.	<ul style="list-style-type: none"> <li>•Changwat</li> </ul>	2020-2025	10
3	Park Entrance Improvement	Designing seamless park entrance to embrace the park with urban environment. The surrounding area of the park is also designed to fit with the park uses. This aims to attract the number of citizens to use the park.	<ul style="list-style-type: none"> <li>•Tessaban</li> <li>•Mueang Chumphon</li> <li>•Department of Land Transport (DLT) (provincial office)</li> </ul>	2025-2030	5
4	Parking Lots Management	Parking lots; including parking for bicycle, motorcycle, public transport and cars; will be properly designed and sufficiently provided in the line with public needs. This aims to provides convenient options for and manage transport system of citizens to access the parks.	<ul style="list-style-type: none"> <li>•Tessaban</li> <li>•Mueang Chumphon</li> <li>•DLT (provincial office)</li> </ul>	2021-2022	5

<b>Program 1-3 Public Space Design for Better Recreational Experiences and Healthy Living</b>					
	Project Name	Brief Description	Implementing Agency	Timeframe	Budget (mil baht)
5	Lighting Improvement	Improving lighting system to enhance public safety especially at night. Under concerns of environment and management, solar cell system will be utilized.	•Tessaban Mueang Chumphon •Ministry of Energy (provincial office)	2021-2025	2
6	Pedestrian Path Improvement	Improving pedestrian path inside the park to maximize its benefits in terms of safety, mobility, and healthier citizens. To increase quality and capacity of pedestrian, the circulation of public park, and materials of reconstruction will be considered and developed.	•Tessaban Mueang Chumphon	2020-2023	5
7	Intergeneration Space Development	Universal Design concept will be developed in the park, including pathway, signage, parking, and others. This aims to equalize the intergenerational uses and to enhance diverse activities in the park	•Ministry of Social Development and Human Security	2020-2023	5
8	Public Space Furniture and Seating and Shelter Design and Purchasing	Based on the master plan and the zoning designated, public seating and furniture to suit specific users will be procured. Local materials will be sourced to ensure the comfort and durability with minimal upkeep and great looks to match the improvement plan.	•Changwat	2021-2023	20
<b>Environmental Improvement</b>					
9	Flood Prevention	Designing park zones under the consideration of flood prevention and preparing the flooding area.	•Changwat	2021-2025	3
10	Comprehensive Water Management System Development	Developing wastewater treatment system and waterflows in the park. Water bodies (such as ponds), water uses (water supply system), drainage system, and wastewater treatment will be fully integrated and comprehensively designed into water circulation system of the park.	•DPT •Tessaban Mueang Chumphon	2021-2025	30
11	Waste Management	Providing bins for taking different wastes, at least recyclable, non-recyclable, others waster. Coupled with increasing public awareness on waste issues to keep clean public park. Also, the waste collection will be daily managed.	•Tessaban Mueang Chumphon	2021-2025	5
12	Greenery Development	Species of bulb and trees will be considerably designed and planted in the park. This is not only to provide shady (that can increase uses and activities in the park, such as picnic). But also, those species are functioned to mitigate pollutions both in air and water.	•Tessaban Mueang Chumphon	2021-2025	10
<b>Safety and Security Improvement</b>					
13	Security System Management	CCTV and guard are essential for the park to be improved and developed especially in the	•Tessaban Mueang	2021-2025	2

Program 1-3 Public Space Design for Better Recreational Experiences and Healthy Living					
	Project Name	Brief Description	Implementing Agency	Timeframe	Budget (mil baht)
		night-time and in the blind area. This aims to provide security for those who use the park.	Chumphon •Rural Police office		
<b>Park Use Promotion and Event Holding</b>					
14	Development of Showcase for Local Products	This aims to promote economic opportunities for all citizens. The local product of community will be designed to add its values. The showcase will be arranged as a platform for selling various products. This does not only include community products, but also the products of young generation will be greatly promoted.	•Chamber of Commerce (COC) •Community Development Department (CDD)	2020-2030	2
15	Community activities	Community activities are designed in the line with capacity and qualification of each community. The example is 'vegetable garden' for planting the local vegetable species. At the same time, the schedule of community will be designed with each community and age group to provide the suitable time for them to use the park. The activities focus on social activities and enhancement of public awareness campaign while the topic will be designed by citizens and users.	•CDD •Tessaban Mueang Chumphon	2020-2030	5
16	Public Relations for Events and Activities	Promotion and public relation of temporary events and activities by relevant agencies aiming not only to disseminate public activities in the park, but also to provide marketing opportunities for citizens.	•TAT •Tessaban Mueang Chumphon	2020-2030	2
17	Purchasing Sport Facility	Purchasing sport facilities such as playthings, exercising machines and stretching machine.	•Tessaban Mueang Chumphon •Changwat	2021-2025	10
18	Purchasing Equipment for Pop-up Store/Event	Purchasing equipment for a temporary/movable pop-up store or market such as umbrella, poster stand, portable exhibition backdrop.	•Tessaban Mueang Chumphon •Changwat	2021-2022	2
19	Operation and Management System Plan	Operation and Management system will be developed and operated to have a clear organization for maintenances (hardware: e.g., lighting, watering, constructions) and management (software: e.g. activities, events) of the park. Beside this, financial system will be considered and designed among several organizations	•Tessaban Mueang Chumphon •Communities	2020-2030	2

Source: JICA Project Team



### **1.3 Pilot Project under JICA's Financial Support**

Strategic Direction 1: "Creating a happy city for people of all ages" needs both a specialized knowledge and creative artistic design. An experiential design to create a better use of public areas could potentially be a learning case for best practices. To promote well-being and improve the quality of life, Chumphon should capitalize and leverage its strength as a city with a high proportion of green areas. This pilot project was designed and developed using the existing areas to their full potential.

The pilot project selected is "Parks and Sports Facilities improvement project" under Program 1-3: Public space design for better recreational experiences and healthy living. Within the Tessaban, there are a number of available public spaces; these include riverfront (canal), areas around the railway stations, empty spaces, and parks and sports facilities. The use of these existing public spaces could be re-designed and enhanced to ensure that the vision of being a happy city for people of all ages could be accomplished.

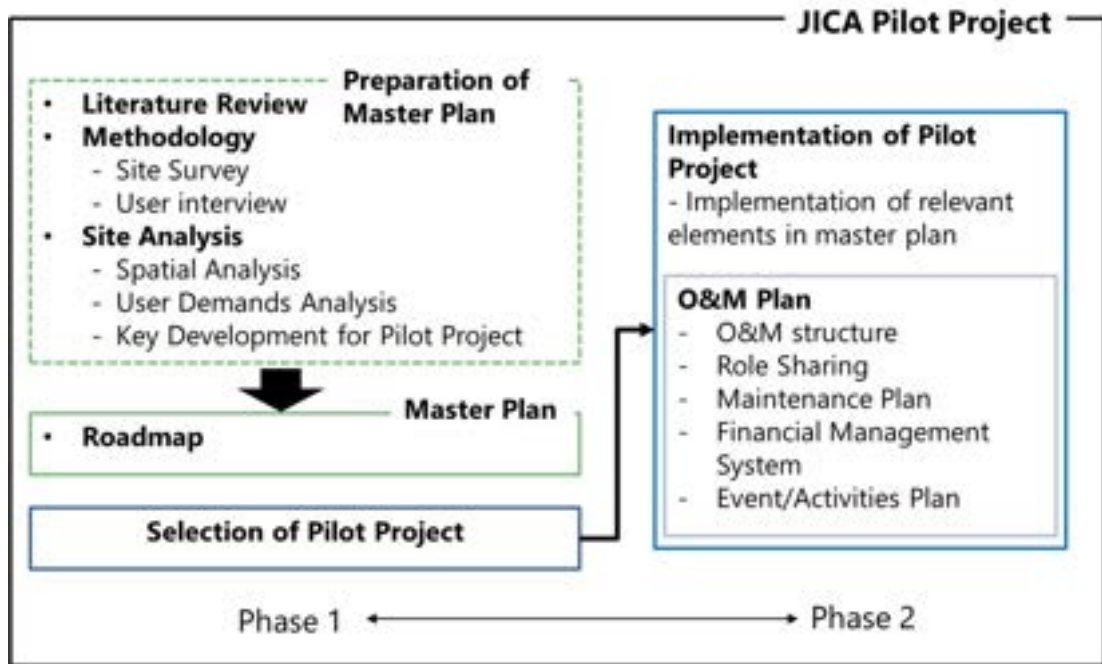
This pilot project aims to address the need to improve parks and sports facilities which is one of the significant public spaces available in the city and could play a significant role in providing a case example of how space for residents and visitors could be enhanced to better engage in healthy activities.

#### **1.3.1 Outline of JICA Pilot Project**

##### **1) Components of the Pilot Project**

The pilot project consists of two phases: Phase 1 (formulation of a master plan) and Phase 2 (implementation of the pilot project), as shown in Figure 1.3.1. In Phase 1, a master plan was formulated to develop the roadmap for overall projects of the site. Based on the master plan, some projects were piloted in Phase 2. The selected pilot project was designed in detail and implemented, including operation and management and relevant activities and/or events.

The pilot project was implemented using a participatory approach; the Pilot Project Team (PPT) consisted of key stakeholders in the pilot project site. At important or necessary timings, PPT meetings were organized to share the progress, gained opinions, and built consensus among PPT members.



Note: O&M = operation and management  
 Source: JICA Project Team

**Figure 1.3.1 Implementation Steps for the JICA Pilot Project**

### **Phase 1 Formulation of the Master Plan for JICA's Pilot Project**

To formulate the master plan, the conceptual framework is determined from several literature reviews and relevant studies to set the master plan direction. In the second step, the methodology is clarified to support site analysis.

In the site analysis, as the third step, the spatial analysis shows the existing condition of the pilot project site. This includes social, environmental, and economic aspects. The site observation is also applied to clarify the actual condition, potentials, and issues of the project site. Also, the user's demand analysis is conducted by focus groups and in-depth interviews to realize the needs of users and to reflect their needs and perspectives in the proposed plan.

With the results of site analysis, the master plan was formulated to present clear contents/characteristics and functions/roles of each area in the pilot project site, linkage among the areas, and users' circulation. After that, the roadmap to the completion of the master plan is formulated. This includes prioritization of proposed projects and area for the detailed design, categorization of the proposed projects by the proposed implementation terms, and identification of key agencies and relevant agencies for each proposed project.

### **Phase 2 Implementation of the Pilot Project**

In Phase 2, some parts of the master plan are selected for implementation. The selected pilot project to implement is elaborated in detail. The establishment of an operation and management (O&M) system and design of activities/events to be conducted in the pilot site are also included in this phase.

## 2) Pilot Project Site

The pilot project site is located in the center of Tessaban Mueang Chumphon, as shown in Figure 1.3.2, and consists of two areas: Arpakornkiattiwong Park (4.0 hectares or 25 rai) and Provincial Stadium (5.8 hectares or 36 rai).



Source: JICA Project Team

**Figure 1.3.2 Pilot Project Site**

## 3) Overall Goals and Objectives

The overall goal of the pilot project is to accomplish the sustainable development vision of Tessaban Mueang Chumphon through the implementation of the SFC Plan. To support this overall goal, a master plan for the pilot project site was prepared and some parts of the proposed master plan were implemented for the enhancement of the linkage between the park and the stadium, as well as for the promotion of these areas.

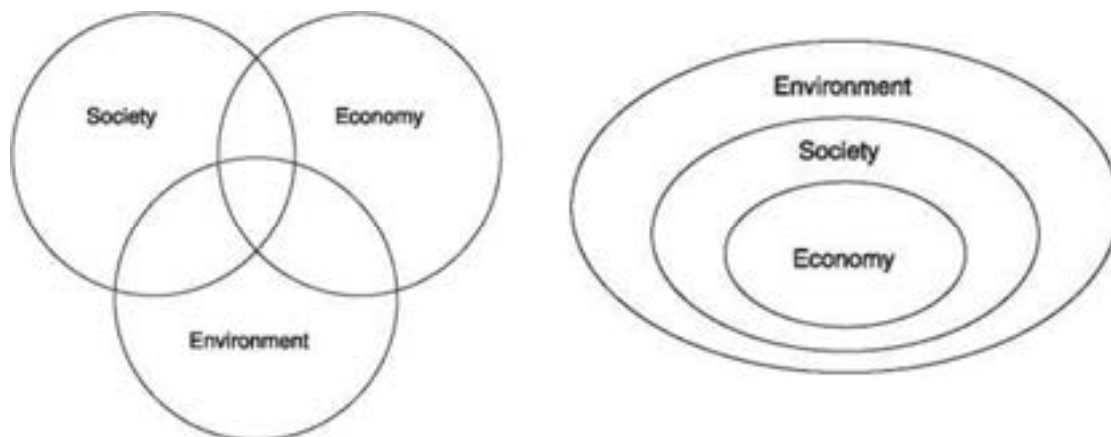
## 4) Scope

The pilot project in Tessaban Mueang Chumphon has the following scope of work:

- (1) Park development – a further review and study to determine the needs for any additional physical development of the park, and implementation of selected element(s); and
- (2) Park usage and activities plan - to ensure that the park would be used by citizens for various purposes, a user analysis is done to help establish an engagement program. Activities relating to health and well-being are envisioned.

### 1.3.2 Conceptual Framework of JICA Pilot Project

#### 1) Concept of an Inclusive Sustainable Approach



Source: Urban Design: Green Dimension 2<sup>nd</sup> Edition, Chapter 5, Moughtin C., 2005

**Figure 1.3.3 The Orthodox Model of Balance in Sustainable Development (left) and the Integrated Model for Sustainable Development (right)**

Sustainable development has proved to be an elusive concept; it is everything and nothing - one moment the fig leaf of respectability for otherwise damaging policies, the next underpinning key initiatives related to climate change or social inclusion.

One of the problems with sustainable development is that it was first promoted and identified as a process to help balance economic, social, and environmental factors. This implied that losses in one area could safely be traded for gains in another, and, in particular, that economic development, being part of sustainable development, could continue unfettered. Hence, one of the government's four sustainable development objectives is "the maintenance of high and stable levels of economic growth and employment".

It is much more useful to approach the subject with integration rather than balance in mind (Figure 1.3.3 shows the difference in diagrammatic form). The integrated figure places the three elements in their correct relationship - economic activity is subsumed within society because it is one of the many forms of social activity. Social life is then placed within the environment, because all activities take place within an environment of some sort. This approach would justify changing the above objective to "achieving appropriate levels of economic growth coupled with high and stable levels of employment". This is a subtle but significant difference which maintains the distinction between ends and means.

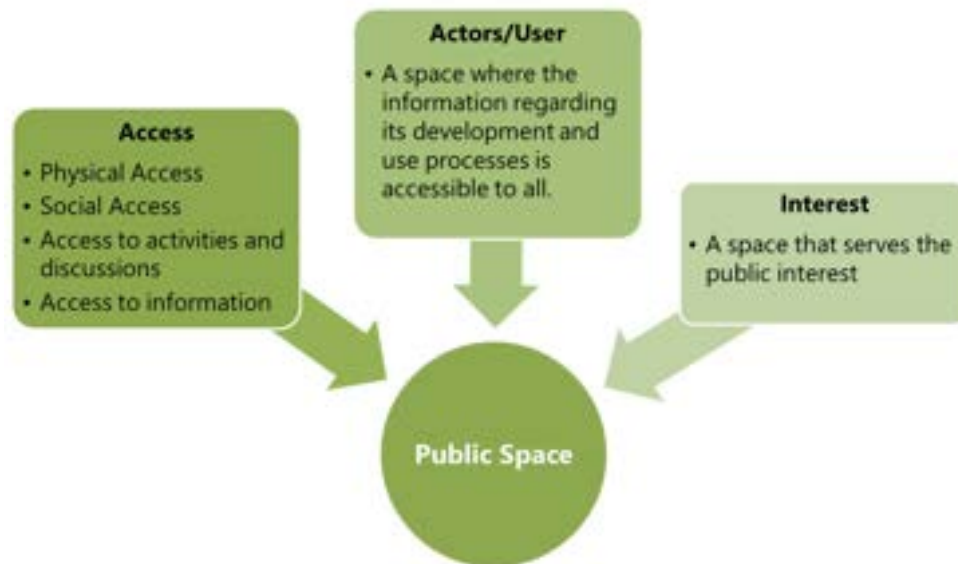
This inclusive sustainable approach, i.e., placing social, economic, and environmental aspects in their correct relationship, should be adopted for the pilot project site to be designed as a public space consisting of a park (Arpakornkiattiwong Park) and a sports facility (Provincial Stadium).

#### 2) Concept of Public Space

Public space forms vital places where people can come together, exchange ideas, protect from diseases, form new friendships, learn skills, share knowledge, enjoy activities and music, etc. Various activities are taking place at different times in public spaces because it

provides the opportunities to induce diverse emotions and feelings as the subjectivity of human being which is expressed in numerous variations. People from different climates and cultures come together and form public spheres and thus create places that reflect their collective needs.

The basic concept of the JICA project stems from public space which has often been described in urban planning as 'open space' including streets, parks, squares, plazas, and other publicly owned spaces accessible to everyone at any time. Public space in the case of JICA project includes parks and sport facility connected to each other and used by both locals and visitors. The concept of 'public' is robust in meaning and used in a varied spectrum. 'Public', as an adjective, intends 'of or concerning the people as a whole', 'open to all', 'accessible to or shared by all members of the community', 'performed or made openly and well-known' (Gove 1976; Makins 1998). Moreover, 'public' means 'a group of people who share a particular interest or who have something in common, who describe the concepts of 'public' and private' on substratum of three criteria of 'access', 'agency' and 'interest', composed this empirical tool to define 'public space' and its 'publicness'.



Source: JICA Project Team

**Figure 1.3.4 Key Components of Public Spaces**

Public space can be defined by these three key components: (1) Quality of access, (2) Actors/users, and (3) Interests (see Figure 1.3.4).

- **Quality of access:** It includes the following four (4) functions:
  - (1) Physical access refers to a space that is physically accessible to all;
  - (2) Social access refers to a space that is socially accessible to all;
  - (3) Access to activities and discussions refers to a space where the activities and discussions on its development and use processes is accessible to all; and
  - (4) Access to information refers to space where the information regarding its development and use processes is accessible to all.

- **Actors/Users:** Public space can be defined according to the nature of agencies in control whether it is private or public. 'Public actors' means agents or agencies that represent and act on behalf of society, community, city, or state while 'Private actors' refer to agent or agencies that act on their own. As per Boyer (1993), for instance, states that any contemporary reference to the "public" is by nature a universalizing construct that assumes a collective whole, while in reality the public is fragmented into marginalized groups, many of whom have no voice, position or representation in the public sphere. Therefore, public space can be defined as a space that is controlled by public actors, and used by the public, which is made up of overlapping spheres of groups of private actors.
- **Interest:** Public interest means the 'common well-being', 'general welfare' or 'benefits that is controlled and received by all members of society'. On the other hand, private interest refers to the benefits controlled and received by individuals. Hence, public space refers to a space that serves the public interest.

Public open spaces have been recognized as a valuable tool for local economic development, revitalization of neighborhoods and community development. The master plan formulated under the pilot project proposes that public open spaces play an important role for ever-growing city landscapes and can help manage some of the environmental, economic, and social risks that cities face.

### **Classification of Open Space**

Open space or public space can be categorized by its typology in order to define its values and functions. Based on open space strategies and best practice guidance (CABE, 2009), the typology of open space is categorized into the following types:

- Parks and gardens;
- Natural and semi-natural urban greenery, e.g., nature reserve and public woodland;
- Green corridors, e.g., river, canal, railway embankment, walking/cycling routes;
- Outdoor and sport facilities, e.g., playing fields, and golf course;
- Amenity open spaces, e.g., hospital, village green, reservoirs;
- Children and teenagers' parks, e.g., play space, adventure playground;
- Allotments, community gardens and city farms;
- Cemeteries and church yards;
- Civic space, e.g., market square; and
- Others, e.g., vacant land.

In this context, the pilot project site can be categorized under parks and gardens. According to the Greenspace Information for Greater London (GiGL), parks can be categorized into seven (7) types by size and distance, as shown in Table 1.3.1.

**Table 1.3.1 Hierarchy of Parks**

<b>Types</b>	<b>Description</b>	<b>Size</b>	<b>Distance from Homes</b>
Regional Parks	Large areas, corridors or networks of open space, the majority of which will be publicly accessible and provide a range of facilities and features offering recreational, ecological, landscape, cultural or green infrastructure benefits. Offer a combination of facilities and features that are unique within London, are readily accessible by public transport and are managed to meet best practice quality standards.	400 hectares	3.2 to 8 kilometers
Metropolitan Parks	Large areas of open space that provide a similar range of benefits to Regional Parks and offer a combination of facilities at a sub-regional level, are readily accessible by public transport and are managed to meet best practice quality standards.	60 hectares	3.2 kilometers
District Parks	Large areas of open space that provide a landscape setting with a variety of natural features providing a wide range of activities, including outdoor sports facilities and playing fields, children's play for different age groups and informal recreation pursuits.	20 hectares	1.2 kilometres
Local Parks and Open Spaces	Providing for court games, children's play, sitting out areas and nature conservation areas.	2 hectares	Distances from homes 400 metres
Small Open Spaces	Gardens, sitting out areas, children's play spaces or other areas of a specialist nature, including nature conservation areas.	Under 2 hectares	Less than 400 metres
Pocket Parks	Small areas of open space that provide natural surfaces and shaded areas for informal play and passive recreation that sometimes have seating and playground equipment.	Under 0.4	Less than 400 metres
Linear Open Spaces	Open spaces and towpaths alongside the Thames, canals and other waterways; paths, disused railways; nature conservation areas; and other routes that provide opportunities for informal recreation. Often characterised by features or attractive areas which are not fully accessible to the public but contribute to the enjoyment of the space.		

Source: [www.gigl.org.uk](http://www.gigl.org.uk) edited by JICA Project Team

The proposed master plan considered the project site is between the scale of a district park, local park, and open space. With its functions, however, the project site likely matched the definition of a district park as it provides a wide range of activities, both indoor and outdoor and being the main park in Tessaban Mueang Chumphon.

### **3) Concept of Parks**

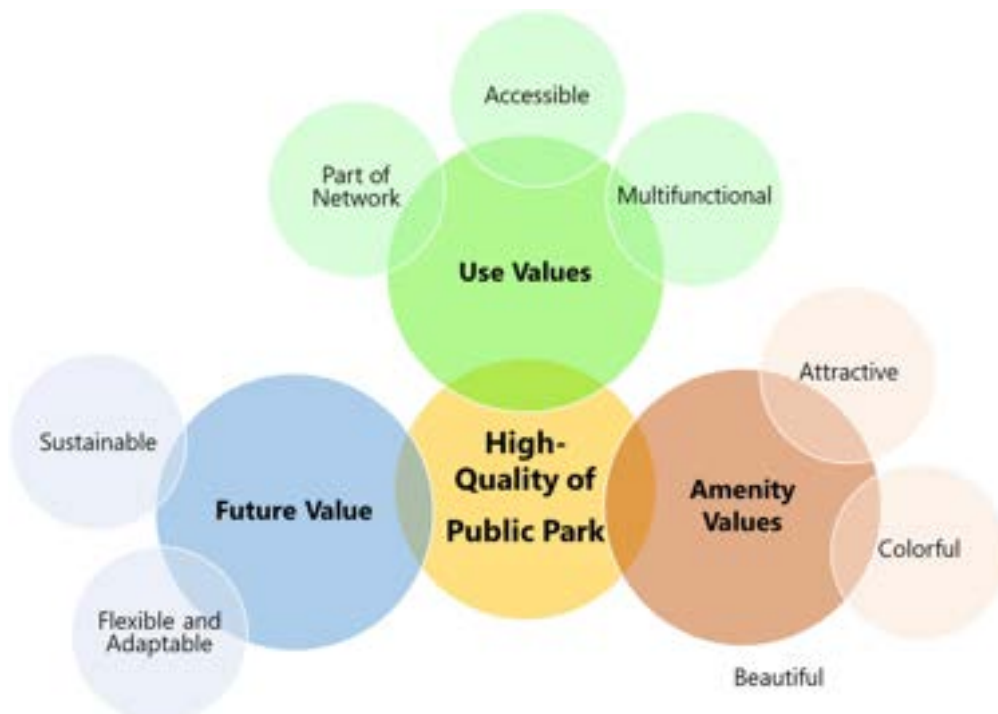
Parks are an important part of public spaces. The British Commission for Architecture & the



Built Environment (2005) advised thus: “Nowadays parks are generally recognized to form an important part of the urban revival, and it is common knowledge that strong and smart cities and regions need strong and smart parks. ‘Start with the Park’ was the advice of many cities trying to attract new investments, visitors, and inhabitants by means of large-scale spatial projects. Barcelona was a European pioneer in this respect and many European cities have followed its lead since then. All manuals and manifestoes concerning urban renaissance and sustainable urban development emphasize that the quality of public spaces in general and of green spaces in particular is a crucial factor. Well-designed and maintained public spaces should be at the heart of any community. They are the foundation for public interaction and social integration and provide the sense of place essential to engender civic pride.”

### **Design of Public Parks**

According to the *Best Practice Guide for the 21<sup>st</sup> Century: Park for the Future*, the development of high-quality parks should provide three main values, namely, the use value, amenity value, and future value. The use value refers to the function of the park which should be optimized by multiple uses. The amenity value is defined as the attractiveness and beauty of the landscape and environment of the park. Obviously, the amenity value mainly enhances the whole ambiance and contributes to the relaxed feeling felt by users. Lastly, the future value is defined as sustainability. The high-quality of public parks should prepare for forthcoming changes and support unexpected events. As shown in Figure 1.3.5, the elements of these three aspects are illustrated.



Source: JICA Project Team

**Figure 1.3.5 Key Components of Public Parks**

#### **Use Value: Part of Network**

Public parks can function as a spatial green network or part of a green infrastructure. As



public parks should be multifunctional, they can connect residential, commercial, and other areas in the city through green paths, recreational spaces, and green spaces. These are also connected through vacant or unused spaces. Such networks could be linked by cycle paths and footpaths. This can consider that the part of such networks can enhance the identity and enhance the uses of such space by its access in the whole area. Thus, the connected system of parks and parkways magnifies the functions of the city.

Additionally, it can consider that the public park is 'ecological network' which is created an interlinkage with other green areas in the city towards a type of ecological continuum. The ecological network is also potentially to mitigate the natural disasters and to improve the environmental quality in the city. The ecosystem services like local climate control or water storage are also able to function in the public park. Hence, the relation of ecological system and urban development is really connected.

To maximize the benefits of public parks as part of a network, planning well is required; the relationship of buildings and activities should fit with open spaces in terms of size and accessibility. Therefore, the public park is an integration of landscape, urban development, and architecture to create the standout space for people to gain various experiences, to create the memories, and to connect activities in the entire city.

#### **Use Value: Accessibility**

As public parks are expected to be accessible to all people, accessibility should consider both physical and social aspects. Physical accessibility refers to any accessibility to reach the destination, like public transport, private cars, bicycles, and walking. To reach a high quality of access, the location of parks is essential to increase its function. The location can reflect on its connectivity to other infrastructures and buildings of the city. Another aspect to be considered is the distance. The suitable distance to reach the park can increase its usage and make it more convenient to people.

Social accessibility is not only the access for all people, but it also refers to the safety and mentality of those who use the park. To provide access to all, the sense of users should be considered. Everyone should be comfortable in using the space. As some parts of public parks can be reserved for specific uses and specific users, it needs to compromise all needs and to prevent competition among different user groups. To make a good social access, the design of public parks is required to use people-oriented approach. This approach will make the local residents understand all conditions, purposes, and uses of public parks. Along this process, not only the sense of ownership will be built, but also the maintenance and cleanliness of the park can be done by the local residents.

#### **Use Value: Multifunctionality**

As part of a green network, it can provide benefits in economic, social, and environmental aspects. These aspects are interconnected and support each other. Considering social aspects, the public park functions as the recreational space. It enhances human well-being and physical and mental health. However, to promote human health and well-being, it is inevitable to consider a good environment. Noticeably, public parks also improve ecological vitality. It not only provides biodiversity to the city, but it also can support improve air quality and water management. For instance, public parks can be considered

as the green lungs of the city that absorb pollution and provide more oxygen. Meanwhile, public parks or green spaces also act as buffer zones to protect from flooding. So, a good environment is also key to promoting people's health and well-being. Besides this, economic efficiency can be promoted through the aesthetics of the park. A beautiful landscape and open spaces can support local activities and city tourism. This means that parks can make the city more vibrant and attractive. The linkage of public parks to the city also generates benefits and income in surrounding areas.

Therefore, the intelligent use of space is required to fit and balance all benefits together. In any cases, the best functions concentrated in the park should be examined by its locations and networks. The key challenge is to optimize the activities related to the people and link such opportunities to the whole city.

### **Amenity Value: Attractiveness**

Despite parks being multifunctional, their key success is to attract people to visit and use. To make public parks become more attractive, the following elements should be considered:

- **Activities:** Attractive activities are the essential part of the public park. It is not only to ensure what people can do and see in the park but also what they feel and why they go and stay there. There are many purposes of the users to use the park, like walking, running, play, practice sport, while some prefer to enjoy the nature, look for peaceful and quiet place, and meet other people. All activities need not always be combined with each other. It depends on the size of park whether to allow or to separate activity zone. However, the park can always rearrange different activities in different times. For the activities that are hard to combine, the common rules should be set to avoid any conflicts among different groups of users. Importantly, all activities in the park should make people feel comfortable and not make the users feel isolated.
- **Facilities:** To support the function and activities in the park, suitable facilities should be provided, for instance, benches, path structure, and lighting. Also, other public services need to be considered, such as toilets, bins, and wifi. The space in public park should be designed to fit with the user's behaviors like picnic.
- **Planting:** To make an attractive space, plants and trees are essential to parks to enhance scenery as these contribute to the sensory experiences of users, while the color and smell of plants can evoke enjoyment of nature.
- **Maintenance** is the crucial part to keep parks attractive. Poor park maintenance makes people avoid visiting and staying at the park. To provide well-maintained parks, it needs to understand the nature and structure in the park in order to define the frequency and method of maintenance. Therefore, it is important to maintain the park in line with its type and expected and actual use.
- **Sense of Safety** is an essential part for the experiences of users in the park. Creating good visibility and reducing dense vegetation, dark corners, and blind spots are essential. This should come along with adequate lighting and sufficient control. Safety is also considered as the graffiti and damaged facilities so that the common rules or

social control can enhance the sense of safety.

### **Amenity Value: Colorfulness**

Different colors used in the park will promote different feelings and senses. Both plants and paintings can support the color of the park. Colors can make a good atmosphere and can be used to delineate activity zones. The variety of colors also creates the beauty of a park. In these terms, the identity of a park can be created by the local art, local culture, and history. Beauty is crucial to attract people and create a good ambiance.

### **Future Value: Sustainability**

Sustainability of parks refers to long-term good management. Parks will exist and provide future value to the city as they have concentrated and diverse ecological systems. Parks should support both living and working patterns so that they encourage people to reduce car usage and consumption of natural resources, at the same time they should increase biodiversity in the city. Therefore, parks are an essential part of cities for future generations. In terms of management, parks should apply sustainable methods and materials, like renewable and low-maintenance materials or facilities to reduce energy consumption.

### **Future Value: Flexibility and Adaptability**

The city is always facing with rapid changes, either demographic or social evolution. To fit the forthcoming changes, the function of public parks should be flexible and adaptable. Moreover, public parks should be designed to serve multiple purposes to reach the maximum benefits of using space.

## **4) Concept of Sport Facilities**

Sport facilities should be used primarily for organized sporting activities, although the area should be physically linked to other areas for informal recreation outside the bounds of the designated playing fields. In some cases, it will be possible to integrate informal recreational opportunities with other forms of recreation such as active sport where the area is of sufficient size. The topographical placement of city sports parks should suit the development of ovals, playing fields, tennis courts, netball courts, etc. City sport parks should represent a sporting recreation facility that is utilized by local clubs and city-wide sporting organizations. The design of the area should be able to incorporate future facilities including such as car parks, amenity blocks, clubrooms, spectator facilities, sports lighting, and storage areas.

The general rules of designing sports facilities are as follows:

- Parks dedicated for sports with multiple facilities but also may include other recreational areas;
- Include multiple clubs and organizations;
- Fields have lighting, toilets, canteens, and grandstands / sport viewing facilities; and
- Include facilities ancillary or required to facilitate the intended sport (i.e., storage shed, seating areas, car park etc.).

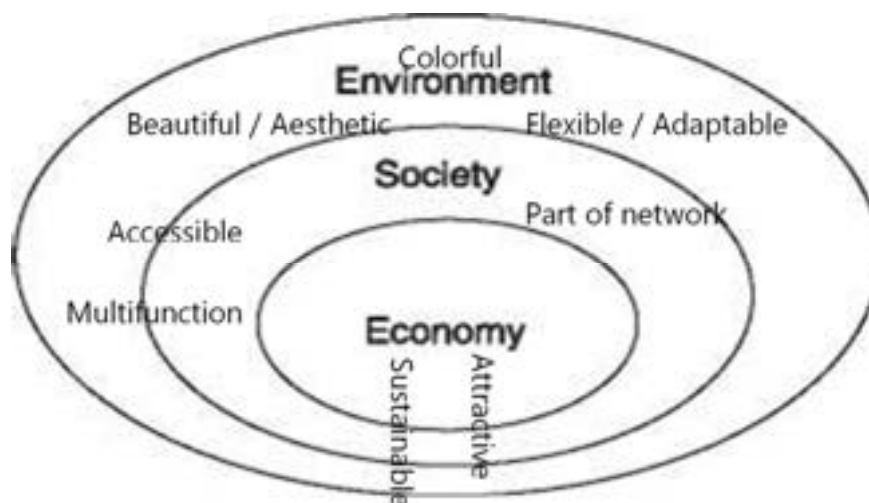
## 5) Key Development Strategies Related to the Project

Aside from trading especially in the communities and commercial business district, the major economic activities of Tessaban Mueang Chumphon are farming, orchard farming, and fishery located on the outskirts of the Tessaban area. The Tessaban has the potential to promote local businesses which then can generate income from the tourism industry. Not only Tessaban Mueang Chumphon but also private organizations in Chumphon Province have relevant and potential plans and development strategies to integrate the local economy with public parks, such as:

- **Investment promotion guidelines** to promote the economy in the community which adds product value and relies on the sufficiency economy philosophy;
- **Guidelines for agricultural extension** to provide academic knowledge, set up a group of farmers, promote distribution of products, find plant species, and handle soil maintenance; and
- **Tourism guidelines** to promote tourism that does not affect the environment and the way of life in the community.

Besides these plans and strategies, the Tessaban also has other several guidelines to promote its economy. There is a regulation related to green economy which has restricted resources, environment, and ecosystem management to promote sustainable development without destroying the value of the environment. Moreover, development of public spaces in Tessaban Mueang Chumphon can promote local tourism by developing beautiful locations, sports facilities, and cultural value through activities for both users and tourists. It will generate income for local communities. For this, cooperation between public and private sector is effective, such as operating coffee shops in the park, setting up greenhouses, and setting up public spaces for rent. In the park the Tessaban owns, the TAT with its partners has organized a coffee fest which created opportunities to showcase local products. This kind of event could be promoted as an annual event to generate income for the city and to build a city brand.

## 6) Conclusion



Source: JICA Project Team

**Figure 1.3.6 Integrated Model for Sustainable Public Park Development**

From the literature review, sustainable development can integrate with the urban public park concept in three aspects, as shown in Figure 1.3.6. Along with this framework, the development of public parks can be defined in the master plan, as follows:

- (1) Public space should have flexible programs, flexible space, and flexible architecture.
- (2) Public space will provide a learning space for people from all walks of life. People will be able to choose a personal space in the sight of others.
- (3) Excellent public spaces should be safe to use. However, the design should not be too restricted such as cutting down trees to avoid gangster hangouts but lacking a place to relax.
- (4) Public spaces will raise the awareness of the differences in groups of people that live within the community; people will have a sense of belonging and feel more connected to their local areas.
- (5) Public spaces are welcoming to people of all ages. The activities that take place in the area will change according to the day and time. For instance, mornings might be the time for the elderly to take a walk, do aerobics dance, and exercise. Working people might come on their breaks to enjoy lunch under the trees in the afternoons. Space can provide a fun activity area for children after school in the evenings. At local festivals, space can be used for little markets, which is called 'self-organizing public service'.
- (6) Public space is a learning area. Having access to knowledge can be used to improve the quality of life. Public spaces can become a meeting point for people in the community for different purposes.

Table 1.3.2 shows the criteria for park design summarized in terms of society, economy, and environment. These are the key aspects for sustainable development of public parks.

**Table 1.3.2 Criteria for the Sustainable Development of Urban Public Parks**

	Society	Economy	Environment
<b>Criteria of the Park for the Future (21<sup>st</sup> century)</b>	Part of network	Attractiveness in Maintenance	Accessibility in physical aspect
	Accessibility in social aspect	Sustainability – in management system	Multifunctionality in each area
	Multifunctionality in each community and activity		Colorfulness
	Attractiveness – Comfort, Safety		Beauty / Aesthetic
	Sustainability – in community		Flexibility / Adaptability
			Attractiveness - Comfort and Facilities, Planting, Maintenance, Safety
			Sustainability in physical aspect

Source: JICA Project Team

### **1.3.3 Methodology**

The methodology used for formulating the master plan for the park and stadium is a mix of quantitative and qualitative methods. The methodology is applied to support site analysis which consists of two main parts, namely spatial analysis and user demand analysis. The details are summarized as follows:

#### **1) Spatial Analysis**

The spatial analysis, which used both primary and secondary data, was conducted to analyze the existing conditions of the site. The secondary data was collected from several documents, such as the Local Strategic Development Plan (LSDP) of Tessaban Mueang Chumphon and other relevant policies. The primary data was mainly collected by site observation. There are two (2) types of site observation that were implemented, namely non-participatory and participatory observation. Non-participatory observation included observing the general conditions at the pilot project site. The spatial analysis mainly covered the location, neighborhood, zoning and size, accessibility, connectivity, landscape, environment, and the facilities in the designated site.

#### **2) User Demand Analysis**

User demand was analyzed by two key methods: questionnaire survey and focus group/in-depth interview to gain better understanding of user behavior, perception, satisfaction, and development needs. The details of both methods are summarized below.

##### **Questionnaire Survey**

The purpose of the survey is to identify user characteristics, behavior, perception, as well as their satisfaction and needs regarding the Arpakornkiattiwong Park and the Provincial Stadium. Needs for future development were analyzed in terms of accessibility, spatiality, activity, aesthetics, and management to support the formulation of the master plan. The questionnaire survey targeted 150 samples from among those who use the Arpakornkiattiwong Park and Provincial Stadium. It was conducted from 8<sup>th</sup> to 30<sup>th</sup> June 2020, or 22 days in total.

##### **Focus Group Meetings and In-depth Interviews**

To complement the results of the questionnaire survey, focus group meetings and in-depth interviews were conducted to brainstorm and discuss public spaces, usage guidelines, and user needs corresponding to the pilot project site. The objective of the focus group meetings was to collect opinions on and discuss issues of the pilot project site among focus groups. The sessions focused on the management and use of the pilot project site, while in-depth interviews focused on the management and investment in developing the pilot project site. The meetings and in-depth interviews were done on 29<sup>th</sup> June 2020.

Twelve (12) participants were chosen by a specific selection method, categorized into two groups as follows:

- 1) **Regular users:** visitors of the area for relaxation and vendors in the area. For example, heads of surrounding communities and traders.
- 2) **Stakeholders:** representing both government and private sector, park and stadium

staff, residents of Tessaban Mueang Chumphon, and relevant private organizations.

The following items were discussed in the focus group meetings and in-depth interviews. The focus group meetings were carried out with one facilitator and one notetaker.

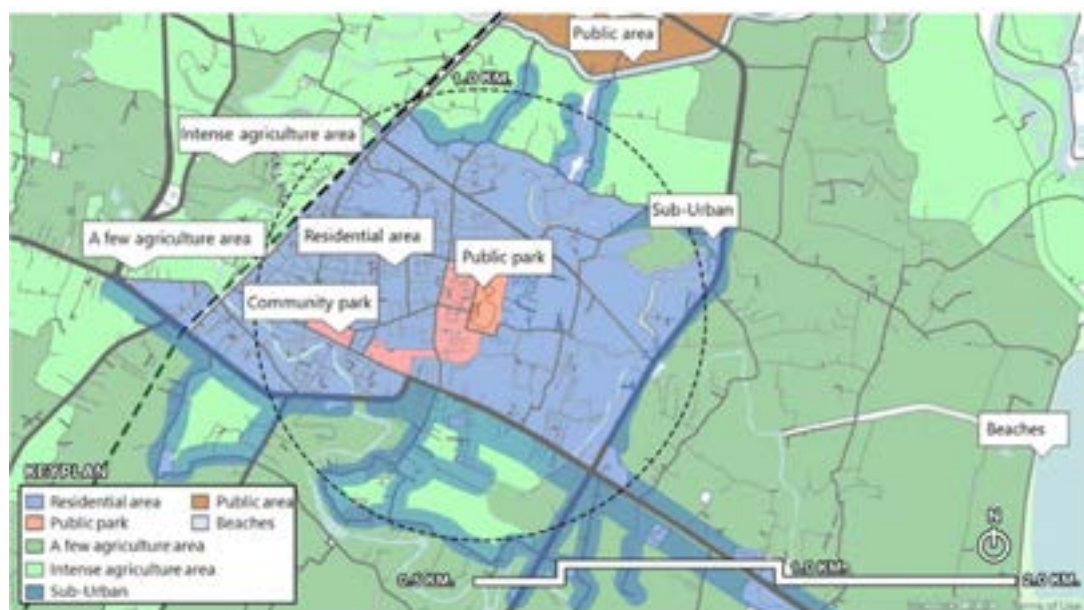
- What is your concept of an ideal park?
- What is your opinion about the physical and environmental issues within Arpakornkiattiwong Park?
- What is your opinion about the utility problems within Arpakornkiattiwong Park?
- What is your opinion about the problems of traveling to Arpakornkiattiwong Park?
- What kinds of facilities or activity areas would you like to add to Arpakornkiattiwong Park?
- What advice do you have for maintaining the activity areas and facilities within Arpakornkiattiwong Park or Provincial Stadium that you use regularly?
- Please give your comments and suggestions.

The information and data obtained from the surveys and various sources were analyzed by several kinds of analysis including physical analysis, content analysis, and user analysis. The results were summarized and discussed to gain ideas on public space designs, development approaches, and management of the pilot project site and reflected into the master plan.

### 1.3.4 Site Analysis

#### 1) Spatial Analysis (Existing Condition)

##### Overview of Pilot Project Site



Source: JICA Project Team

**Figure 1.3.7 Vicinity of the Pilot Project Site**

Figure 1.3.7 shows that the pilot project site is situated in the center of Tessaban Mueang

Chumphon. This is a suitable location for a public park which contributes to the effective use of the space. The area is accessible and beneficial for multiple uses as a public space since it is right in the center of the community or the city.

The pilot project site is not only surrounded by commercial and residential buildings but also several government offices and public service facilities. Within 500 meters from the Provincial Stadium is the Provincial Office of national sport of Thailand, while the Chumphon Khet Udomsak Hospital and the Chamber of Commerce (COC) are located close to the site. Also, within 1 km from the pilot project site, there are government offices, such as Chumphon PAO and Department of Employment. Chumphon train station is also located within the 2 km of the pilot project site.

Open spaces in cities should be flexible since flexibility is the key for various benefits in the area, especially the park. It promotes the potential in terms of social and economic of the area. The flexibility of the public space creates a commercial space, services, and activities. The physical area supports the current region both permanently and temporarily.



Source: JICA Project Team

**Figure 1.3.8 Major Roads around the Pilot Project Site**

As shown in Figure 1.3.8, the pilot project site can be accessed by 2 local roads, i.e., Krumluang Chumphon road and Pracha Uthit road. Krumluang Chumphon road is the main access to the park as it passes the main entrance. It is connected to both rural road 5057 and Nawamin Ruamchai road, which is the main road linking to the national highway. Pracha Uthit road also connects to Nawamin Ruamchai road. This road leads to the Provincial Stadium.

Since the pilot project site is in the center of the community, it is suitable to be developed. This allows convenient access for communities and governments to the park, as well as land use which encourages the use of public spaces.



## The Park and Provincial Stadium

The pilot project site consists of two areas, i.e., Arpakornkiattiwong Park (4.0 ha or 25 rai) and Provincial Stadium (5.8 ha or 36 rai). Arpakornkiattiwong Park is the only public park in Tessaban Mueang Chumphon. The highlight of this location is the Prince of Chumphon Monument situated at the center of the park.

Based on site observation, the pilot project site was divided into 3 zones. The first zone is the stadium which consists of both indoor and outdoor sport facilities. The second zone is the park, and the third zone is the area connecting the stadium and the park, which is labeled as the connecting area (Figure 1.3.9).



Source: JICA Project Team

**Figure 1.3.9 Zones of the Pilot Project Site**

## Accessibility

In terms of accessibility, there are only four (4) entrances and exits within Arpakornkiattiwong Park and the Provincial Stadium including 2 main access points and 2 minor access points (see Figure 1.3.10). Currently, the operating hours of the Arpakornkiattiwong Park are from 5 am to 6 pm, while the Provincial Stadium is from 5 am to 9 pm. The limited period of the operating hours of Arpakornkiattiwong Park creates a need to use access from the stadium after 6 pm. It seems to affect the flow of the users and available parking space and the number of activities inside these two (2) areas. After 6 pm, users can access both parks through the stadium's entrance and mainly use side streets around the stadium for parking. Besides the limited access and operating hours, the car park within the stadium is too dark and not popular among users. This creates a high density of other parking spaces and traffic jam along streets around the park and the stadium. Since these two (2) areas are connected, the users of Provincial Stadium will also use the Arpakornkiattiwong Park, especially during events and festival.



Source: JICA Project Team

**Figure 1.3.10 Accessibility to the Pilot Project Site**

The route in the pilot project site is shown in Figure 1.3.11. The routes do not cover the entire park and Provincial Stadium area, resulting in unused space and blind areas. Also, the blind area could affect the safety of users. Pathways in both areas should be improved and extended to get the most out of the public space.



Source: JICA Project Team

**Figure 1.3.11 Routes in the Pilot Project Site**

### Activities and Facilities

The physical elements of the pilot project site consist of 4 main types: existing building, pedestrian pathways, pond (water area), and green area, as shown in Figure 1.3.12. Most of the Provincial Stadium area consists of buildings while the park has more green space and water area. As the Provincial Stadium mainly serves activities, the environment of the park is more suitable for recreation and relaxation.



Source: JICA Project Team

**Figure 1.3.12 Existing Facilities in the Pilot Project Site**

The Provincial Stadium and the park have different functions and facilities. The activities of both areas can be divided into active activities and passive activities. Active activities are more dynamic and need more spaces while passive activities are more static and involve a stay-still in a more confined space.

As shown in Figure 1.3.13, the Provincial Stadium mainly provides both outdoor and indoor sport facilities, whereas the Arparkornkiattiwong Park provides space for passive activities. The list of activities in both areas are summarized in Table 1.3.3 and Table 1.3.4. It can be seen that activities in both areas are different based on the facilities. The park has more open space which can be used for any purpose. The Provincial Stadium has more specific facilities, such as badminton court and running track, which support a specific purpose.








Source: JICA Project Team

**Figure 1.3.13 Activities in the Pilot Project Site**

**Table 1.3.3 List of Activities in the Provincial Stadium**





Facility	Activity	Description
<b>Active Activities</b>		
Football Field	Football	Used by adult. 
Running Track	Running, jogging	This area is used by all users around the football field 
Badminton Court	Indoor badminton	a mix of children and adult users. 
Basketball court	Basketball	Basketball court is located next to the indoor badminton court. It is an outdoor open space, no cover, and currently under construction. Most of the active groups were teenagers and middle-aged people.
tennis court	Tennis	The tennis court is an outdoor open space with no cover around tennis court. There is also a reception building for users. Users are of all ages. 
Outdoor Space	Skating	Skating area is located next to the tennis court. It is an outdoor open space with no cover. Users are children and teenagers.





		
Takraw Ground	Takraw (kicking into the net goal)	<p>The Takraw ground which is located in the Provincial Stadium is an outdoor open space with no cover. Most of the users are teenagers and the elderly.</p> 
<b>Passive Activities</b>		
Around Football Field	Strolling and (slow) Walking	<p>There are two areas for walking at the Provincial Stadium: within the soccer field and the roads surrounding the soccer field. It is an open space with no covers. Users are of all ages.</p> 
Bodybuilding Gym	Strength exercises	<p>There are bodybuilding gym (currently closed for renovations) and the bodybuilding room under the stands. Users are of all ages.</p> 
Playground	Playing at playground	<p>The playground is an open space with playing equipment for young children with no covers. Users are children and some adults.</p> 

Source: JICA Project Team

**Table 1.3.4 List of Activities in Arpakornkiattiwong Park**

Facility	Activity	Description
<b>Active Activities</b>		
Outdoor badminton Court	Badminton	a mix of children and adult users. 
Open Space	Takraw	The ground is an outdoor open space with no cover. Most of users are teenagers and the elderly. 
Path around the Pond	Running/jogging	The running track is an open space around the pond with no covers. Users are of all ages. 
<b>Passive Activities</b>		
the Prince of Chumphon Monument	Worship at the area of the Prince of Chumphon Monument	The monument is in an open space with no covers. Users are of all ages. People attend this area to worship the significant figure and commemorate the monuments. It is a landmark of the park for people to take photos. 
pavilion	Aerobics	Aerobics area is an outdoor open space with a pavilion. Most of users are the elderly.

		
Walkway	Walking	<p>Walkway of Arpakornkiattiwong Park is around the worship area of Krom Luang Chumphon Monument. It is an open space with no covers. Users are of all ages.</p> 

Source: JICA Project Team

The following issues were found in the pilot project site:

- (1) Picnic (passive activity): some users come to Arpakornkiattiwong Park for a picnic as a family. However, they only stay for a while due to the heat and the size of the activity areas.
- (2) Walking and running (active activity): People use the same tracks for multi-purposes, for example, some users are strolling or walking in different pacing, while others are jogging, running, or training as runners.

Therefore, it can be seen that different users must share the same space to do different activities. This creates concerns on safety, as well as an inconvenient and uncomfortable situation if the area is not well designated. It is suggested to reconfigure the spatial design of the running tracks in the park and in the stadium.

### **Landscape and Environment**

Figure 1.3.14 shows the variety of trees in Arpakornkiattiwong Park. Arpakornkiattiwong Park has various sizes and types of trees that can be useful when undergoing modification for activities in green areas. Some green areas in Arpakornkiattiwong Park, however, have not been maximized in terms of utilization.



Source: JICA Project Team

**Figure 1.3.14 Hardscape and Softscape Park Elements**

In terms of pavement as shown in Figure 1.3.15, the materials of Arpakornkiattiwong Park are not suitable for active activities. Many of the materials, especially concrete, retain heat from the sun during the day, causing high temperatures for various activities in Arpakornkiattiwong Park.



Source: JICA Project Team

**Figure 1.3.15 Pavement Materials in the Park**

Over 50% of the pilot project site is exposed to extremely high temperatures during the day (see Figure 1.3.16). This is caused by having a large amount of paved area that promotes heat retention, as well as the area without shades. These high-temperature areas are not suitable for doing activities.





Source: JICA Project Team

**Figure 1.3.16 Heat Levels at the Park**

### SWOT Analysis of the Pilot Project Site

A SWOT analysis of the existing spatial condition identified the strengths, weaknesses, opportunities, and threats of the pilot project site, as follows:

**Strength** is mostly found in the environmental conditions, namely leisure activities along with the identity and sense of belonging of the area in historical terms.

**Weaknesses** are the lack of facilities for doing activities, attractive landscape, and maintenance within the area. These will be a drag to develop a public space for all people and promote tourism.

**Opportunity** is characterized by local people having a sense of ownership of the area, which leads to or ensure public participation in developing areas in the future. Target areas have the potential of stimulating the economy in surrounding areas as well as tourism.

**Threat:** Most of the development of the pilot project site are under the threat of environmental conditions which are blind-spot security, lack of drainage system, and waste management, as well as lack of budget.

**Table 1.3.5 SWOT Analysis of the Pilot Project Site**

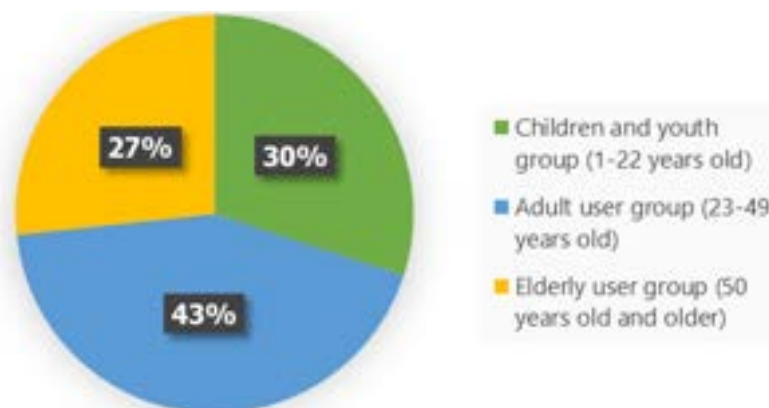
No.	Existing Condition	SWOT Analysis			
		Strength	Weakness	Opportunity	Threat
1	Environmental Condition	<ul style="list-style-type: none"> <li>- Activity area for relaxation</li> <li>- Historical identity</li> <li>- Being a center of the communities</li> <li>- The connected space of both Arpakornkiattiwong park and the Provincial Stadium</li> <li>- Green area filled with trees in Arpakornkiattiwong</li> </ul>	<ul style="list-style-type: none"> <li>- Inadequate facilities</li> <li>- Lack of landscape which remain in visitors' memory</li> <li>- Lack of well designated areas for multiple uses.</li> <li>- Most of the park space is a hardscape and lacks tree shade.</li> <li>- Surface materials of the park are</li> </ul>	<ul style="list-style-type: none"> <li>- Increase of the accessibility and usage of some areas to accommodate future activities.</li> <li>- Stimulation of tourism</li> <li>- Support of the area for activities for children and adolescents in green areas.</li> <li>- The park can</li> </ul>	<ul style="list-style-type: none"> <li>- Security at blind spots</li> <li>- Lack of drainage system</li> <li>- Lack of waste management</li> </ul>

		ng Park	not suitable for active activities. - Weak physical accessibility including entrances, opening hours, and parking area	promote local tourism by developing beautiful locations	
2	Social Condition	- A sense of belonging - Social interaction - Variety of activities	- Lack of comprehensive maintenance in the public service area	- Increased public awareness - Increased quality of life with public spaces - There is a shared responsibility among the private and public sector and local people to participate in management. - Economic values, culture, and beliefs	
3	Economic Condition	- Economic values in culture and beliefs	- Lack of space to accommodate multiple activities - High maintenance costs	- Potential to use public areas to promote local businesses and generate income in the tourism industry.	- Lack of budget for area management

Source: JICA Project Team

**2) User’s Needs Analysis**

Among the 150 respondents of the questionnaire survey, 54% were male, 44% female, and 2% non-binary. Most of the respondents were adults (aged between 23 and 49) followed by children and youths (under 22), and elderly (aged 50 and over), accounting for 43%, 30%, and 27%, respectively (see Figure 1.3.7). In terms of occupation, most of the respondents were students (30%) and state enterprise employees and government officers (27%).



Source: JICA Project Team

**Figure 1.3.17 Age of Respondents**

### **User's behavior**

It was found that there are different activities and times at the pilot project site among the age groups. Children and youth mainly used the space of the Provincial Stadium for active activities while the elderly spent more time at the Arpakornkiattiwong Park. The user's behavior among three groups is summarized below.

- (1) **Children and youth (1-22 years old):** Main users from this age group are high school students and college students. They visit the pilot project site from 16.00 - 18.00 during the middle of the week and on weekends. The main activities of this age group are running, playing football, and badminton at the Provincial Stadium.
- (2) **Adults (23-49 years old):** Users from this age group are working people. They visit the pilot project site from 16.00 to 18.00 during the middle of week and on weekends. The main activities of this age group are walking, jogging, and doing recreational activities with family members at Arpakornkiattiwong Park and the Provincial Stadium.
- (3) **Elderly (50 years old or older):** This group uses the pilot project site in the morning at 05.00 - 08.00 and evening at 16.00 - 17.00. The main activity of this age group is an exercise with shock reduction around Arpakornkiattiwong Park.

Most users of the Arpakornkiattiwong Park were adults and the elderly, whose typical passive activities were walking and recreational activities. Half of the respondents were interested in walking and running (50%), followed by relaxation at 35% and other activities like spending time with family and selling goods in the area. Most users of the Provincial Stadium are children and adolescents. The typical active activities for these groups are running and football which corresponds to the active group according to the age range.

To sum up the user's behavior, it is also revealed that each age group utilizes the pilot project site in different ways. Arpakornkiattiwong park mainly provides spaces for passive activities while the Provincial Stadium mainly provides spaces for active activities. Vigorous children and adult age groups have needs for more active activities that involve a lot of movements. Even though the elderly is active, the activities of this group are rather passive. To avoid overlapping use of the same area, there must be time management for the usage at different times of the day.

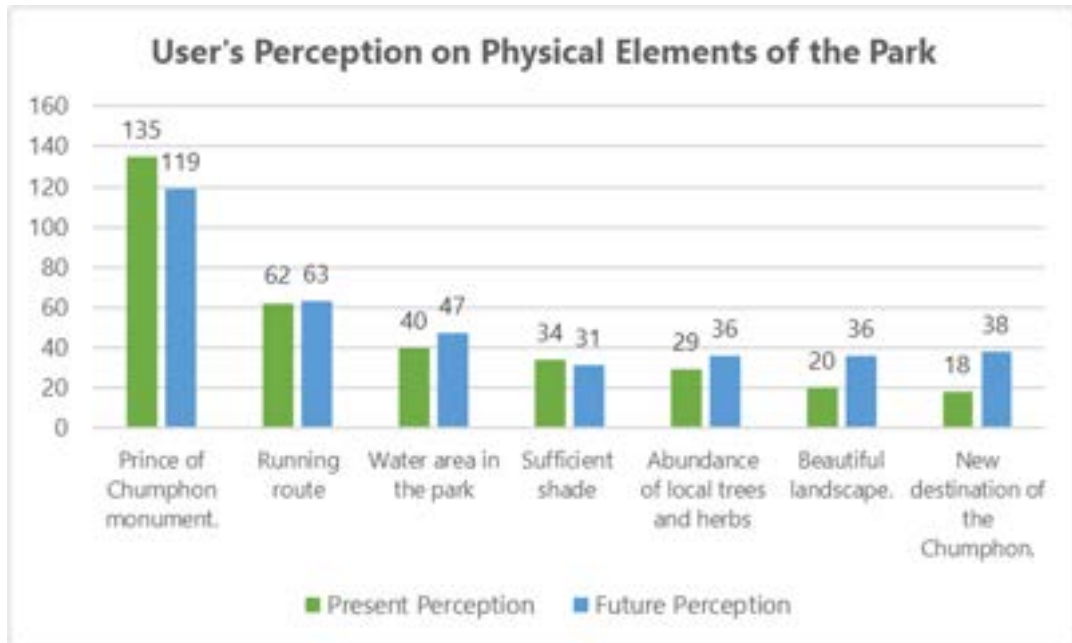


Source: JICA Project Team

**Figure 1.3.18 Types of Park and Stadium Activities**

### **User's Perspectives**

Both present and future perspectives (next five to 10 years) of users were evaluated with two (2) main categories: perception of physical elements and activities in the park. This aimed to figure out the identity and the strength of the park. The users' perception of the present and future physical elements is shown in Figure 1.3.19. The prince of Chumphon monument is currently regarded as the most outstanding element of the park, followed by the running track and water area, sufficient shade, abundance of local trees and herbs, beautiful landscape, and new destination of Chumphon. However, the future perception shows the expectation of users has slightly changed from the present in some aspects. While the prince of Chumphon, the running route, and water area in the park remain as the highest rated elements, the expectation of creating the park as a new destination of Chumphon has gained more interest from the users. Also, the users are likely to perceive a more beautiful landscape and local trees and herbs in the area. At the similar level, sufficient shade in the park is required along with the other elements.

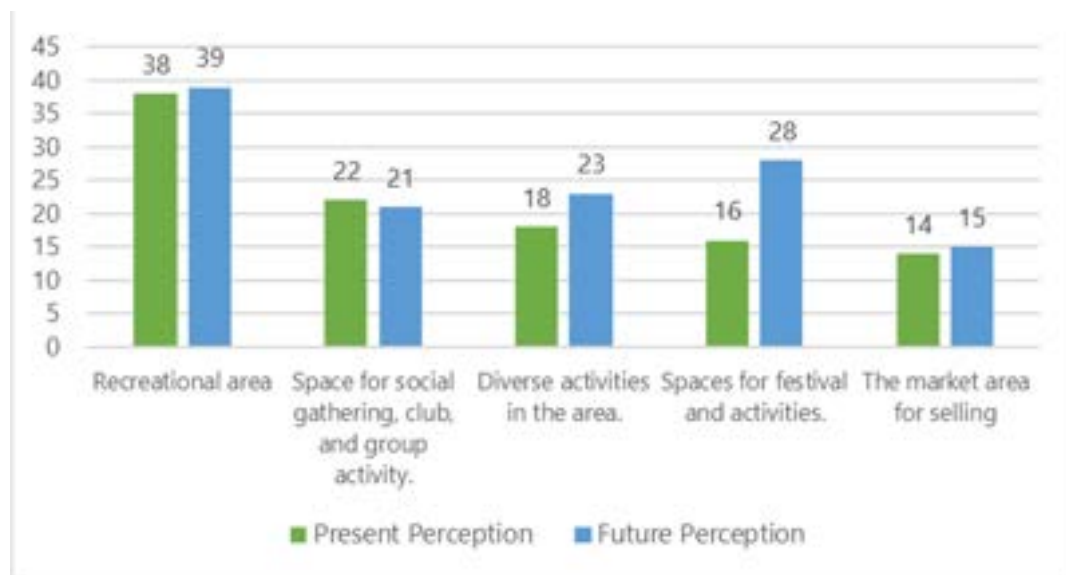


Source: JICA Project Team

**Figure 1.3.19 User's Perception on Physical Elements of the Park**

Figure 1.3.20 presents the users' perceptions of the present and future activities in the park. They perceived the park as a recreational space both at present and in the future. This is followed by the perception of the park as space for social gathering, diverse activities, festivals, and markets. Compared to the future, the perception on activities of users prominently shifted with festival site as the second highest in the future uses of the park, followed by activities, social gathering, and market.

All in all, the users' perception showed that the key physical element of the park is the prince of Chumphon, while the key activity remains recreation. However, in the future, the users perceived the potential of the park to be a new destination and space for festivals and events.



Source: JICA Project Team

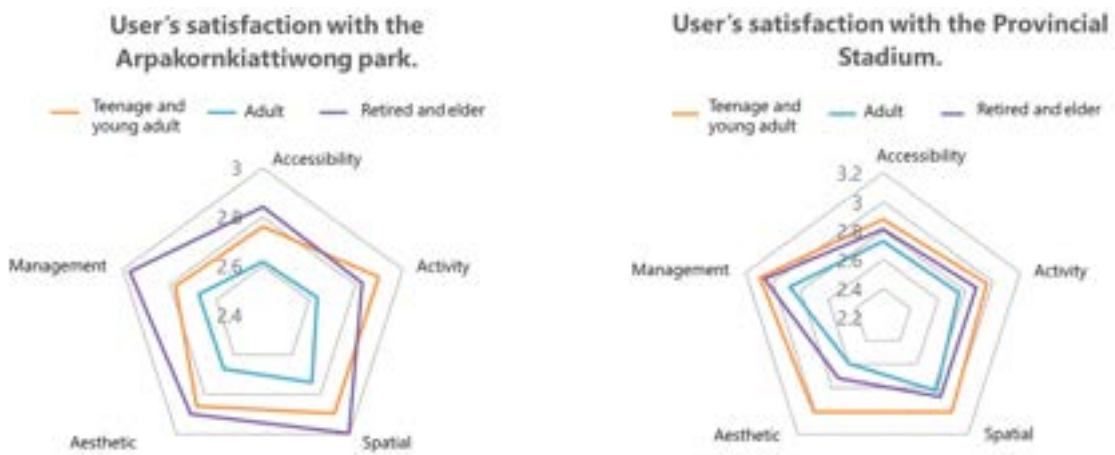
**Figure 1.3.20 User's Perception of Current and Future Activities in the Park**

### User's Satisfaction and Development Needs

The users' satisfaction was evaluated in five (5) main aspects; accessibility, activities, spatiality, aesthetic, and management, in two main areas, i.e., Arpakornkiattiwong Park and the Provincial Stadium.

As shown in Figure 1.3.21, for Arpakornkiattiwong Park, all age groups, especially the elderly, show high satisfaction with the spatial aspect. While the group of children and youth showed significant satisfaction on activity, adults and the elderly presented the lowest satisfaction on it comparing to the other aspects. Additionally, management was likely to be satisfactory to the elderly group rather than the other groups.

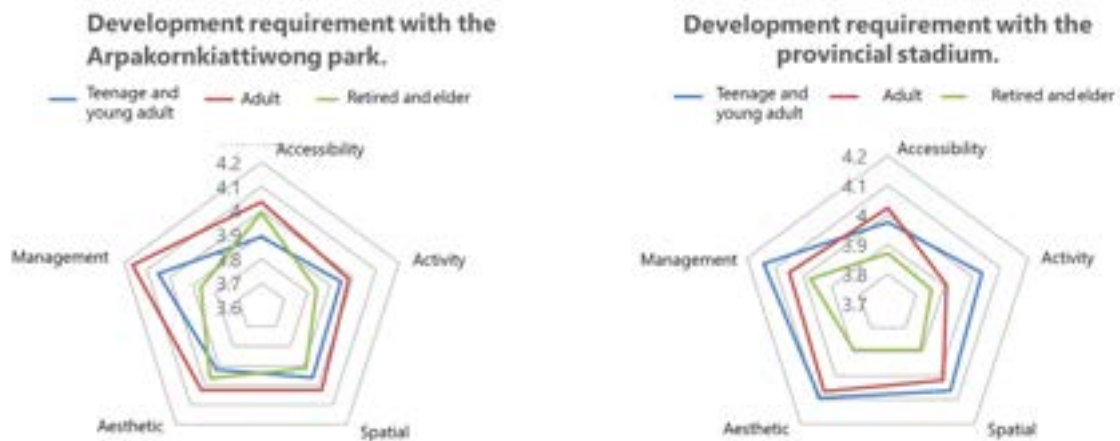
On the other hand, the Provincial Stadium gained highest satisfaction level in management by every user group. Interestingly, only the group of children and youth was likely to prefer the aesthetic rather than the other two groups.



Source: JICA Project Team

**Figure 1.3.21 Users' Satisfaction with Arpakornkiattiwong Park I (left) and the Provincial Stadium (right)**

In terms of development needs, it can be concluded that the groups of children, youth, and adults liked the further development of the Arpakornkiattiwong Park's management, while the elderly and retirees strongly preferred accessibility. Similar to the Arpakornkiattiwong Park, all age groups indicated higher development needs in the management of the Provincial Stadium. Teenagers and young adults, as well as adults, also pointed to higher development needs on the aesthetic of the Provincial Stadium.



Source: JICA Project Team

**Figure 1.3.22 Developments Needs of Arpakornkiattiwong Park (left) and the Provincial Stadium (right)**

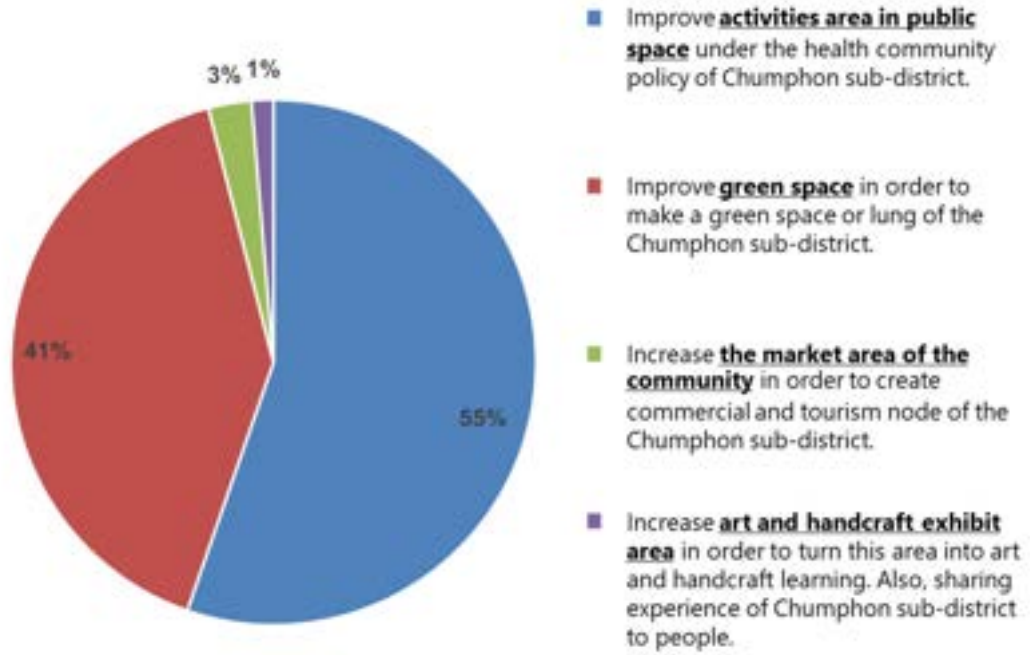
All in all, the questionnaire survey revealed the following demands of each age group:

- **Children and adolescents' demand for development:** Space and management of Arpakornkiattiwong Park and the Provincial Stadium.
- **Adults' demand for development:** Space and management of Arpakornkiattiwong Park and the Provincial Stadium.
- **Elderly and retirees' demand for development:** Accessibility and management of the Provincial Stadium.

Looking at the requirement for the further improvement of the park (shown in Figure 1.3.23), more than half of the respondents (55%) strongly required the Tessaban to improve the activity areas in public space under the healthy community policy of Chumphon. The improvement of green space as a green lung of Chumphon shared the second highest (41%). The promotion of a community market area, as well as art and handicraft exhibitions, is at a low level, accounting for 3 and 1%, respectively.

It can be concluded that the users have strongly prioritized public spaces which provide various activities, improve well-being, and promote public health. To reach this improvement, green spaces should be enhanced.





Source: JICA Project Team

**Figure 1.3.23 Requirements for Further Improvement**

### Results of Focus Group Meetings

In addition to the questionnaire survey which grasped general users' needs, a focus group meeting and in-depth interviews were also conducted to get more concrete and detailed opinions in terms of physical, tourism, activity, and management aspects. The users and stakeholders discussed together the issues and considered the key points in each aspect.



Source: JICA Project Team



**Figure 1.3.24 Summary Board of Focus Group and In-Depth Interviews**

Opinions from the participants were posted and summarized on the board shown in Figure 1.3.24. Users and stakeholders shared their perspectives on the use of the pilot project site in physical, tourism, activity, and management aspects. Table 1.3.6 shows the summary of opinions gained from the focus group meeting and in-depth interviews.

**Table 1.3.6 Results of Focus Group Meeting and In-depth Interviews**

Aspect	User	Stakeholder	
<b>Physical Structure and Tourism</b>	(1) Fence should be improved for better appearance and safety.	(1) The park should have an outstanding image with the design that emphasizes Chumphon's identity.	
	(2) Bins should look more eco-friendly by changing the material from plastic to artificial wood.	(2) Aerobic area should be improved for better appearance.	
	(3) Walls or fence should be added between Provincial Stadium and Arpakornkiattiwong Park with accessible gates.		(3) Areas should be increased for organizing 'music in the garden' events
			(4) Aerobic area should be expanded to support annual cultural activities.
			(5) The Prince of Chumphon Monument should be enhanced for better and more outstanding appearance.
			(6) Pond area should be improved for better and more efficient utilization.
			(7) Observation tower should be designed and constructed on the current pond area to promote tourism.
			(8) Football turf should be modified from natural grass to artificial grass to reduce the maintenance costs.
<b>Activity</b>	(1) The number of outdoor exercise equipment should be increased because there are the small number of original equipment and those are already worn-out.	(1) Certain area should be developed to support the exhibitions of both government and private sectors.	
	(2) Areas and equipment for children and the elderly should be increased.	(2) The big banyan tree area in the park should be enhanced and developed as a performance stage and recreational area in Man Sai.	
	(3) An herb garden should be added to provide knowledge of local species and local wisdom.	(3) Running routes around Provincial Stadium should be connected to paths around the park for securing longer walking and running routes accessible for all age.	
	(4) Bicycle tracks for children should be added.	(4) The pavement material of running track should be standardized.	
	(5) Photo-taking and landmark checking-in points should be added for social media and marketing	(5) Activity area for the elderly should be added by focusing on the equipment that facilitates stretching of muscles.	

Aspect	User	Stakeholder
	purposes.	
	(6) Additional amenities should be added to park areas such as seating for taking a rest, corridors with sun canopy, and public toilets.	(6) Natural atmosphere should be created for better experience such as the sound of water, birds chirping etc.
<b>Management</b>	(1) It should be prohibited to bring dogs into park area.	(1) There must be efficient trees and nurseries management system.
	(2) Better parking management system and more parking space should be developed for future activities.	(2) Drainage system in the park area should be improved.
	(3) Number of public toilets should be increased for future use along with high quality cleaning.	(3) Water retention system should be improved since the pond has no water storage capacity.
	(4) Security system should be installed such as CCTV cameras and better lighting system.	(4) Utilization of existing facilities should be maximized by turning them into a coffee shop, shops, amulet club, etc.
	(5) Agreement and requirements should be made for organizing vendors outside the park.	
	(6) There should be no shops within 50 meters for convenient walking on footpath and better appearance at the entrance.	

Source: JICA Project Team

Physical, tourism, activity, and management aspects derived from both users and stakeholders are summarized below.

- **Physical:** In addition to having good scenery, tourism must be promoted. Although there are no large buildings to attract visitors, the pilot project site has the Prince of Chumphon monument for users to give respect to. Once users perceive the natural environment of Arpakornkiattiwong Park, they will come to realize that Chumphon has a perfect environment.
- **Tourism:** Nowadays, people entering the park have nothing to do except for taking a walk. This is where the tourism dimension comes in. The questions would be how to attract people to visit and use the park. For example, when people come to the park to buy coffee, there should be places where they can sit down, enjoy the view, and look at activities. This will result in attracting people to check-in and take pictures.
- **Activity:** The pilot project site should be developed to be used in various periods to prevent the loss in the potential of the area located in the middle of the city.
- **Management:** When the space and capacity of the park are designed and managed well, it will also be necessary to re-arrange the management system to ensure that the additional investments in any additional areas will be well maintained.

In addition to those opinions and issues, Tessaban Mueang Chumphon has issues on how people perceive the Tessaban's identity. When referring to the identity of Tessaban Mueang Chumphon, most of those who were asked perceived it as the Prince of Chumphon monument. This will also be a sensitive issue if there are proposed landmarks on the site;

they should be designed to complement the existing respected significant image of the city.

### 3) Conclusion

Based on an analysis of existing conditions and users' needs, the following two points should be considered in the development of public spaces:

- (1) Public space is determined based on its accessibility to all groups of people, the operating hours, and open access for multiple uses and activities.
- (2) Public space should be developed through a participatory process.

The key points for developing public spaces were analyzed. The user's focuses are on the following four (4) design criteria: accessibility, spatiality, aesthetics, and management. The details of each criterion are summarized in Table 1.3.7.

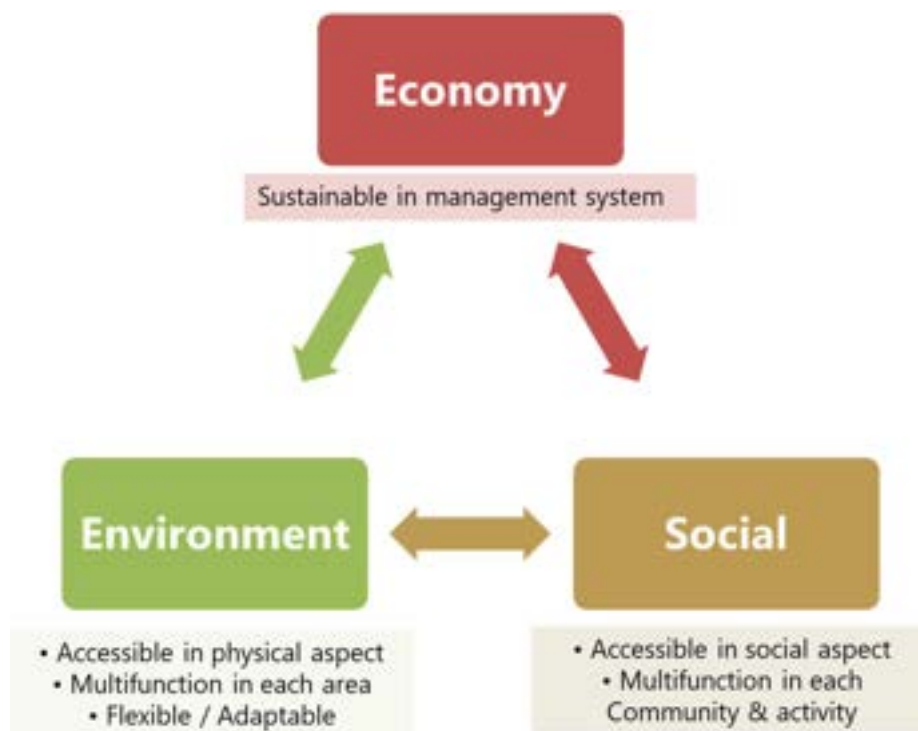
**Table 1.3.7 Design Criteria**

Accessibility	Spatiality	Aesthetic	Management
<ul style="list-style-type: none"> <li>• Viewpoints and destinations</li> <li>• Green areas</li> <li>• Maintenance and safety</li> <li>• Public transportation route connects with the area</li> <li>• Provides temporary public transportation stops</li> </ul>	<ul style="list-style-type: none"> <li>• Accessibility</li> <li>• Playground</li> <li>• Route for walking and running</li> <li>• Improved pavement</li> <li>• Good drainage and waste management</li> </ul>	<ul style="list-style-type: none"> <li>• User perception experience</li> <li>• Amphitheater: requirement for additional free concerts and cultural events</li> <li>• Viewpoints and Axis: Re-open</li> <li>• Shows an obvious Chumphon identity</li> <li>• Shows Chumphon art and culture in each area</li> <li>• Has a local plant (provincial tree and flower)</li> </ul>	<ul style="list-style-type: none"> <li>• Maintenance and safety</li> <li>• Appropriate financial management</li> <li>• Government and resident collaborate to maintain and manage the area</li> </ul>

Source: JICA Project Team

The master plan on Parks and Sports Facilities Improvement was formulated with sufficient attention given to these aspects. The contents of the master plan are summarized in subsequent sections.

### 1.3.5 Master Plan on Parks and Sports Facilities Improvement



Source: JICA Project Team

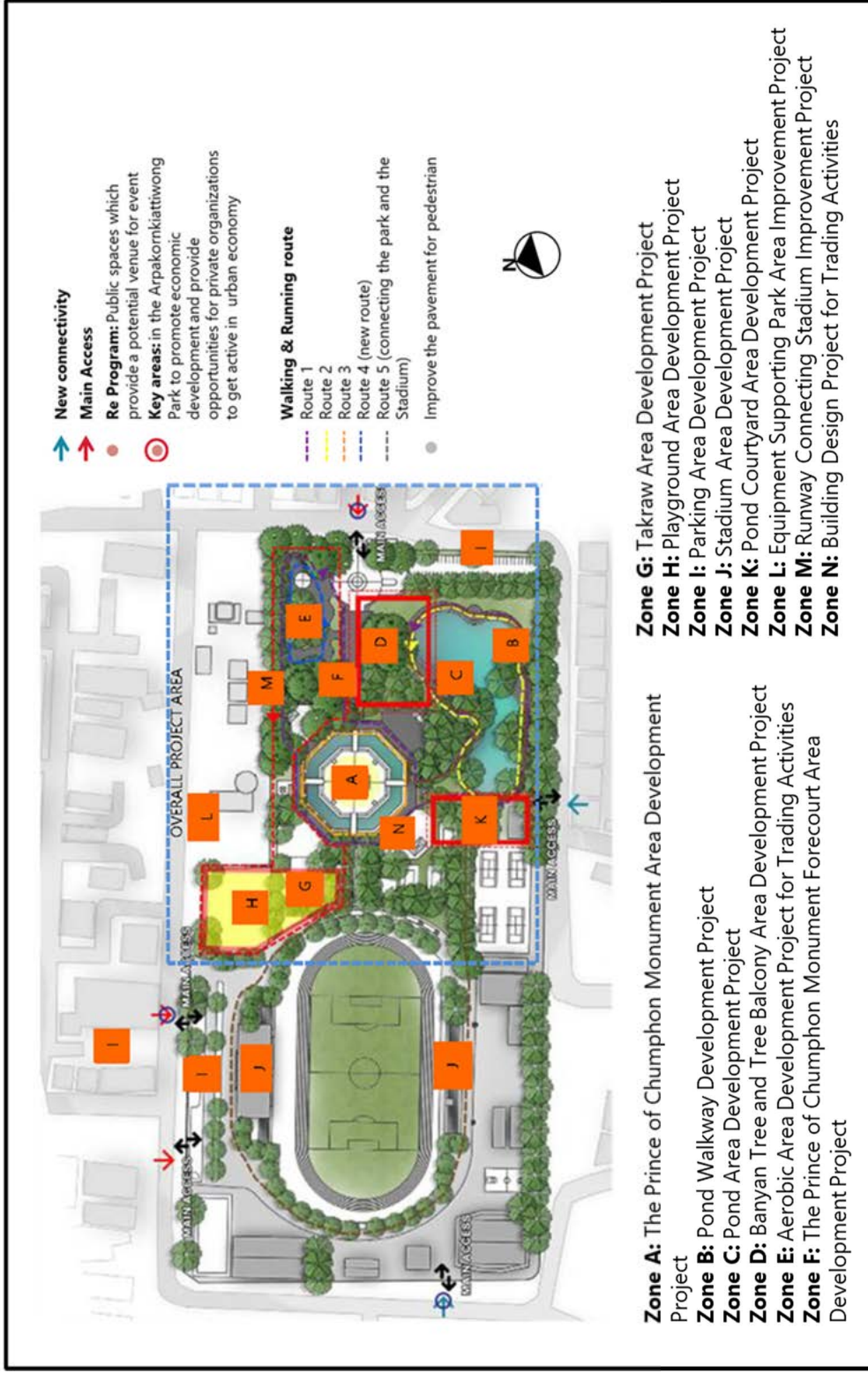
**Figure 1.3.25 Goal of Master Plan**

The goal of the master plan covers three aspects: economy, environment, and society. The economic aspect refers to the sustainability of management systems, including the cost of operation and management for events and maintenance, as well as commercial use of the park. Also, the management system refers to the Tessaban's policy to promote the improvement of the park and the implementation of the master plan. The environmental aspect refers to ensuring the physical accessibility and flexible space suitable for any activities. Lastly, social aspect refers to enhancing the social accessibility for all ages and to promoting a space for community and social gathering.

To achieve its goals, the objectives of the master plan were determined as follows:

- To develop park areas into comfortable and attractive public spaces;
- To stimulate surrounding local economic activities and increase values of nearby lands in the future;
- To improve the quality of life in surrounding communities;
- To promote interaction and activities among people;
- To build cooperation between the public and private sector in public space management for public benefit; and
- To create a sense of mutual ownership among users, engaging people into public spaces and local activities voluntarily.

The master plan on the development of Arpakornkiattiwong Park and the Provincial Stadium has a total of 14 development zones from A to N, as shown in Figure 1.3.26.



Source: JICA Project Team

**Figure 1.3.26 Components of the Master Plan on Parks and Sports Facilities Improvement**

Thirty-four (34) sub-projects for all zones were developed under five development criteria: accessibility, activity, spatiality, aesthetic, and management. These sub-projects cover the following elements:

- Development of the landscape and optimization of activity areas;
- Design elements such as covered walkways, kiosks, and furniture such as light poles, trash bins, seats;
- Supporting system design including electrical system, water system, and security system; and
- Management guidelines.

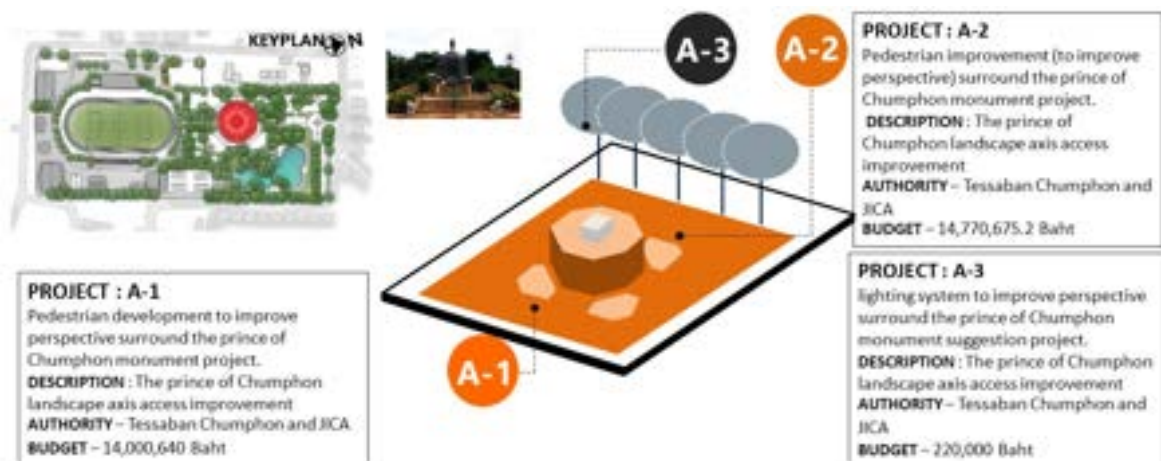
### 1) Zones and Projects

The details of the 14 zones and 34 sub-projects are summarized and illustrated as follows.

#### **Zone A: The Prince of Chumphon Monument Area Development Project**

This project aims to develop the area surrounding the Prince of Chumphon Monument to make it attractive, especially the courtyard, walkways, and running track. It consists of the following sub-projects:

- Project A-1 Development of landscape to improve the scenery of Krom Luang Chumphon Monument
- Project A-2 Improvement of pavement around Krom Luang Chumphon Monument
- Project A-3 Suggestions on lighting system around Krom Luang Chumphon Monument



Source: JICA Project Team

**Figure 1.3.27 Development Projects for Zone A**

#### **Zone B: Pond Walkway Development Project**

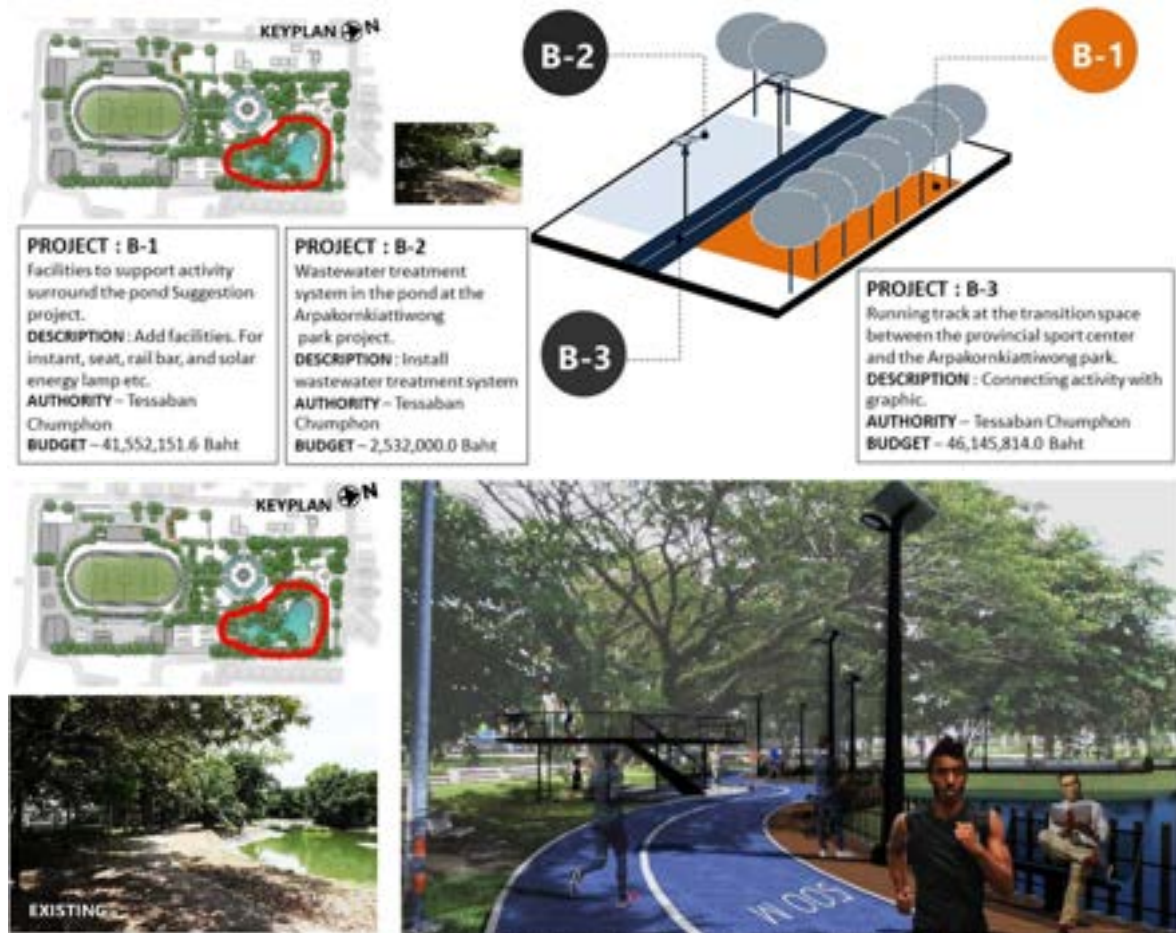
The objectives of the pond walkway development project are to expand running tracks and improve the pavement materials around the area. It consists of the following sub-projects:

- Project B-1 Suggestions on facilities to support activities around the pond
- Project B-2 Design of wastewater treatment system at the pond in



Arpakornkiattiwong Park

- Project B-3 Suggestions on running tracks to connect the Provincial Stadium and Arpakornkiattiwong Park



Source: JICA Project Team

**Figure 1.3.28 Development Projects for Zone B**

**Zone C: Pond Area Development Project**

The objectives of this project are to design and develop a recreational landscape consisting of a walkway connecting ponds, illuminated seating, and CCTV installation. Design and installation of the facade spray water (increase humidity) and electric flower fields that use solar power are also included. It consists of the following sub-projects:

- Project C-1 Recreational area design around the pond
- Project C-2 Suggestions on installing lighting systems for decorating the pond area.



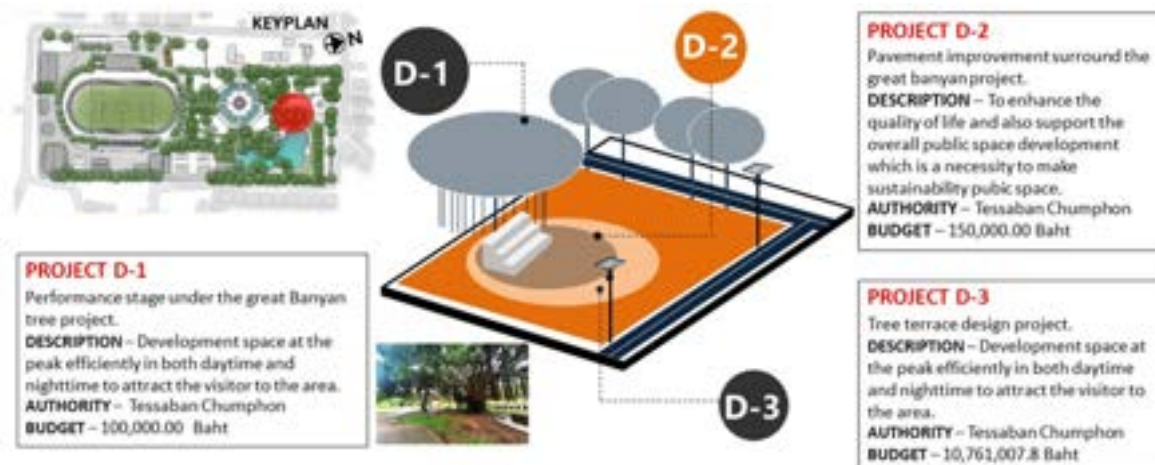
Source: JICA Project Team

**Figure 1.3.29 Development Projects for Zone C**

**Zone D: Banyan Tree and Tree Balcony Area Development Project**

This project aims to develop Zone D as the attraction of the park. The area will be developed as the check-in point, meeting point, and activity area on special occasions. It consists of the following sub-projects:

- Project D-1 Stage installation design and lighting under the banyan tree
- Project D-2 Development of pavement around the banyan tree
- Project D-3 Tree balcony area design for recreational purposes







Source: JICA Project Team

**Figure 1.3.30 Development Projects for Zone D**

**Zone E: Aerobic Area Development Project for Trading Activities**

This project aims to accommodate 3 types of activities: aerobics dance, sepak takraw, and running. This project includes the improvement of pavement materials, graphics that allocate the space for festival kiosks and aerobics area, and consists of the following sub-projects:

- Project E-1 Development of a pavilion to accommodate various activities.
- Project E-2 Development of an herb garden to support sustainable lifestyles
- Project E-3 Development of activity areas and areas for vendors to support future management.

<p><b>PROJECT E-1</b>                  Sala for multi-purpose improvement project.  <b>DESCRIPTION</b> -Study and Design Project improve social space and public space for the Health and well-being.  <b>AUTHORITY</b> - Tessaban Chumphon and JICA  <b>BUDGET</b> - 2,156,931.0 Baht</p>	<p><b>PROJECT E-2</b>                  Herb garden development to support sustainability at the back yard of the Arpakornkiattiwong project.  <b>DESCRIPTION</b> -implant the vertical herb garden in the aerobic zone boundary at the Arpakornkiattiwong park.  <b>AUTHORITY</b> - Tessaban Chumphon and community  <b>BUDGET</b> - - Baht</p>	<p><b>PROJECT E-3</b>                  Events park and commercial zone development to support management project.  <b>DESCRIPTION</b> -Event and commercial spatial management at the Arpakornkiattiwong park.  <b>AUTHORITY</b> - Tessaban Chumphon, The Thai Chamber of Commerce of Chumphon, Tourism Authority of Thailand of Chumphon  <b>BUDGET</b> - 3,093,344.4 Baht</p>
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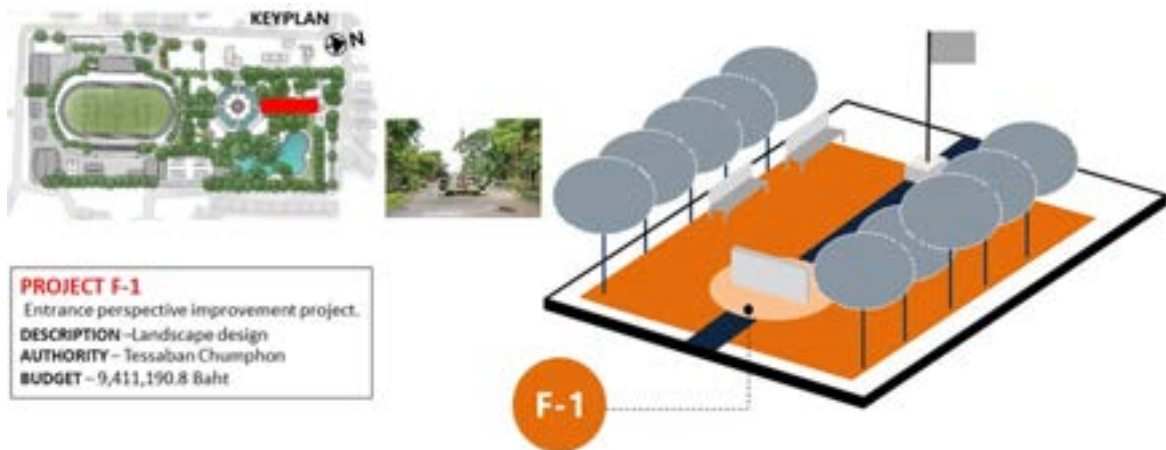
Source: JICA Project Team

**Figure 1.3.31 Development Projects for Zone E**

**Zone F: The Prince of Chumphon Monument Forecourt Area Development Project**

The project aims to develop the forecourt area of the Krom Luang Chumphon Monument. Originally, the area is divided in to three sections by flowerpots, so it is necessary to connect the divided areas and improve pavement materials. Zones F and D are connected as an activity space up to the forecourt of the monument, including the activity area, with the banyan tree in the center. Zone F should also be connected to the running track in Zone B which lacks proper management, needs to be developed and standardized right through between Zone F and B. Zone F has the following sub-project:

- Project F-1 Development of the entrance area to enhance the scenery



**PROJECT F-1**  
 Entrance perspective improvement project.  
 DESCRIPTION – Landscape design  
 AUTHORITY – Tessaaban Chumphon  
 BUDGET – 9,411,190.8 Baht





Source: JICA Project Team

**Figure 1.3.32 Development Project for Zone F**

**Zone G: Takraw Area Development Project**

This area supports aerobics in the morning and takraw in the evening. This area is located on the side of the playground (Zone H), and both zones share the playground. From the survey, this area should be renovated to become an exercise area for the elderly as well. Zone G has the following sub-project:

- Project G-1 Exercise areas design for the elderly



Source: JICA Project Team

**Figure 1.3.33 Development Project for Zone G**

### Zone H: Playground Area Development Project

At present, the playground has pre-installed equipment and is divided into areas for children and adult. There is an area on the margins, the remaining areas that are not suitable for use. The project for Zone H consists of the following sub-projects:

- Project H-1 Activities Zone Design and Development
- Project H-2 Playground painting for better zoning of activities



Source: JICA Project Team

**Figure 1.3.34 Development Projects for Zone H**

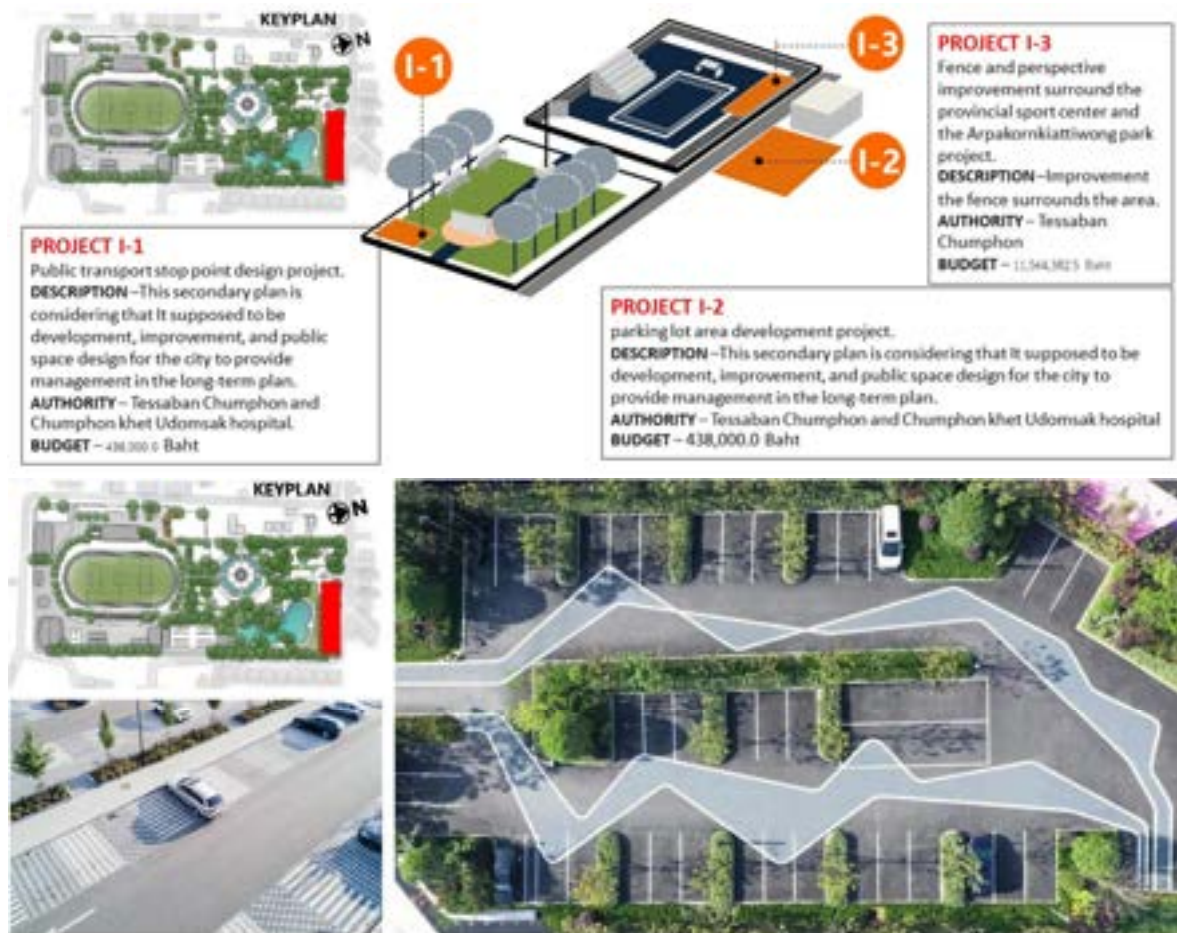
### Zone I: Parking Area Development Project

This area is surrounded by fences. There are two approaches to develop this area. The first approach is to make fences with plants to create green areas, for example, making an herb wall or a tree wall (Green wall). The second approach is to use fences for activities, which means creating productive activities with fences. There are unused edges connecting to the parking area. If provided with graphics, the park will become more attractive and open an entrance to make visitors want to visit the park by car. This is because inconvenient accessibility to the parking area and flooding in the parking after raining make visitors not to want to park there. The project for Zone I consists of the following sub-projects:

- Project I-1 Shuttle stop design
- Project I-2 Development of parking area to accommodate users



- Project I-3 Development of a safety fence and enhancement of the scenery around Arpakornkiattiwong Park and Provincial Stadium



Source: JICA Project Team

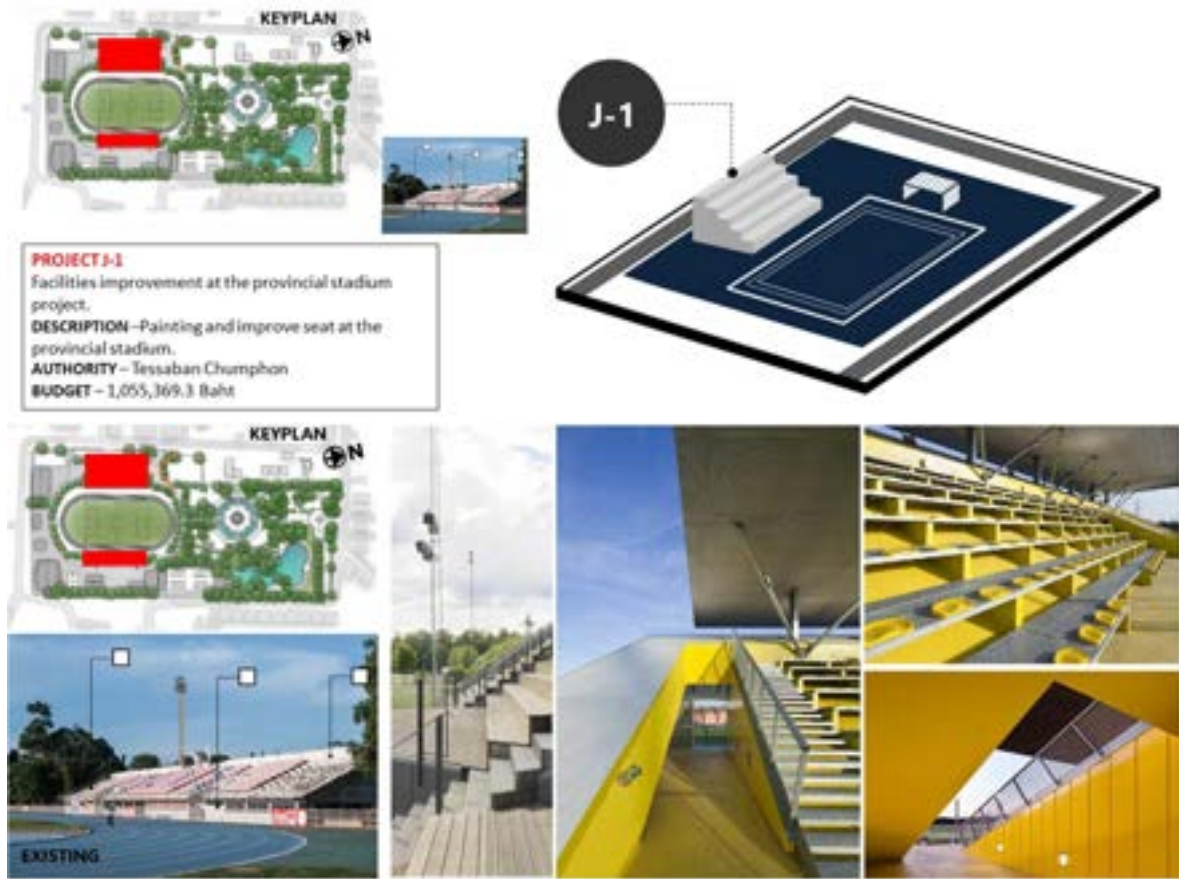
**Figure 1.3.35 Development Projects for Zone I**

### **Zone J: Stadium Area Development Project**

This project aims to renovate the front area or entrance of the Provincial Stadium to make it beautiful. This improvement will enhance the landmark of the park which will be located at the banyan tree. When entering the stadium from this entrance, people will see the stadium connected to the playground. There will be improvements in the courtyard which connects the park and the stadium.

A pavilion is located here and there is an empty space, so the pavilion can be improved to be used for commercial activities and others. From this entrance, visitors will find an open pavilion that is a multipurpose area. Zone I has the following sub-project:

- Project J-1 Development of facilities to accommodate the users of Provincial Stadium



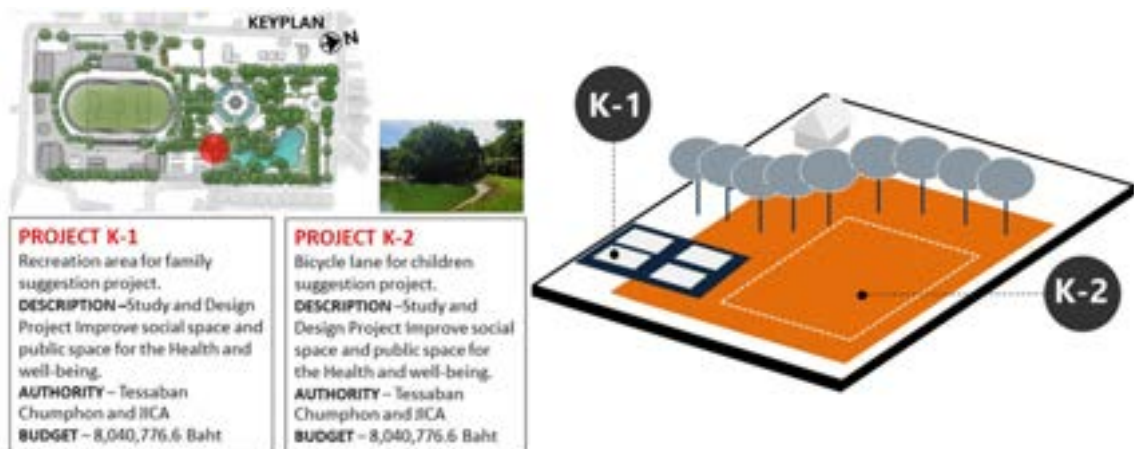
Source: JICA Project Team

**Figure 1.3.36 Development Project for Zone J**

**Zone K: Pond Courtyard Area Development Project**

The area will be renovated as a recreational space for family groups. It is also suggested to create a bicycle path connecting to the playground and other related area (Stadium side), especially for children. This project consists of the following sub-projects;

- Project K-1 Recreational area design for family groups
- Project K-2 Suggestions on bicycle tracks for children





Source: JICA Project Team

**Figure 1.3.37 Development Projects for Zone K**

### **Zone L: Equipment Supporting Park Area Improvement Project**

This project is to design and develop all park equipment, such as illuminated seats, lighting, service point, trash bins, check-in points, photography points, electrical lighting system design in the alternative energy system (solar cells), and installation of security system with security cameras (CCTV) at Arpakornkiattiwong Park. This project consists of the following sub-projects:

- Project L-1 Handbook for the management of parks and public spaces for the Supervisory Board
- Project L-2 Symbolic system design to provide important information for users
- Project L-3 Drainage system design to support the development of Arpakornkiattiwong Park
- Project L-4 Water system design controlled by the Internet to reduce costs of hiring staff to take care of Arpakornkiattiwong Park
- Project L-5 Electric lighting system design in the garden area
- Project L-6 Electric lighting design using alternative energy systems (solar cells) around running track in Arpakornkiattiwong Park
- Project L-7 Installation and design for security system with CCTV cameras around Arpakornkiattiwong Park
- Project L-8 Installation and design for internet distribution points around Arpakornkiattiwong Park





Source: JICA Project Team

**Figure 1.3.38 Development Projects for Zone L**

**Zone M: Running Track Connecting Stadium Improvement Project**

This project aims to develop a running track connecting Arpakornkiattiwong Park and the Provincial Stadium, which supports both users of the Provincial Stadium and runners using the park around Krom Luang Monument. The area will be designed to include paths for children, and for fast and slow joggers. Zone M has the following sub-project:

- Project M-1 Development of running tracks and pedestrian areas at Arpakornkiattiwong Park





Source: JICA Project Team

**Figure 1.3.39 Development Projects for Zone M**

**Zone N: Building Design Project for Trading Activities**

This project aims to design and develop the pavilion for commercial use and other purposes to create the identity and environment of the area. Zone N is connected to Zone K through a wooded courtyard where users can enjoy picnics. Furniture should be installed to serve as an activity area for family. The main idea is to figure out how to make the park more useful. Every area should be utilized to its full potential. Users who come to the hospital nearby must be able to enter the area for relaxation or for buying products. The project has the following sub-project:

- Project N-1 Development of the pavilion for commercial and multi-purposes





Source: JICA Project Team

**Figure 1.3.40 Development Project for Zone N**

## 2) Roadmap

The 34 sub-projects for 14 zones were elaborated in terms of project duration, budget estimates, and relevant organizations (see Table 1.3.8). They were also divided into the following three phases:

### (1) Short-term Development Projects (1-6 months)

Short-term projects refer to projects that require immediate action for supporting the urban development of the city. Furthermore, the end results should create a good image and enhance the use of the public space that:

- promotes quality of life;
- are in line with the development trend; and
- do not adversely affect the surrounding communities and comply with the area policy.

### (2) Mid-term Development Projects (1-2 years)

Mid-term projects refer to second-urgent projects that need to be developed and are needed in the design of urban public spaces to support future management.

### (3) Long-term Development Projects (3-5 years)

Long-term projects refer to recommended projects that improve the quality of life and promote the development of public spaces in the long term. These projects need to be implemented to promote sustainable public spaces.

**Table 1.3.8 Roadmap of Master Plan on Parks and Sports Facilities Improvement**

Project	Component	Organization	Duration			Budget Estimate		Total Budget (THB)
			Short-term (1-6 months)	Mid-term (1-2 years)	Long-term (3-5 years)	Design	Construction	
<b>Zone A: The Prince of Chumphon Monument Area Development Project</b>								
Project A-1 Development of landscape to improve the scenery of The Prince of Chumphon Monument	<ul style="list-style-type: none"> <li>Landscape design; including local plants and vegetation selection plan, maintenance plan, and drainage system</li> </ul>	Tessaban Mueang Chumphon				770,035	14,000,640	14,770,675
Project A-2 Improvement of pavement around the Prince of Chumphon Monument	<ul style="list-style-type: none"> <li>Detailed design of the pavement including layout, pattern, and material.</li> </ul>	Tessaban Mueang Chumphon				770,035	14,000,640	14,770,675
Project A-3 Suggestions on lighting system in the area of the Prince of Chumphon Monument	<ul style="list-style-type: none"> <li>Designing and installation of solar lighting</li> </ul>	Tessaban Mueang Chumphon				20,000	200,000	220,000
<b>Zone B: Pond Walkway Development Project</b>								
Project B-1 Suggestions on facilities to support activities around the pond	<ul style="list-style-type: none"> <li>Designing of garden element including a system of symbols, seats, littering points, etc.</li> <li>Modification of pavement materials</li> <li>Installation of guard rails</li> <li>Installation of electric light poles using solar energy.</li> <li>Construction of covered walkways</li> </ul>	Tessaban Mueang Chumphon				3,430,911	38,121,240	41,552,151

**Final Report, Vol. 2: Model City Projects**

Project	Component	Organization	Duration			Budget Estimate		Total Budget (THB)
			Short-term (1-6 months)	Mid-term (1-2 years)	Long-term (3-5 years)	Design	Construction	
Project B-2 Design of wastewater treatment system at the pond in Arpakornkiattiwong Park	<ul style="list-style-type: none"> <li>Design and installation of wastewater treatment system</li> </ul>	Tessaban Mueang Chumphon				132,000	2,400,000	2,532,000
Project B-3 Suggestions on running tracks to connect the area between Provincial Stadium and Arpakornkiattiwong Park	<ul style="list-style-type: none"> <li>Design and modification of running track to standardize track pavement and paving materials and allocation of lanes with graphics on the running tracks</li> <li>Development of running tracks and covered walkways</li> </ul>	Tessaban Mueang Chumphon				4,195,044	41,950,770	46,145,814
<b>Zone C: Pond Area Development Project</b>								
Project C-1 Recreational area design around the pond	<ul style="list-style-type: none"> <li>Design and development of recreational landscape consisting of a walkway connecting pond, illuminated seating, and CCTV installation spots.</li> </ul>	Tessaban Mueang Chumphon				933,607	9,827,400	10,761,007
Project C-2 Suggestions on installing lighting systems for decorating the pond area	<ul style="list-style-type: none"> <li>Design and installation of the facade spray water (increase humidity), electric flower fields that use solar power.</li> </ul>	Tessaban Mueang Chumphon				10,000	45,000	55,000
<b>Zone D: Banyan Tree and Tree Balcony Area Development Project</b>								
Project D-1 Stage installation design and lighting under the banyan tree	<ul style="list-style-type: none"> <li>Stage design and lighting system and lighting under the banyan tree.</li> </ul>	JICA (pilot project)				100,000	-	100,000

Project	Component	Organization	Duration			Budget Estimate		Total Budget (THB)
			Short-term (1-6 months)	Mid-term (1-2 years)	Long-term (3-5 years)	Design	Construction	
Project D-2 Detailed design of Pavement Development	<ul style="list-style-type: none"> <li>Detailed design of the pavement including layout, pattern, and material.</li> </ul>	JICA (Pilot project)				150,000	-	150,000
Project D-3 Tree balcony area design for recreational purposes	<ul style="list-style-type: none"> <li>Tree balcony design and detailed design</li> <li>Architecture and engineering design consisting of plan, elevation, section details</li> <li>Construction of Tree balcony</li> </ul>	Tessaban Mueang Chumphon				933,607	9,827,400	10,761,007
<b>Zone E: Aerobics Area Development Project for Trading Activities</b>								
Project E-1 Development of pavilion to accommodate various activities	<ul style="list-style-type: none"> <li>Development and design of aerobics pavilion and details</li> <li>Architecture and engineering design consisting of details on plan, elevation, and section</li> <li>Green walls</li> </ul>	Tessaban Mueang Chumphon				187,131	1,969,800	2,156,931
Project E-2 Development of herb garden to support sustainable lifestyles	<ul style="list-style-type: none"> <li>Green walls</li> </ul>	Tessaban Mueang Chumphon, Surrounding community				-	-	-
Project E-3 Development of activity areas and areas for vendors to support future management	<ul style="list-style-type: none"> <li>Detailed design consists of material determination.</li> <li>Allocation of activity areas</li> <li>Activity area layout (detailed design)</li> <li>Development of courtyard consisting of pavement, pavement materials, elements for supporting trading areas</li> </ul>	(1) Tessaban Mueang Chumphon (2) Thai Chamber of Commerce (3) Sports Authority of Thailand, Chumphon Province				161,264	2,932,080	3,093,344

**Final Report, Vol. 2: Model City Projects**

Project	Component	Organization	Duration			Budget Estimate		Total Budget (THB)
			Short-term (1-6 months)	Mid-term (1-2 years)	Long-term (3-5 years)	Design	Construction	
<b>Zone F: Prince of Chumphon Monument Forecourt Area Development Project</b>								
Project F-1 Development of the entrance area to enhance the scenery	<ul style="list-style-type: none"> <li>Detailed design consists of material determination.</li> <li>Allocation and design of activity areas and event space to be consistent with the design for overall concept (detailed design)</li> <li>Development of patio area that consists of standardized pavement materials</li> </ul>	Tessaban Mueang Chumphon				490,630	8,920,560	9,411,190
<b>Zone G: Takraw Area Development Project</b>								
Project G-1 Exercise areas design for the elderly	<ul style="list-style-type: none"> <li>Detailed design consists of material determination.</li> <li>Allocation, layouts, and design of activity area (detailed design)</li> <li>Development of patio area consists of standardized pavement materials and add exercise equipment for the elderly</li> </ul>	Tessaban Mueang Chumphon				754,283	13,714,240.	14,468,523
<b>Zone H: Playground Area Development Project</b>								
Project H-1 Activities zone design and development	<ul style="list-style-type: none"> <li>Spatial plan including the increase of activity zones and the suitable pavement material for the playground.</li> </ul>	JICA (Pilot project)				100,000	-	100,000
Project H-2 Playground painting for better zoning of	<ul style="list-style-type: none"> <li>Layout of patterns and colors for activity zone at the playground.</li> </ul>	JICA (Pilot project)				200,000	-	200,000



Project	Component	Organization	Duration			Budget Estimate		Total Budget (THB)
			Short-term (1-6 months)	Mid-term (1-2 years)	Long-term (3-5 years)	Design	Construction	
activities								
<b>Zone I: Parking Area Development Project</b>								
Project I-1 Shuttle stop design	<ul style="list-style-type: none"> <li>Elements design in parking area, such as parking system, signs, and the layout of the shuttle stops within the area.</li> </ul>	(1) Tessaban Mueang Chumphon (2) Chumphon Khet Udomsak Hospital				38,000.	400,000	438,000
Project I-2 Development of parking area to accommodate users	<ul style="list-style-type: none"> <li>Detailed design consisting of dividing parking space with graphics showing the parking distance, symbolic pattern system on the floor</li> <li>Floor graphics painting and floor symbol system</li> </ul>	(1) Tessaban Mueang Chumphon (2) Chumphon Khet Udomsak Hospital				38,000.00	400,000.00	438,000
Project I-3 Development of the safety fence and enhancement of the scenery around the Arpakornkiattiwong Park and Provincial Stadium	<ul style="list-style-type: none"> <li>Detailed design of fence line consisting of fence style, color, material, size</li> <li>Development of fence line according to the detailed design</li> </ul>	Tessaban Mueang Chumphon				602,882	10,961,500	11,564,382
<b>Zone J: Stadium Area Development Project</b>								
Project J-1 Development of facilities to accommodate the users of Provincial Stadium	<ul style="list-style-type: none"> <li>Detailed design consisting of symbols on the running track</li> <li>Public toilet model</li> <li>Allocation of activity areas</li> <li>Identification (Spec), colors, and graphics to enhance the appearance of stadium</li> </ul>	Tessaban Mueang Chumphon				55,019	1,000,350	1,055,369
<b>Zone K: Pond Courtyard Area Development Project</b>								

**Final Report, Vol. 2: Model City Projects**

Project	Component	Organization	Duration			Budget Estimate		Total Budget (THB)
			Short-term (1-6 months)	Mid-term (1-2 years)	Long-term (3-5 years)	Design	Construction	
Project K-1 Recreational area design for family groups	<ul style="list-style-type: none"> <li>Site plan consisting of activity area division, floor leveling, seats, green space management model</li> <li>Glass house model design (detailed design) consisting of plan, elevation, section from the architecture and engineering drawings</li> <li>Development of green area around the courtyard beside the pond</li> <li>Adjustment of space level as seating</li> <li>Construction of greenhouse</li> </ul>	Tessaban Mueang Chumphon				697,601	7,343,175	8,040,776
Project K-2 Suggestions on bicycle tracks for children	<ul style="list-style-type: none"> <li>Site plan consisting of patterns children's bicycle track division, lane distance, paving materials, and floor graphics.</li> <li>Development of substrate texture and graphics painting on the floor</li> </ul>	Tessaban Mueang Chumphon				697,601	7,343,175	8,040,776
<b>Zone L: Equipment Supporting Park Area Improvement Project</b>								
Project L-1 Handbook for the management of parks and public spaces for the Supervisory Board	<ul style="list-style-type: none"> <li>Manual for the management of park and related areas design</li> </ul>	(1) Tessaban Mueang Chumphon (2) Private organization (3) Surrounding community				-	-	-



Project	Component	Organization	Duration			Budget Estimate		Total Budget (THB)
			Short-term (1-6 months)	Mid-term (1-2 years)	Long-term (3-5 years)	Design	Construction	
Project L-2 Symbolic system design to provide important information for users	<ul style="list-style-type: none"> <li>Symbolic system design within the park area</li> </ul>	Tessaban Mueang Chumphon				10,800	144,000	154,800
Project L-3 Drainage system design to support the development of Arpakornkiattiwong Park	<ul style="list-style-type: none"> <li>Design and Construction of Drainage system</li> </ul>	Tessaban Mueang Chumphon				264,000	4,800,000	5,064,000
Project L-4 Water system design controlled by the Internet to reduce costs of hiring staff to take care of Arpakornkiattiwong Park	<ul style="list-style-type: none"> <li>Design and construction of Internet of Things to control water system (IoT)</li> </ul>	Tessaban Mueang Chumphon				-	-	-
Project L-5 Electric lighting system design in the garden area	<ul style="list-style-type: none"> <li>Design and installation of lighting systems</li> </ul>	Tessaban Mueang Chumphon				-	-	-
Project L-6 Electric lighting design using alternative energy systems (solar cells) around running track area in Arpakornkiattiwong Park	<ul style="list-style-type: none"> <li>Lighting system design promoting alternative energy for smart city, such as illuminated seating design and solar-powered charging stations at various spots in the park</li> </ul>	Tessaban Mueang Chumphon				93,500	1,700,000	1,793,500

**Final Report, Vol. 2: Model City Projects**

Project	Component	Organization	Duration			Budget Estimate		Total Budget (THB)
			Short-term (1-6 months)	Mid-term (1-2 years)	Long-term (3-5 years)	Design	Construction	
Project L-7 Installation and design for security system with CCTV cameras around Arpakornkiattiwong Park	<ul style="list-style-type: none"> <li>Design and installation of security systems such as security cameras (CCTV)</li> </ul>	Tessaban Mueang Chumphon				3,515	63,920	67,435
Project L-8 Installation and design for internet distribution points around Arpakornkiattiwong Park	<ul style="list-style-type: none"> <li>Design and installation of wireless internet system and internet distribution spots</li> </ul>	Tessaban Mueang Chumphon				38,500	700,000	738,500
<b>Zone M: Running Track Connecting Stadium Improvement Project</b>								
Project M-1 Development of running tracks and pedestrian areas at Arpakornkiattiwong Park	<ul style="list-style-type: none"> <li>Circulation (routes) design; including dimensions, size, graphics, signage material (landscape drawing and 1-114engineering drawing)</li> <li>Routes and pavement design</li> </ul>	Tessaban Mueang Chumphon				3,985,291	41,950,440	45,935,731
<b>Zone N: Building Design Project for Trading Activities</b>								
Project N-1 Development of the pavilion for commercial and multi-purposes	<ul style="list-style-type: none"> <li>Architecture and engineering design consisting of plan, elevation</li> <li>Renovation of the pavilion (KIOSKS) to support leisure and commercial activities</li> </ul>	Tessaban Mueang Chumphon				115,500	2,100,000	2,215,500
<b>Total Budget</b>						<b>19,978,756</b>	<b>236,816,330</b>	<b>256,795,086</b>

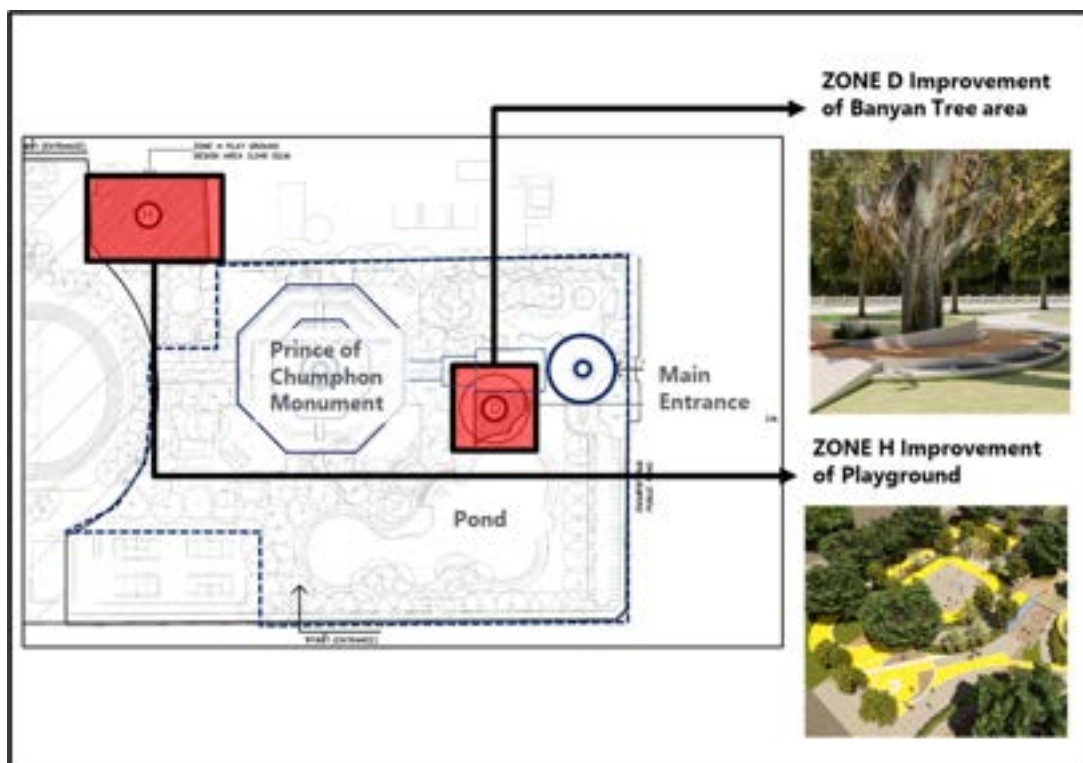
Source: JICA Project Team

### 1.3.6 Selection of Implementation Elements for JICA's Pilot Project (Phase 2)

As described in the previous section, 34 sub-projects under 14 development zones of Arpakornkiattiwong Park and the Provincial Stadium were formulated. The master plan will be completely implemented with an estimated total budget of THB258,245,093. The following criteria were set to select the implementation elements for JICA's pilot project (Phase 2):

- The selected projects will be of benefit to the local communities.
- The selected projects can be replicated in other areas and are concrete.
- Timeline of the selected projects including construction fit with the project's period.
- The costs lie within the budget of JICA.
- The selected projects will give opportunities for the Tassaban to gain the potential budget support or further investments from relevant organizations.

The master plan and proposed projects were presented to the Pilot Project Team (PPT) to get a consensus on the elements to be implemented as JICA's pilot projects. As a result, Zone D (banyan tree area) and Zone H (Playground area), which are shown in Figure 1.3.41, were selected in the third PPT meeting (PPT3).



Source: JICA Project Team

**Figure 1.3.41 Location of Pilot Projects (Phase 2)**

Zone D banyan tree area was selected to prepare the detailed design and cost estimation, and construct to improve the area around the banyan tree, while only detailed design and cost estimation will be prepared for Zone H Playground area. Improvement of Zone D includes the construction of stage, improvement of landscape, and improvement of the drainage and lighting systems. Universal design, daily and multifunctional uses, and serving

provincial events were highly considered in the design and construction. The improvement of Zone H includes the renovation of playground, design of playground equipment, and supportive plan. The output of Zone H project is expected to serve as a potential basis for Tessaban Mueang Chumphon to request fiscal budget from relevant organizations. This zone aims to provide suitable playground and recreational area for different ages; especially supporting family activities and children development.

The details of the JICA pilot project for implementation (Phase 2) are summarized in Table 1.3.9.

**Table 1.3.9 Implementation Components of JICA’s Pilot Project (Phase 2)**

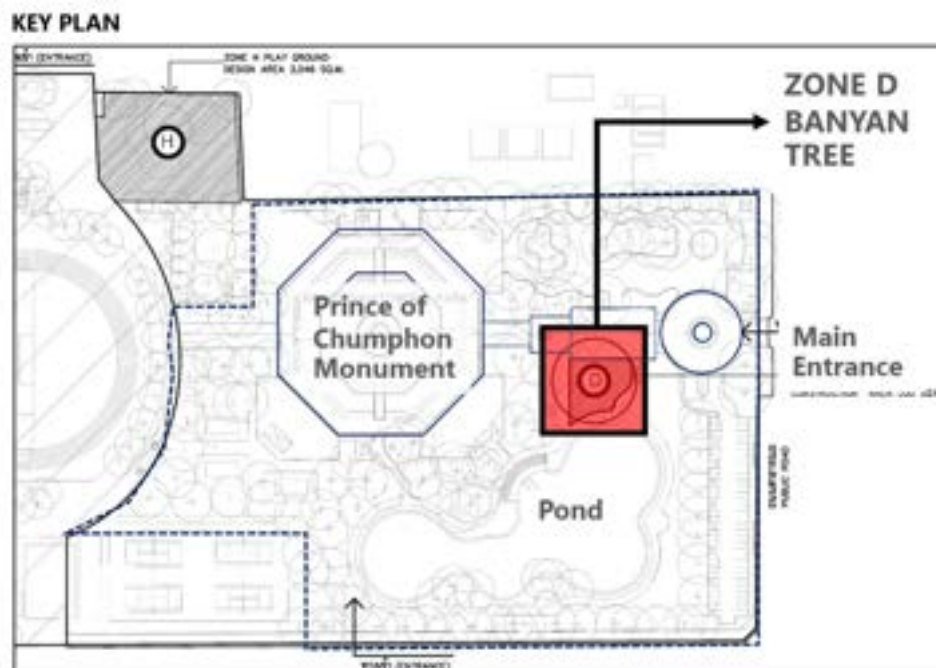
Component	Detailed Design	Construction
<b>Zone D: The Improvement of Banyan Tree Area</b>		
Stage design and installation under the consideration of universal design concept		
Landscape design and improvement		
Engineering system (drainage system and lighting system)		
Suggestion plan for decoration		
<b>Zone H: Improvement of Playground Area</b>		
Design of playground area		
Design of playground equipment		
Design of supportive plan		

Source: JICA Project Team

In the next section, the details and outputs of Zone D and Zone H projects are elaborated.

### 1.3.7 Zone D: Improvement of Banyan Tree Area

#### 1) Outline



Source: JICA Project Team

**Figure 1.3.42 Location of Zone D Improvement of Banyan Tree Area**

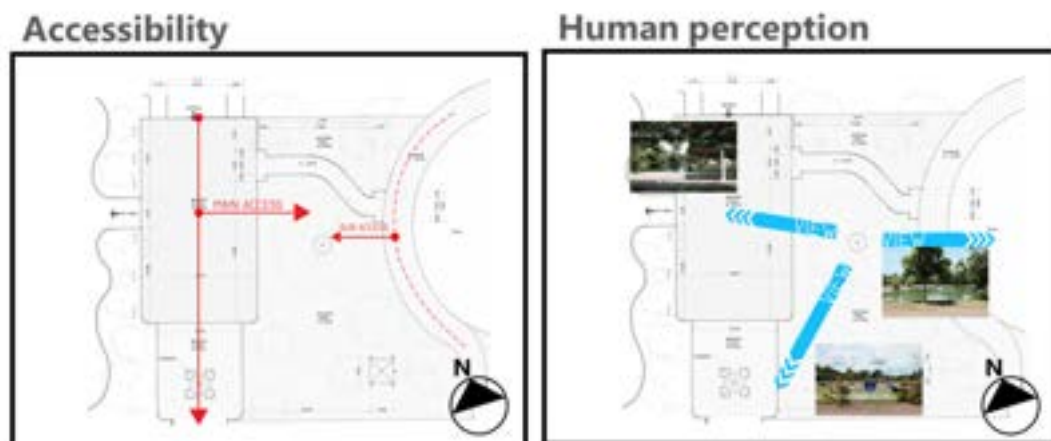
Zone D project is located on the left side from the main entrance of Arpakornkiattiwong Park and close to the pond and the Prince of Chumphon monument (see Figure 1.3.42). The main purpose of Zone D project is to create a multi-purpose area by creating new activities. Also, it aims to connect different activities/areas in the park and to develop creative space for organizing events by reimagining the whole park towards attractive spots and new destination.

For the expected outcomes, it is expected to provide a space for events, support recreational activities, develop the new destination (check-in point), and increase the brightness of the park.

## 2) Site Analysis

The main goal of this improvement of Banyan Tree Area is to create a multipurpose space for recreational and event activities. The good perception and image of this space, as well as people's mobility, were focused on in this analysis. Hence, the analysis of Zone D considered the location, accessibility, human perception, climate, and lighting and drainage systems. This was to analyze the potential functions of this space and the linkage to other activities.

With the characteristics of Zone D, its highlight is the banyan tree which has lived for more than 100 years now. Currently, it was found that some parts of the tree are inclined while the aerial root is getting overgrown. However, this aerial root also has potential to provide shade. In the design perspective, the banyan tree can enhance the image of the park in terms of ecology, beauty, and landscape. With its location, moreover, the development of this zone can create a good perspective of the whole park.



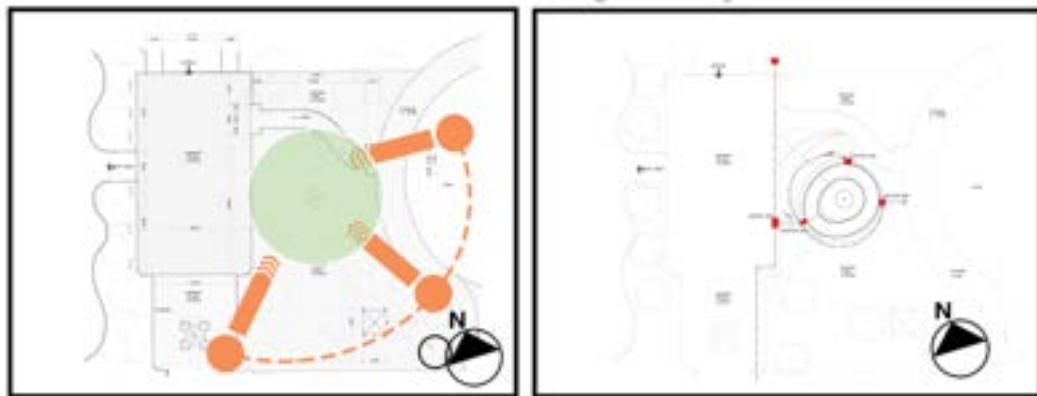
Source: JICA Project Team

**Figure 1.3.43 Actual Accessibility (Left) and Users' Perception of Accessibility (Right)**

There are two access points to Zone D; one is from the main entrance and another one is from the pond area. As the main access is close to the main entrance leading to the Prince of Chumphon monument, this zone can be a landmark or an attractive spot to convince the visitors to spend more time in the park. For the minor access, it can serve those who visit to exercise, such as walking and running, and to relax.

In this zone, visitors can observe several activities in the park. In the west side of Zone D,

there is an aerobics yard where most people can enjoy aerobics or any exercises. In the east side, there is a pond which gives a good ambience and relaxed feeling. In the south is the Prince of Chumphon monument.

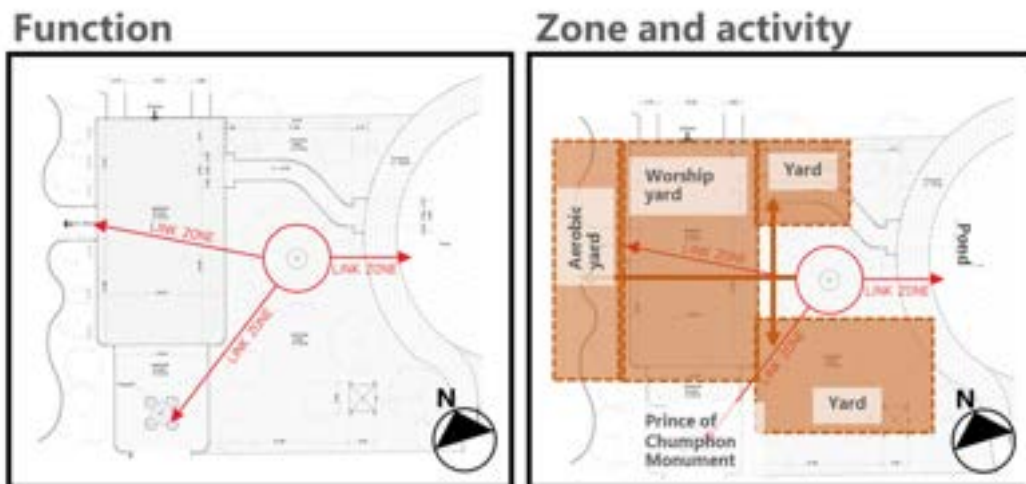


Source: JICA Project Team

**Figure 1.3.44 Shaded Area (Left) and Lighting and Drainage System (Right)**

Even though the banyan tree can protect visitors from sunlight and cool this zone, this area does not get the most out of its potential. This is because the site gradation is poor, and the lawn is not maintained, making it unsuitable for any activities.

During heavy rains, the area gets flooded, turning the lawn into a swamp. This makes people avoid walking around the banyan tree and use other paths instead. Also, at night, there is no light, which could make people feel unsafe.



Source: JICA Project Team

**Figure 1.3.45 Function (Left) and Zone and Activity (Right)**

With the above analysis, one can see both pros and cons of this zone. The function of this zone should be improved especially the landscape, like site gradation to develop proper spaces for activities. The site also has a potential to link with other activities due to its access points and to improve the image of the park. Also, the lighting system will not only enhance the area's safety for those who use the park at night but will also support night-time activities in the park.



### 3) Design Considerations and Concept

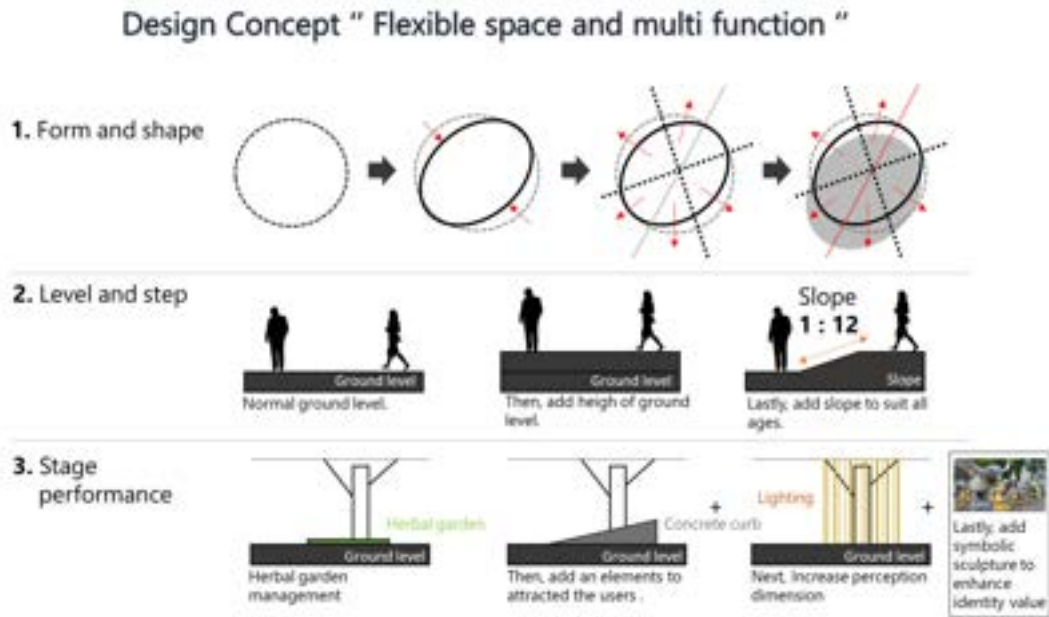


Source: JICA Project Team

**Figure 1.3.46 Design Considerations for Zone D**

From the site analysis, the improvement of Zone D consisted of six components for design consideration. The details of each component are summarized below.

- (1) **Economic dimension** aims to prepare spaces for events to support the local economy.
- (2) **New node** aims to create a new destination for local tourism by developing checkpoints or photo points. Also, the new node refers to a new meeting spot where people can gather for any activities.
- (3) **Performance** should be improved in terms of the whole public park by enhancing social interactions and recreation. To do this, new activity spaces should be created. Also, the improvement of this zone will enhance other surrounding activities, for instance, the prince of Chumphon, and the ambience of the public park.
- (4) **Extension of night-time activities:** By increasing the performance and activities of the park, night-time activities will be promoted. Such activities will not only increase the parks' attractiveness but also its safety.
- (5) **Connecting area** aims to link activities in the Arpakornkiattiwong Park with those in the Provincial Stadium by providing seats or rest space.
- (6) Usability for **all ages** should be considered. As the park serves all ages in Chumphon, a universal design should be considered to provide suitable facilities for everyone.



Source: JICA Project Team

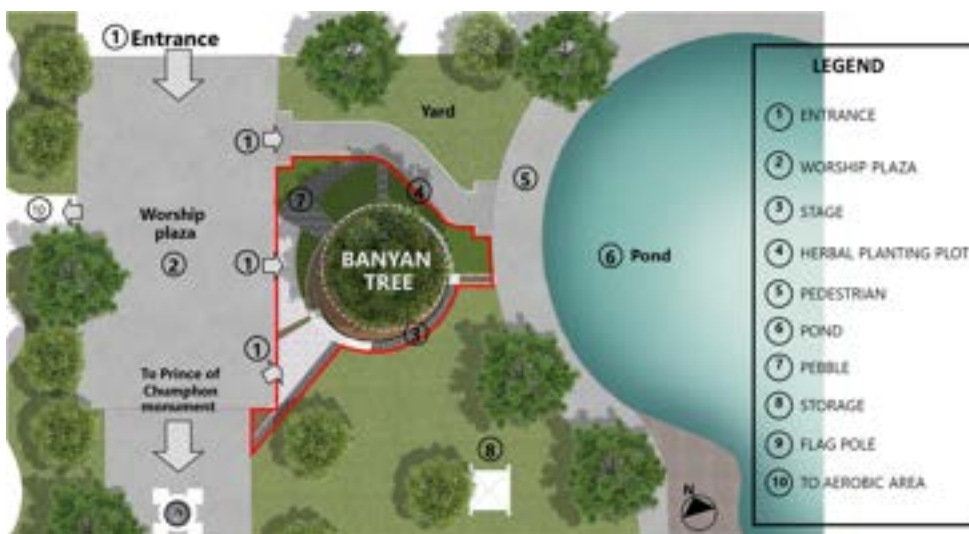
**Figure 1.3.47 Design Concept for Zone D**

The main design concept is the creation of flexible and multi-functional space. The shape of the stage transformed from circle to oval to fit the size and growth of the banyan tree. Also, this aims to create a scenic and useful space for all ages. The oval form is also flexible for supporting different activities and more cost-efficient maintenance of the lighting and drainage systems.

The heights of the stage and steps were designed to separate the stage functions and to create a new perception of space. Universal design was applied at the slope level to support all ages. Hence, the stage can now create new experiences for any users. Also, the stage is suggested to be decorated with swallow statues, representing the identity of Chumphon.

#### 4) Detailed Design

##### Layout of Zone D



Source: JICA Project Team

**Figure 1.3.48 Layout of Zone D**



As shown in Figure 1.3.48, Zone D covers an area of 350 m<sup>2</sup> surrounded by other park elements such as the pond and the statue plaza. As this zone turns into a swamp during the rainy season, the entire area was proposed to be elevated by 0.15 meter. The main elements of the detailed design are the installation of stage and improvement of landscape including pebble and lawn pavement. Besides these, the design plan includes lighting and drainage systems. A possible use of this zone is suggested in Figure 1.3.54.

### **Stage**

The stage covers five (5) main elements, namely stage, stage fins, space for an herb garden, steps, and slope, as shown in Figure 1.3.49. The details are summarized below.

- **Stage:** The stage was designed in a suitable size covering 102.10 sq.m. which is proper for recreation and events. The main material of the stage is wood plastic composite (size 15\*60 cm.) covering the entire stage. The width of the stage is 2.5 meters which is suitable for events and other activities. The stage has two levels connected by a small step and slope. The first level is 0.60 meter from the ground, while the second level is 0.75 meter, or 0.45 and 0.60 meters from the new ground levels.
- **Stage fins:** The stage fin is one of the highlights of the stage. The fins were designed to support recreational activities and highlight the beauty of the stage. The function of stage fins is mainly to be a backrest for those who sit or relax on the stage. Also, it can be a backdrop for any event. The fins embrace the banyan tree at different levels. The highest level is at 1.06 meters and the lowest level is at 0.15 from the stage body.
- **An herb garden** was prepared as a block and is wrapped around the stage as decoration. The plot is raised by 0.15 from the ground and was filled with soil and planted with local herbs.
- **The step** was designed at suitable levels to give access to the stage. There are two steps with a height of 0.30 meter each.
- **Slope:** There are two slopes. One is at the entrance functioning as an access for the elderly and those who use wheelchairs. Also, this slope will also serve during events to move the equipment on the stage. The height of this slope is at 0.45 meter connecting smoothly to the stage levels. The material of this slope is reinforced concrete. The second slope is located on the stage to connect its two levels. Both slopes are designed under universal design standard (1:12).

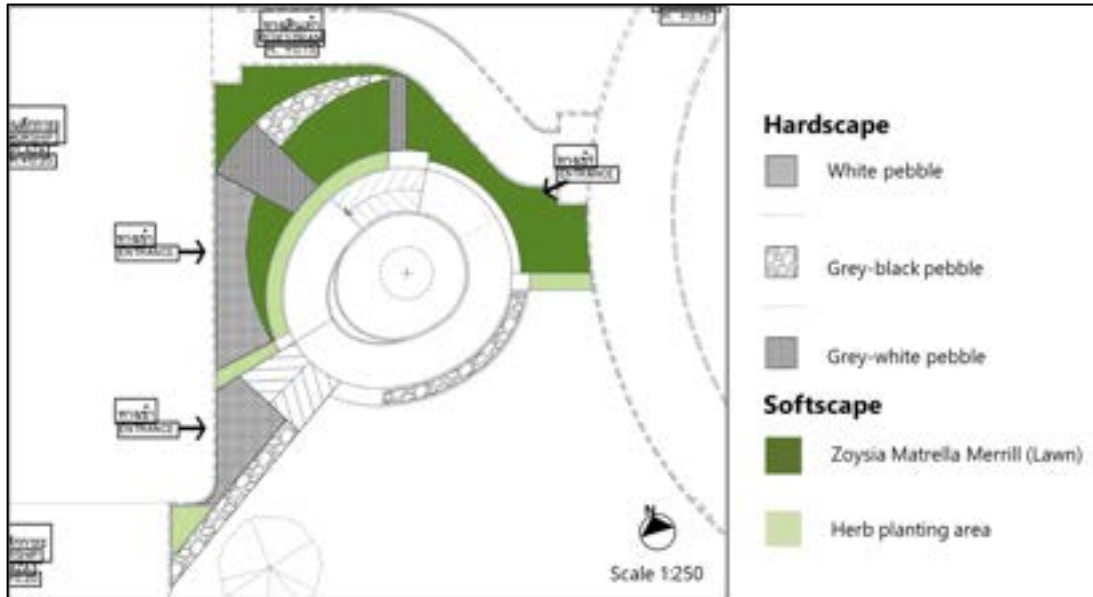


Source: JICA Project Team

**Figure 1.3.49 Stage Layout and Perspective**

**Landscape**

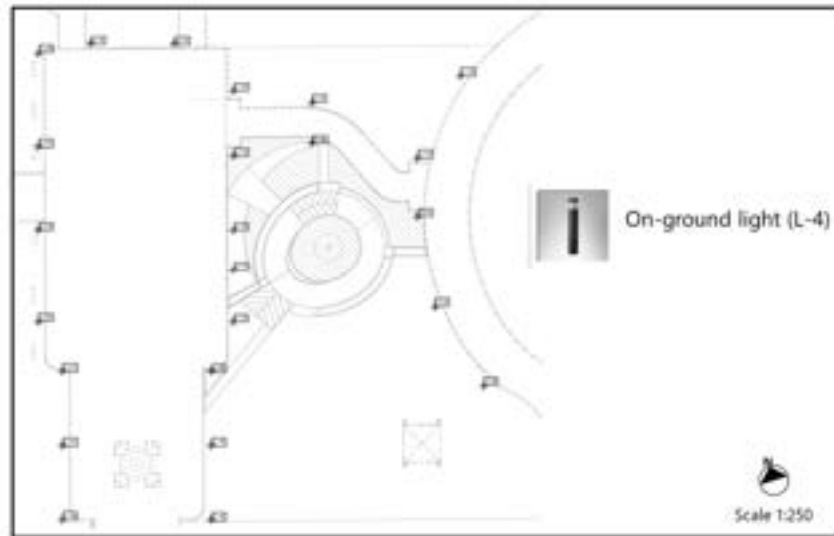
The existing landscape, especially the lawn in this zone, usually turns into a swamp. The landscape plan was to renew both the soft and hardscape of the site to allow the area to absorb water (Figure 1.3.50). The softscape will mainly be paved by *Zoysia Matrella Merrill* (lawn) with the area of 123.77 sq.m., while the hardscape will mainly be paved by pebbles in different colors with area of 98.44 sq.m. The softscape also includes the herb garden. Using pebble in hardscape allows the root to grow through the spaces.



Source: JICA Project Team

**Figure 1.3.50 Landscape Plan**

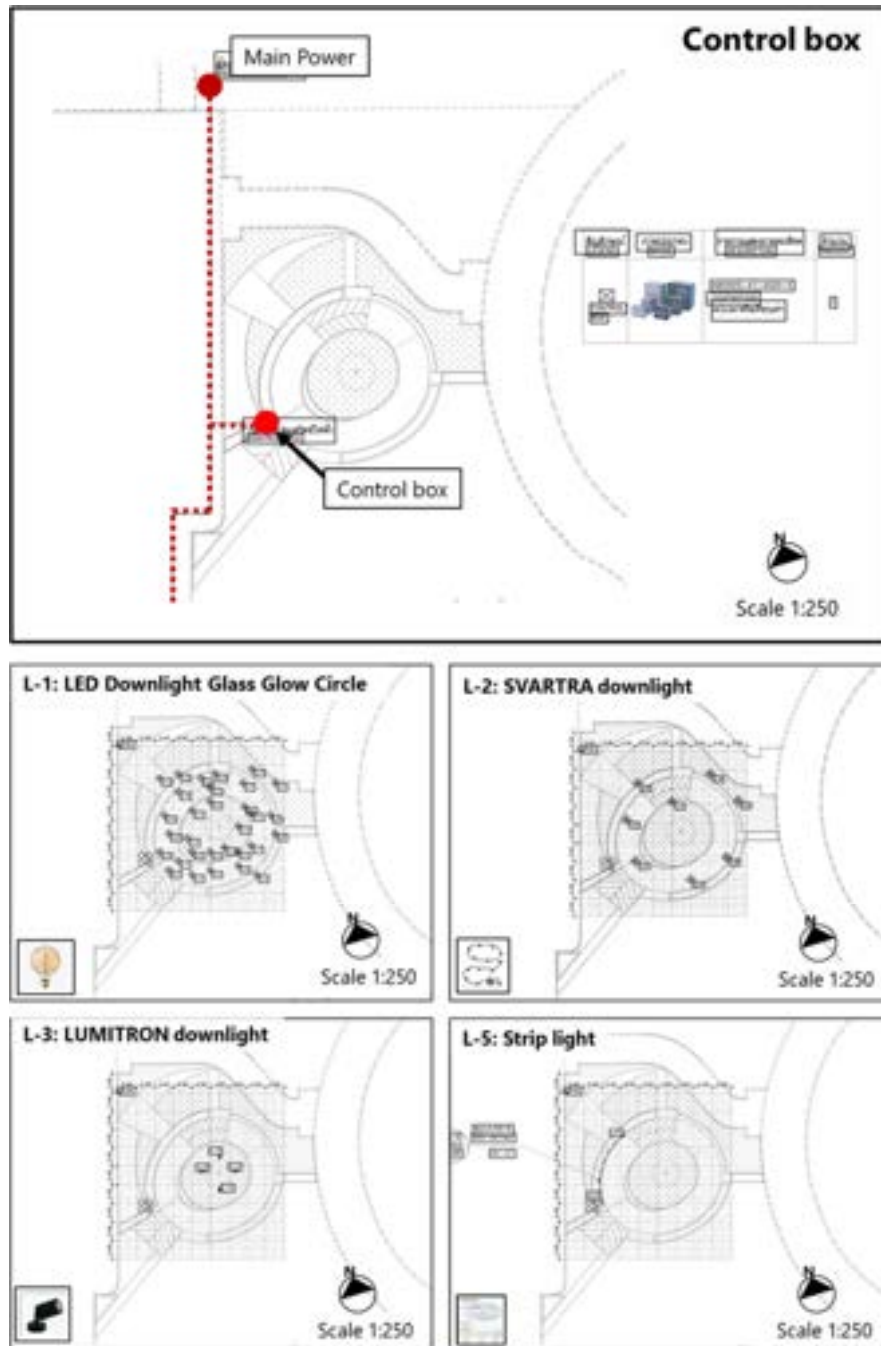
## Lighting and Drainage Systems



Source: JICA Project Team

**Figure 1.3.51 Lighting Surrounding Pilot Project Site**

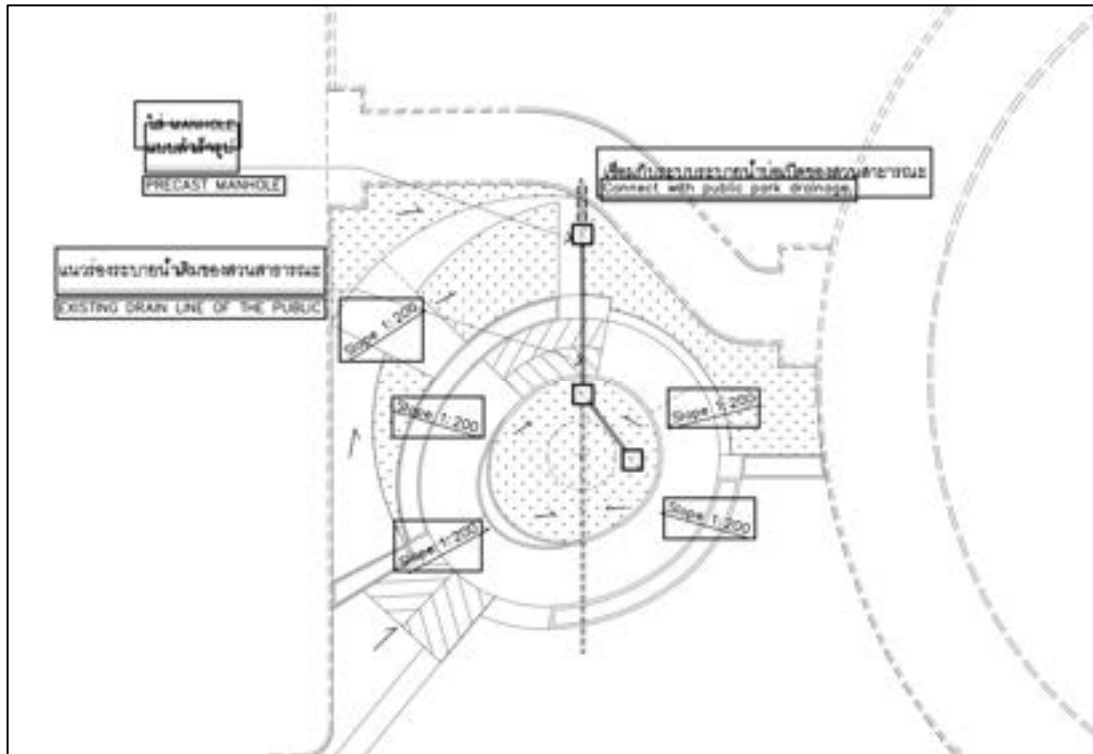
The lighting plan was prepared not only for the site but also the surrounding areas to improve the ambiance of the entire park. For the lighting surrounding the site, only the location of lights is designed, as shown in Figure 1.3.51. The lights should be installed every 5–8 m. This depends on the type of light and power of each piece of equipment. It is recommended to install on-ground lights to increase the brightness for the whole park.



Source: JICA Project Team

**Figure 1.3.52 Lighting System at the Pilot Project Site**

At the site, there is the main control box located next to the slope of the stage. This is to connect the lighting with the park's electrical system. The lighting plan was prepared with four (4) types: namely LED Downlight Glass Glow Circle, Svartra downlight, Lumitron downlight, and strip light. Meanwhile, the lighting for construction at the stage consists of 2 types, namely Lumitron downlight (4) and strip light. The Lumitron downlight will hang from the banyan tree, while the strip light will be installed around the stage. The switch of both lights will be connected to the control box. For the structure, the lightweight material was selected to save cost and for easy maintenance.

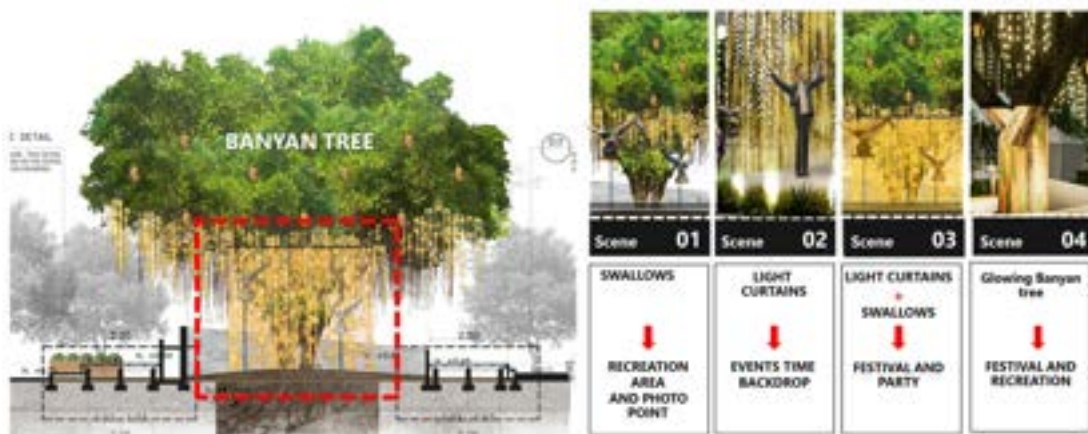


Source: JICA Project Team

**Figure 1.3.53 Drainage System at the Pilot Project Site**

The connection of the existing drainage system of the park and the slope of the site was studied. At the site, there are three manholes to drain the water. To protect the stage, the slope is at 1:200. The water mainly flows toward the banyan tree and the softscape before draining into the existing drainage system. For the pilot sub-project, these three manholes were reinstalled to increase the efficiency of the drainage system and to adjust to the roots of the banyan tree.

**Decoration Ideas (Design only)**



Source: JICA Project Team

**Figure 1.3.54 Ideas for Decorating the Banyan Tree Area**

The ideas for decorating the banyan tree were prepared as suggestions only (see Figure 1.3.54) and were excluded from the construction. The suggested decoration will use



downlights for the aerial roots and body of the banyan tree to make the tree glow and use swallow sculptures to decorate the stage. A lighting curtain can be used as a backdrop of the banyan tree to create a glow effect. This set-up is expected to create a photo point and to create the atmosphere for annual festivals or events and for recreational activities. This is an option for the Tessaban, the materials and installation could be moved depending on the situation. Thus, with these ideas Zone D can be utilized both in the daytime and nighttime (see the perspective shown in Figure 1.3.55).

### Daytime activity



### Nighttime activity



Source: JICA Project Team

**Figure 1.3.55 Perspective of Zone D during Daytime and Nighttime**

## 5) Construction

Before starting construction, bill of quantities (BOQ) and a safety plan which met JICA's criteria were prepared. A memorandum of understanding (MOU) for the detailed design and construction of Zone D (improvement of banyan tree area) was signed on 1 March 2021 to ensure the role sharing between JICA and Tessaban Mueang Chumphon. Key contents of this MOU are summarized as follows:

- **JICA Project Team** takes responsibility for the overall implementation of the detailed design for Zone D pilot sub-project based on the consensus from Tessaban Mueang

Chumphon.

- **Tessaban Mueang Chumphon** supports the detailed design for Zone D and its implementation, including prior field inspection, construction supervision, and inspection after the completion of the construction. The Tessaban is also responsible for maintenance, operation, and management of Zone D pilot sub-project after the completion of the construction.

### Construction Process

The construction of the Zone D banyan tree work items consisted of the construction preparation, construction of stage architecture, improvement of drainage and lighting systems, electrical work, and landscape work. The planned period of construction was from 8 March 2021 to 26 April 2021, or a total of 40 days. Due to COVID-19 restrictions, the construction was extended to the end of June 2021. This included project signage installation as an additional element. Therefore, the period of construction became 65 days in total. The construction plan was divided into four main periods, which are summarized in the following Table 1.3.10.

**Table 1.3.10 Construction Plan for Zone D Pilot Sub-project**

<b>Period of Construction</b>	<b>Construction Element</b>
Period 1: 8–21 March 2021	<ul style="list-style-type: none"> <li>• Site planning work; to mark the boundary area of stage construction by referring to the construction drawing to make an understanding between the designer, contractor, and Tessaban who own this place.</li> <li>• Damage prevention work; preparing the sheet to partition between construction area and the park</li> <li>• Site clearing; to remove the object and site grading the area.</li> <li>• Concrete beam for fin work; concrete beam for fin of the stage.</li> <li>• Masonry for precast concrete slabs; Masonry precast concrete slabs for fin of the stage.</li> </ul>
Period 2: 22 March–6 April 2021	<ul style="list-style-type: none"> <li>• Slab and topping works; To adjust the brick level before laid the slabs and then place reinforcement and pouring concrete.</li> <li>• Drainage and manhole work; Set the drainage line, dig the ground, place PVC drainpipe and manhole.</li> <li>• Fin masonry work; Masonry the brick as a background of the stage.</li> <li>• Corner beads with plastering; Corner beads with plastering is to set the level before plastering the fin for correct level and smooth the surface.</li> </ul>
Period 3: 7 April–1 May 2021	<ul style="list-style-type: none"> <li>• Finish tile of stage work; Finish tile work used mortar to adjust the floor level and used adhesive for tile to increase durability.</li> <li>• Loft fin polishing work; Set the appropriate plastering concrete surface level and coat the surface with loft color by following product instructions.</li> <li>• Electrical work; Install the lamp and connect the electrical system with the original main distribution board covers with a waterproof box.</li> </ul>
Extension Period: 2 May–end of June	<ul style="list-style-type: none"> <li>• Lawn, and gravel paving work; Site grading to the leveling out the landscape, filling tree soil in the herb planting</li> </ul>

	<p>plots, lawns, and gravels. In the gravel paving work, the dark and light gray pebble changed into a white pebble since this material is insufficient during the Covid-19 situation.</p> <ul style="list-style-type: none"><li>• Project's signage installation.</li></ul>
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Source: JICA Project Team

**Issues during construction causing delay and changes in some materials**

During the construction of Zone elements, several issues led to the delay and changes to the materials or parts. Details are as follows:

**Drainage system issue**

- During the construction, the drainage and manhole work was delayed because the ground level needed to be graded first and also to specify the slope and control the water flow. This issue was fixed and completed immediately after site gradation.

**Lighting system issue**

- The construction was running behind schedule because the downlight lamp did not match the material specifications. So, it needed to be changed. Also, the adapter for the strip light was unusable. Both issues were later resolved.

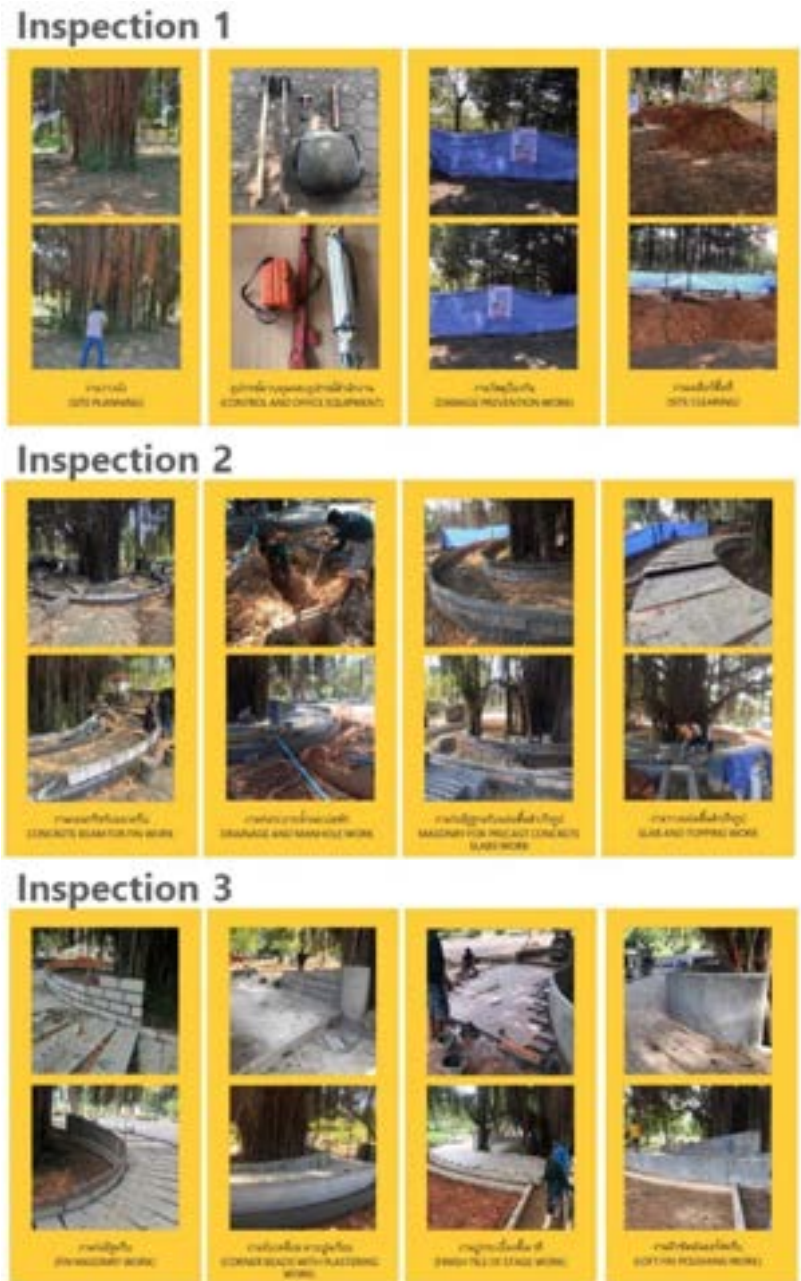
**Landscape issue**

- Before the last submission work, the gravel work was not completed because the material was insufficient due to delivery delays as a result of COVID-19 situation. As a result, the inspection process was delayed, and construction had to be extended. Therefore, solving this gravel issue, the dark and light gray pebble changed into a white pebble.

**Inspection**

The inspection approval was required and conducted three times according to the construction plan. These inspections were approved by the local contractor, the local consultant (design team), local engineer, construction supervisor, and Tessaban Mueang Chumphon. Figure 1.3.57 shows the inspection in each period.





Source: JICA Project Team

**Figure 1.3.56 Inspection Work for Zone D**

After the completion of construction, the final inspection was done on 19 May 2021. This was to inspect all elements of construction in terms of dimensions as planned, quality of construction, and utilization of system. Because the drainage system was already inspected by the local contractor, Tessaban Mueang Chumphon, and a local engineer, it was omitted from the final inspection. For the dimension, it should be noted that the discrepancy of dimension was +/- 20% from the detailed design. This was approved by Tessaban Mueang Chumphon, local engineer, and local contractor mainly because of the suitability of the construction.

### Completion of Construction

After reporting the completed construction in a PPT meeting, the construction was approved on 29 June 2021. This also included the project's signage installation.

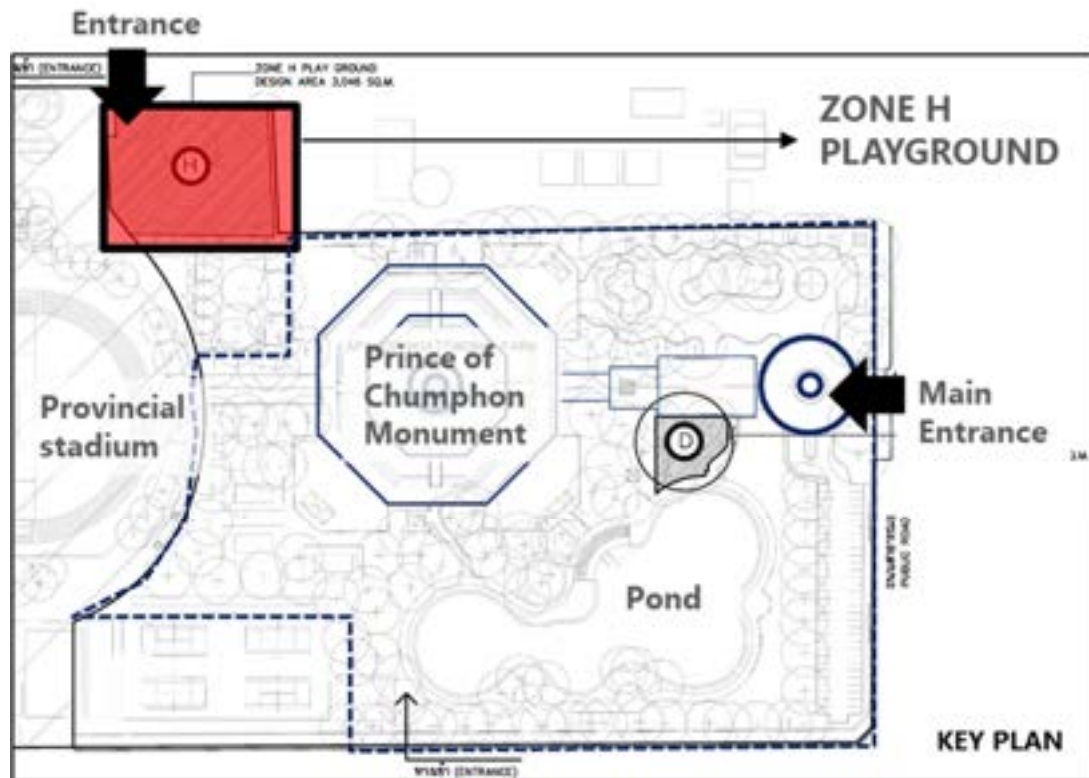


Source: JICA Project Team

**Figure 1.3.57 Completion of Construction of Zone D**

### 1.3.8 Zone H: Improvement of Playground Area

#### 1) Outline



Source: JICA Project Team

**Figure 1.3.58 Location of Zone H Improvement of Playground Area**

The Zone H (improvement of playground area) is located on the right side from the main entrance of the Arpakornkiattiwong park. It is next to the Provincial Stadium and the users can also access it from the entrance of the Stadium, as shown in Figure 1.3.58. The design area of Zone H covers 3,270 sq.m. The main purpose of Zone H (playground) is to develop an interactive space that suits all ages of children. To achieve this purpose, a multi-purpose space was designed for children.

It is expected to promote various activities for children in order to meet children's demands and to enhance children's development and family relationship toward a good quality of life and well-being. Also, it is expected to provide an attractive space to convince people to enjoy the public space and build life's experiences through social interactions and environment.

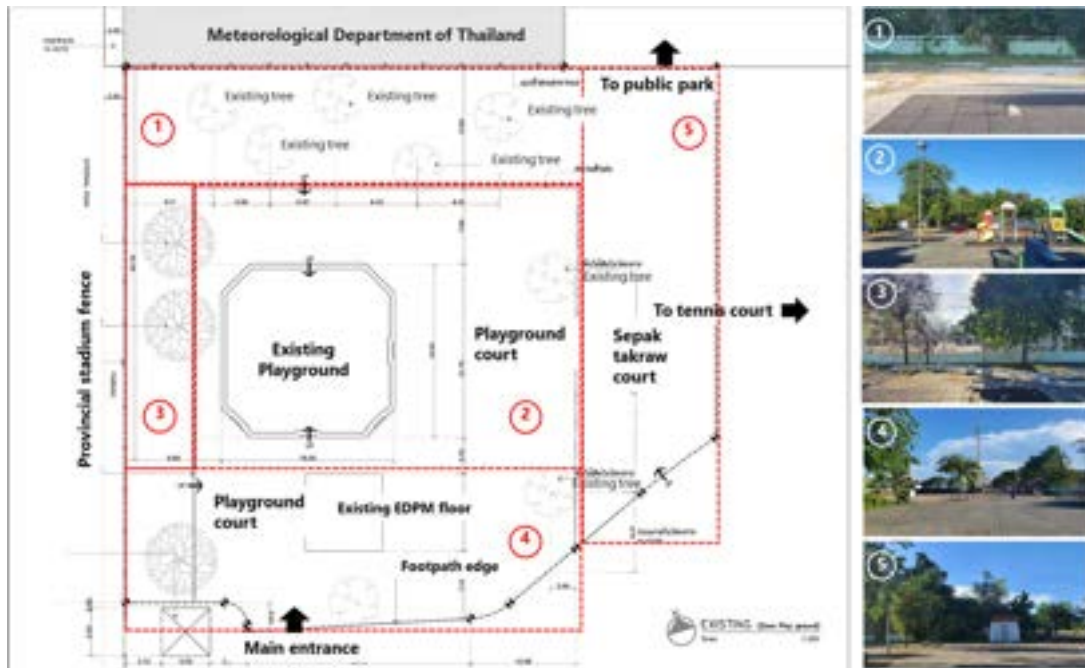
#### 2) Site Analysis

Because Zone H (playground area) is located in Arpakornkiattiwong Park and is close to the entrance of the Provincial Stadium, users can access it from either the main park entrance or the Provincial Stadium. Therefore, the potentials of its connectivity to both areas are the main focus of this analysis.

The site analysis of Zone H considered existing conditions, types of activities (active or passive), the relationship to surrounding area, use of space, heat levels, and main users.



The potential function of this space was analyzed and designed to increase the linkage of this zone to its surrounding areas. As a result, it is expected to maximize performances and capacity of this zone by creating interactive spaces for different users.

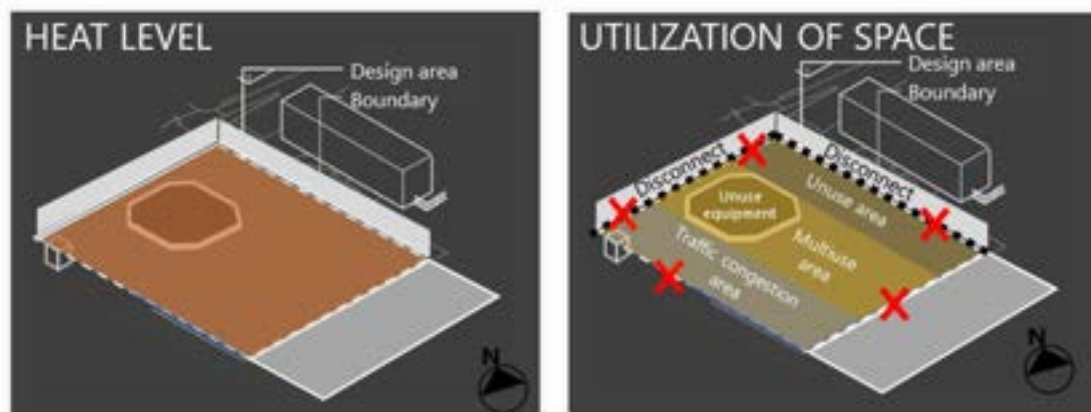


Source: JICA Project Team

**Figure 1.3.59 Existing Conditions in Zone H**

Zone H is relatively huge, covering an area of 3,270 sq.m. Figure 1.3.59 shows the existing conditions there. The key feature of Zone H is the playground with equipment (at the center) and the open playground court used for any activity.

This zone is linked to various areas like the sepak takraw court and tennis court. At the center, the existing playground equipment is likely to be insufficient and limited only for some groups of children. For the other areas, there are plenty of open spaces. There is no facility to serve activities for children or any user.



Source: JICA Project Team

**Figure 1.3.60 Site Analysis of Zone H**

The heat level during the day is highly stressed in this zone (Figure 1.3.60). Combining with

existing condition (existing tree), there are no cooling spaces to rest and relax because there is a lack of green spaces or any tree shade.

Looking at the utilization of this zone, at the north side, Zone H is blocked by a wall of the Meteorological Department of Thailand and part of the park fence. This creates a wasted/unused space. In the dark, it causes a concern of safety as there is no light. This can be considered as a blind area as there is no activity and no people using a space. At the bottom side of this zone, there is an entrance; however, the flow of users is limited by the floor levels and different types of pavements (brick, EPDM, and footpath edge).

Although this zone is surrounded by several activities, the space itself is hardly used, especially by children, the elderly, and the disabled, so the connectivity of this zone is relatively low. Most users just pass by. Noticeably, the capacity and potential of this zone are hardly maximized.

Considering that families are the main users of this zone, the space is not suitable for children. The open space can be utilized for passive activities like sitting, resting, and waiting for children playing elsewhere. The different floor levels and pavements should be improved to allow children, the disabled, and the elderly to access and enjoy the space. Trees should be added to provide shade and allow children to enjoy the playground equipment all day.

### 3) Design Concept



Source: JICA Project Team

**Figure 1.3.61 Design Concept for Zone H**

Based on the site analysis, the design concept of the improvement of the playground (Zone H) consists of six components, as shown in Figure 1.3.61. The details of each component are summarized below.

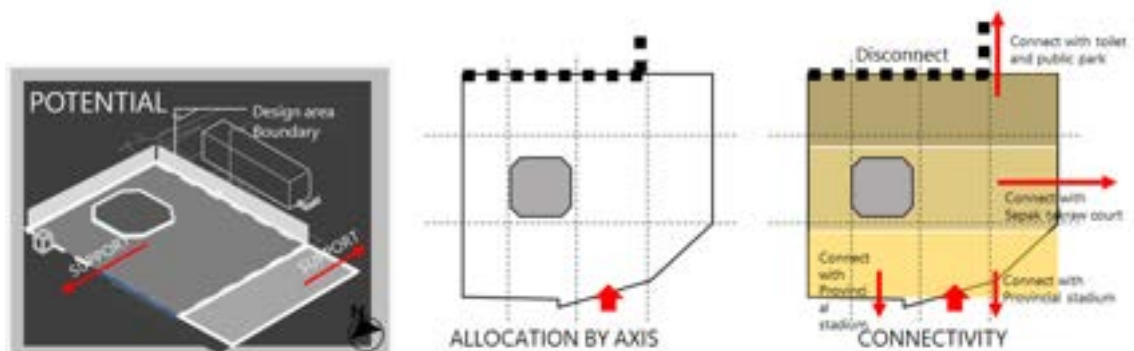
- (1) **Social interaction** is to enhance family relationships and to stimulate children's development. Children can interact and socialize with strangers and other

children to develop their communication skills, while the family can take time together in this zone.

- (2) **S.A.F.E** is considered as the foundation of safe areas for playing, consisting of four elements which are supervision, appropriate environment, falling on surface, and equipment maintenance.
- (3) The smooth **flow of space**, good circulation, and clear direction will help the users to access each facility. The good flow of space should be aligned with the zoning to avoid overlapping activities and create a good experience and image of this zone.
- (4) **Different types of activities** refer to multipurpose or multifunctional spaces. Various activities not only enhance the attractiveness of a space but also serve and meet the demands of different users. Different people of various ages can share the space for their preferred activities.
- (5) With a **sense of place** or of belonging, users will collectively act to protect the area, as they will feel as owners of the park. This will also enhance a sense of community to watch out, supervise, and prevent any crime or misbehavior in the area. This is also crucial to develop the area sustainably in the future.
- (6) The design of this zone **maximizes the performance of the park and provincial stadium** as both areas are connected by this zone. The design of this zone can link passive activities and increase the users of the park and provincial stadium.

#### 4) Conceptual Design

Regarding the above issues and design concepts, it is essential to reorganize the space to maximize its capacities and potentials of being a suitable playground. With the potentials of its location, Zone H can be positioned as a support area to serve surrounding activities. The connectivity of Zone H can be improved by linking activities in the park and in the provincial stadium. To illustrate, those who play in the park's sepak takraw court and use the stadium's running track can enjoy Zone H for rest and relaxation.

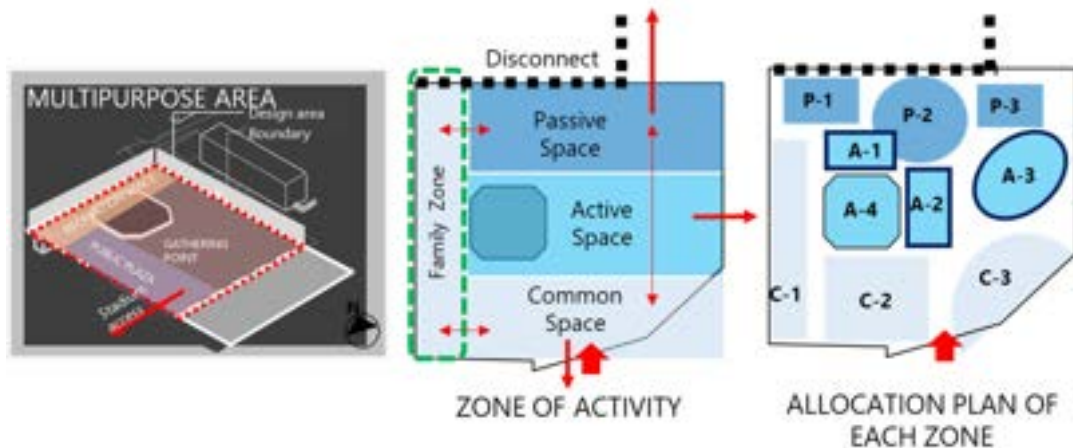


Source: JICA Project Team

**Figure 1.3.62 Allocation by Axis and Connectivity**

To increase its connectivity, the new axis of Zone H has been grounded to open and connect the space with activities in the provincial stadium and the park as shown in Figure 1.3.62. The connectivity should be upgraded to link with the other surrounding facilities; like Sepak

Takraw and public toilet and with the provincial properly.



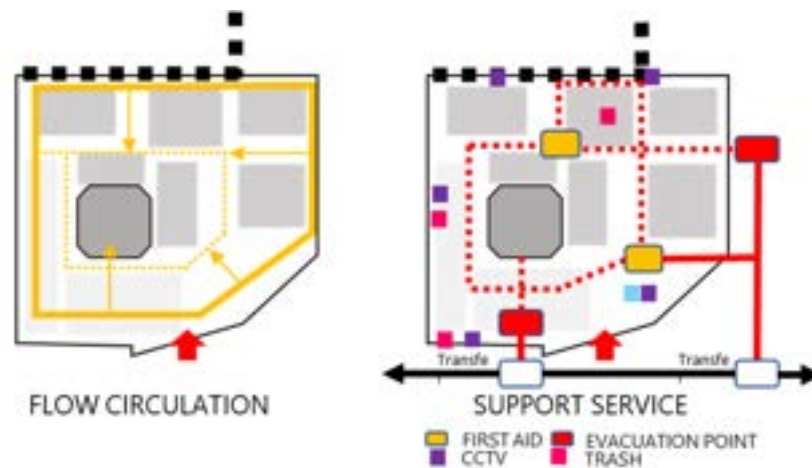
Source: JICA Project Team

**Figure 1.3.63 Reorganization of Zones and Activities**

To achieve the purposes and goals of development of this zone, a multipurpose space was designed for Zone H with three main purposes, i.e., as a gathering point, a recreational space, and a public plaza, as shown in Figure 1.3.63. The zoning of activities aimed to organize the activities in each space, that is, passive space (for recreation or passive activity), active space (for playing or active activity), and common space which includes family zone on the left side (for social gathering and public plaza). In addition, to make a creative and interactive space, different playground equipment were designed for these three spaces to serve the activities of all users. The purposes and components of each zone are summarized as follows:

- (1) **Common space** is a semi-public area. As this zone is located at the main entrance, the common space was designed to be open to all age groups. It focuses on the beauty and common facilities for resting and sitting. The functions and activities in this zone include C-1 Family zone, C-2 Access plaza, and C-3 Seating area.
- (2) **Active space** focuses on sports activities and fast movements such as jumping and climbing. This space provides four (4) playground equipment that support children's physical and emotional development as well as other skills. The four (4) playground equipment include A-1 Touch and sound, A-2 Active wall, A-3 Swing yard, and A-4 Fountain court.
- (3) **Passive space** focuses on low-intensity or passive activities and slow movements. The pivotal function of this space is to create social interaction for children through public space. Also, it is expected to enhance the learning skills for children with three main play spaces, which are P-1 Learning environment, P-2 Encounter space, and P-3 Learning wall.





Source: JICA Project Team

**Figure 1.3.64 Circulation and Support Services**

Aligned with the designed spaces, circulation is designed to facilitate users to access each space. Mainly, the circulation will lead the user to the center. In this design, the fountain court is at the center of this zone which connects the activities of all spaces. The users can walk around the zone and gain all activities along with main parts, as shown in Figure 1.3.64. Also, support services, consisting of first aid, CCTV, trash, and evacuation points, are provided to increase the safety in this zone. Both the circulation and support services support each other; i.e., circulation can increase the zone's safety, while support services can provide safe directions for users during a crisis and provide equipment to secure them.

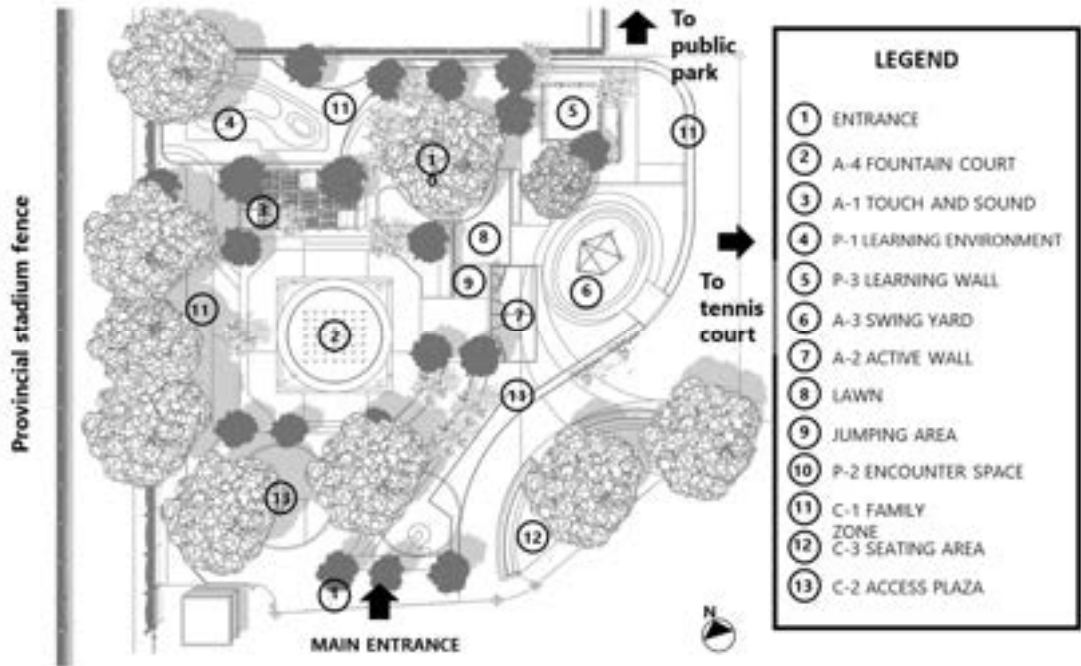
Besides this, Zone H can make an impression on new users as it is located at the park entrance. A good perspective and ambiance can be presented through the design of Zone H. A landscape and tree plan were also considered in the design to provide a good environment and shading. Both hardscape and softscape were considered to release heat levels while the lighting system was designed to help users to enjoy playing and develop their skills all day.

## 5) Detailed Design and Landscape

### Layout of Zone H

Figure 1.3.65 shows the layout plan for Zone H. As mentioned above, the key functions of Zone H are common space, active space, and passive space with a playground equipment. In this sense, the common space is mostly related to the landscape; the playground equipment in passive and active spaces are elaborated in the next section.

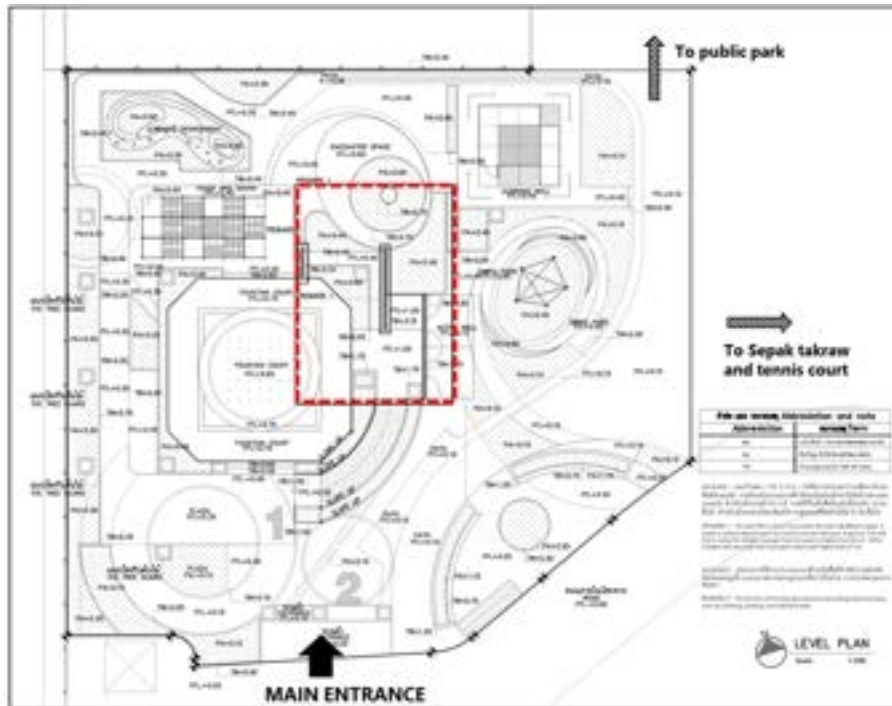
This section focuses on the overall spaces, including new tree plan, landscape plan (hardscape and softscape), lighting electrical plan, drainage plan, CCTV plan, service plan and other supportive functions in this area.



Source: JICA Project Team

**Figure 1.3.65 Layout Plan for Zone H**

**Level Plan and Jumping Area**



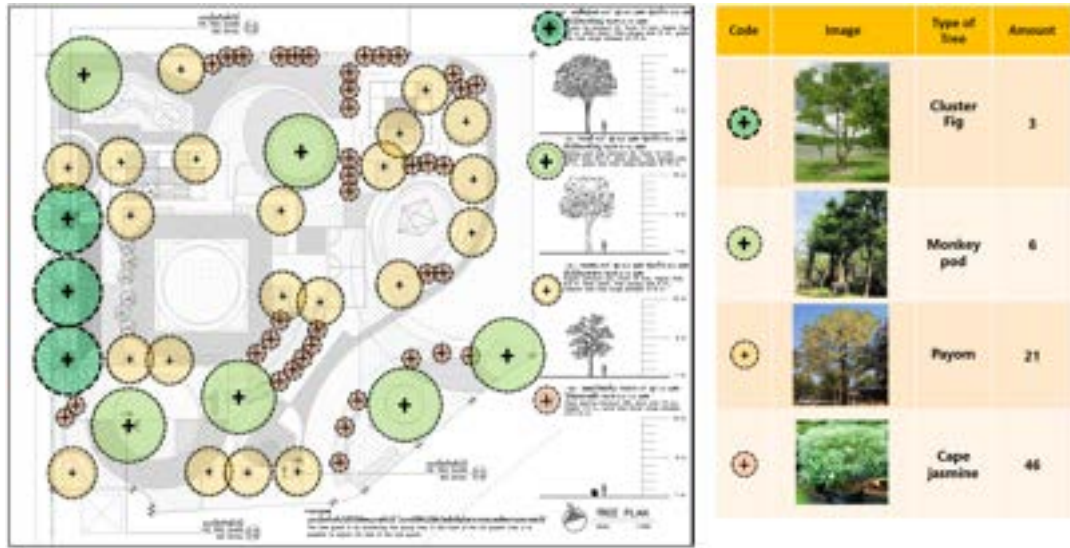
Source: JICA Project Team

**Figure 1.3.66 Level Plan**

In the level plan (Figure 1.3.66), the overall floor levels of this zone are recommended to be elevated 0.15 meter from its current level. Besides the three main zones, there is a jumping area at the center of Zone H. The jumping area is designed with different heights of walls. The jumping area covers the wall's height at 3.15 meters to control the noise and to separate the activities from other spaces. The wall also prevents the children from falling

to the ground. The function of the jumping area is for adventure play, climbing, jumping, or playing hide and seek. This is suited for children aged over 5 years and taller than 97 cm.

**New Tree Plan**

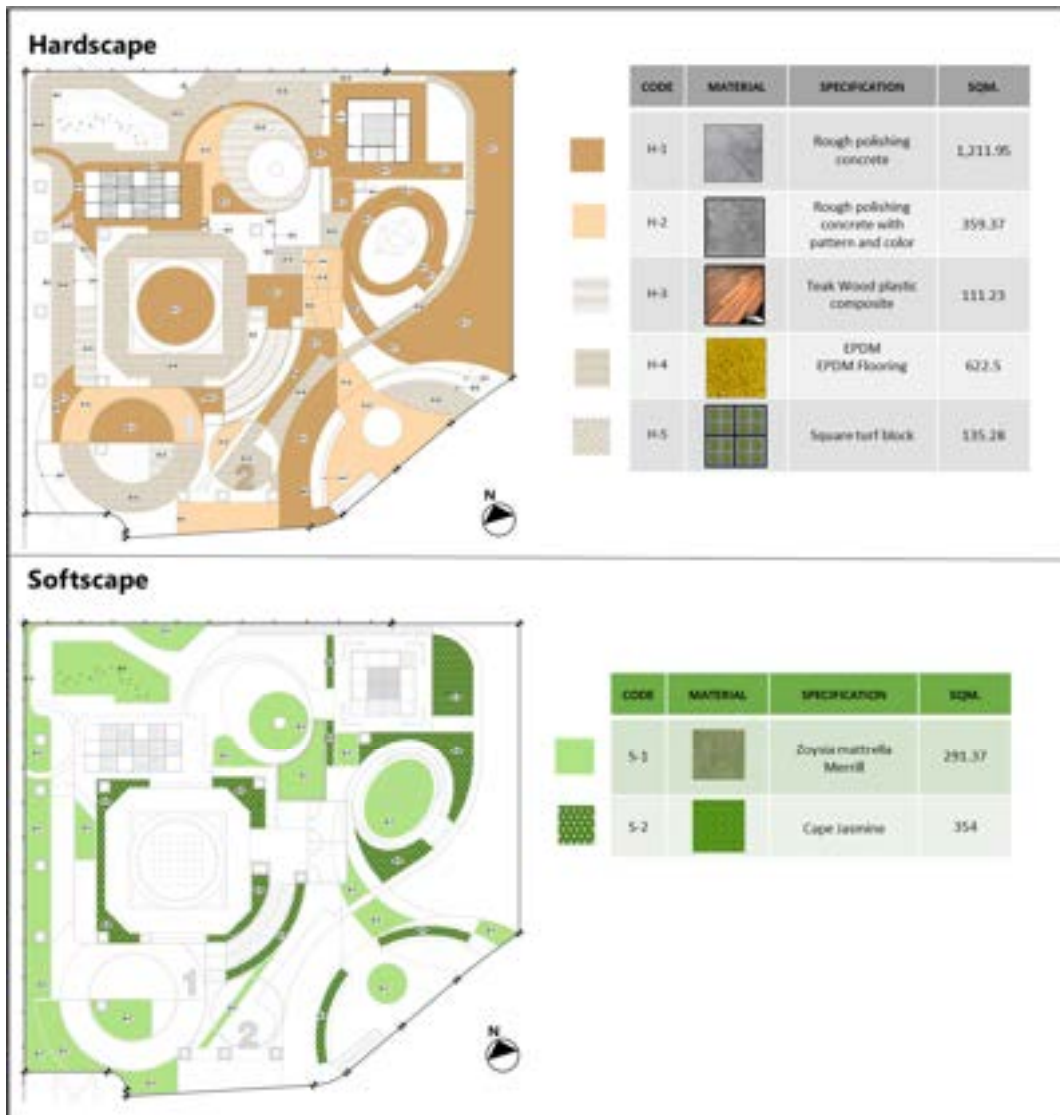


Source: JICA Project Team

**Figure 1.3.67 Level Plan**

The new tree plan was designed to reduce the heat during the daytime and to increase the beauty of this zone. There are different species and sizes of trees selected to be planted in this area which includes cluster fig (3), Monkeypod (6), Payom (21), and cape jasmine (46). The cluster fig and monkey pod are considered as big trees with heights of 8-10 meters to enhance the overall environment, while Payom and Cape jasmine are high at 6-8 m. and 0.5-10 m, respectively, and function as decorations and provide shade in the space. It should be noted that the cluster fig is a signature local tree of Chumphon so that it can be a highlight of this space to encourage people to learn the local plants of Chumphon.

**Landscape Plan (softscape and hardscape)**

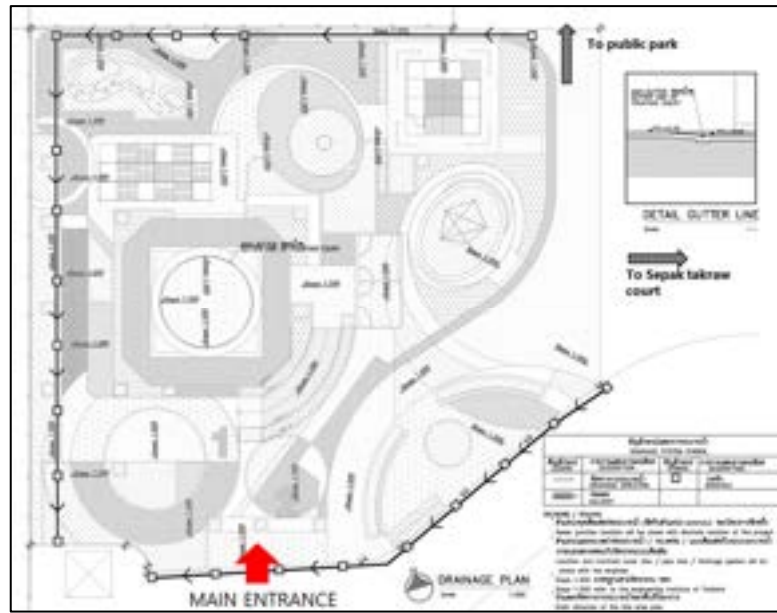


Source: JICA Project Team#

**Figure 1.3.68 Landscape Plan**

Zone H mainly consists of different types of hardscape with an area of 2,440.33 sq.m. The materials include roughly polished concrete and concrete with patterns and colors, teak wood, plastic composite, EPDM flooring, and square turf block. The softscape covers an area of 645.37 sq.m. with two main types of lawn which are Zoysia Mattarella Merrill and elfin herb planting pots. Even though Zone H is mostly covered by hardscape, especially concrete, the landscape has taken a high consideration for keeping the outdoor space cool and keeping the user safe when playing.

### Drainage System

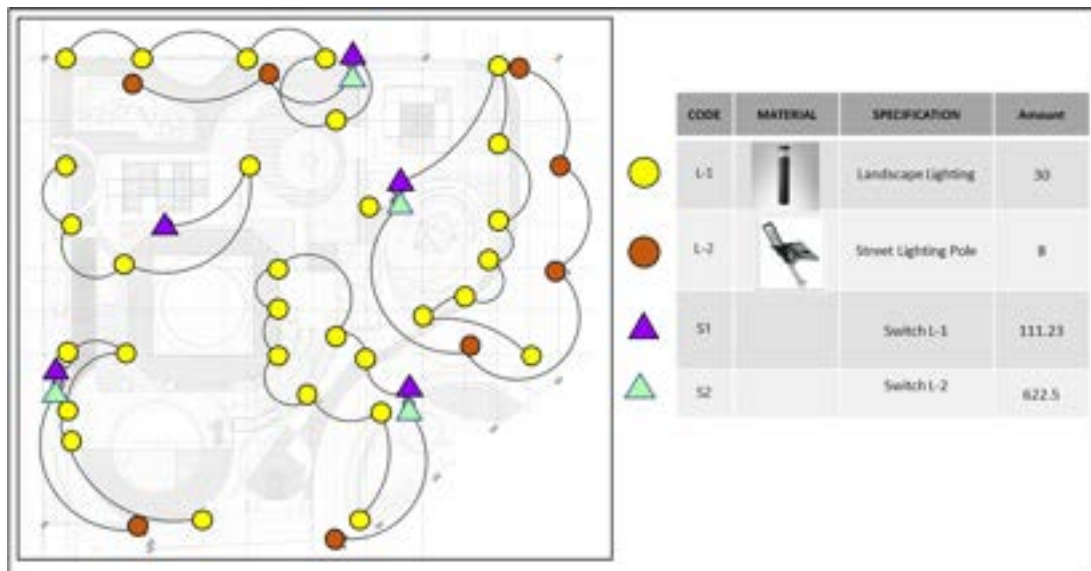


Source: JICA Project Team

**Figure 1.3.69 Drainage Plan**

The drainage system in the area was designed to support activities and to water the softscape and other trees. The culvert and manhole are mainly connected with the existing system. The slope of this zone was designed as 1:200 to meet the standard of the engineering institute of Thailand. Also, the drainage system is linked to the water system in this zone. Ten water faucets are designed for the plant watering system.

### Lighting Plan



Source: JICA Project Team

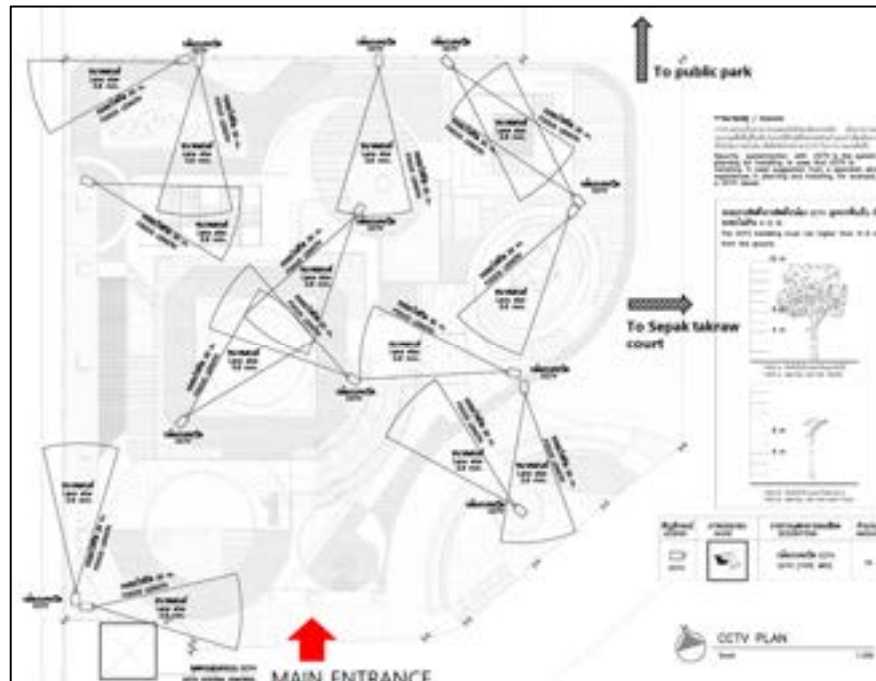
**Figure 1.3.70 Lighting Plan**

There are two types of lights in this zone. The first type is landscape lighting, while the other is solar streetlights. Around 30 locations around the area have landscape lighting.



Streetlights were designed to be installed around this zone, mainly at access points. Both lights are expected to support users using the space in the evening and at night. The junction box is also installed in each spot as electrical system and is linked to the main control box.

### CCTV Plan

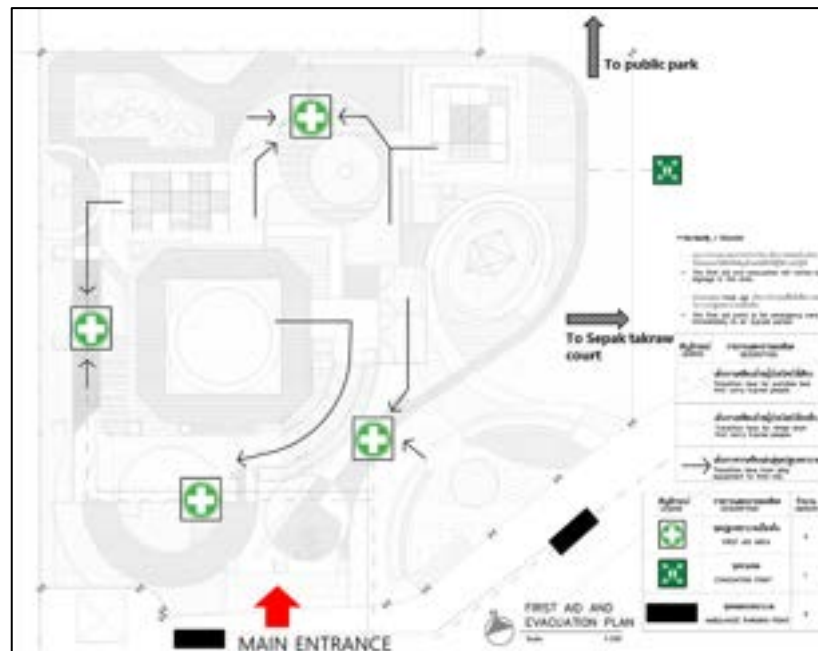


Source: JICA Project Team

**Figure 1.3.71 CCTV Plan**

The CCTV plan was designed in overall this zone under the S.A.F.E. concept. There are two types of CCTV. One type is installed on the trunk of trees at a height of 4 meters, while another type is installed on streetlights at a height of 5 meters. The total number of CCTV is 15. The CCTV is expected to survey the area and to prevent any crime and misbehavior. However, this plan is only a suggestion or guideline; the CCTV operating system and installation require advice from specialists.

### First Aid and Evacuation Plan



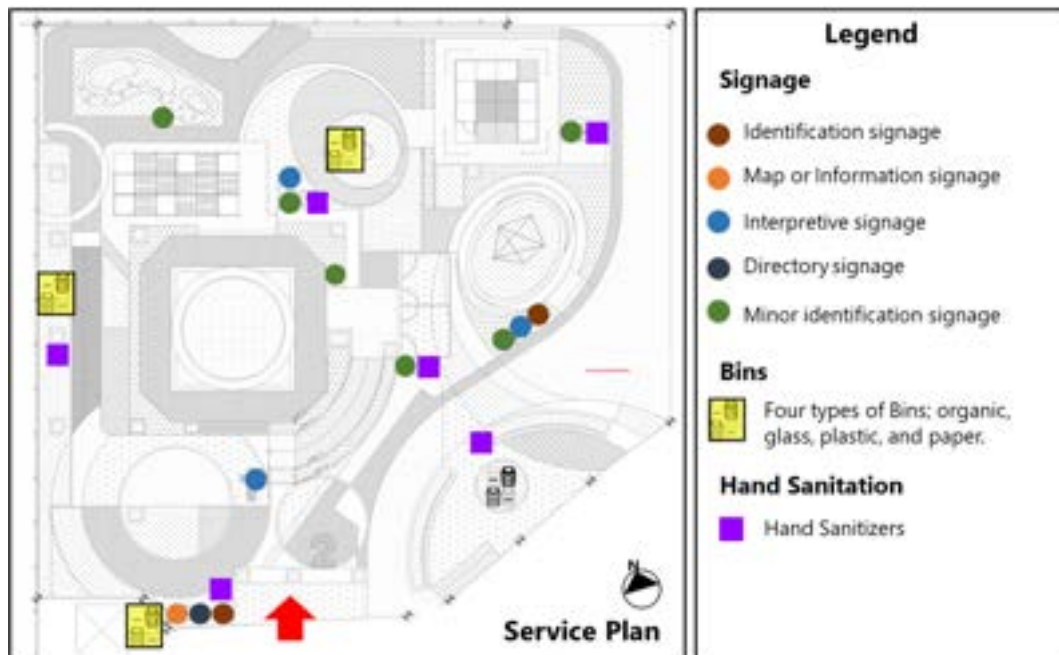
Source: JICA Project Team

**Figure 1.3.72 First Aid and Evacuation Plan**

The first aid and evacuation plan was mainly prepared for emergencies. This plan is a directory guideline or public assistance to support a sudden, urgent, usually unexpected incident or occurrence. This plan includes first aid points and evacuation points. The first aid point is mainly for those who are injured from playground equipment, and it provides a route to access to the point. The evacuation point is mainly for occurrences that have high probabilities of escalating, causing immediate danger to life, health, property, or the environment. Routes and points were considered giving access to ambulance vehicles.



## Service Plan



Source: JICA Project Team

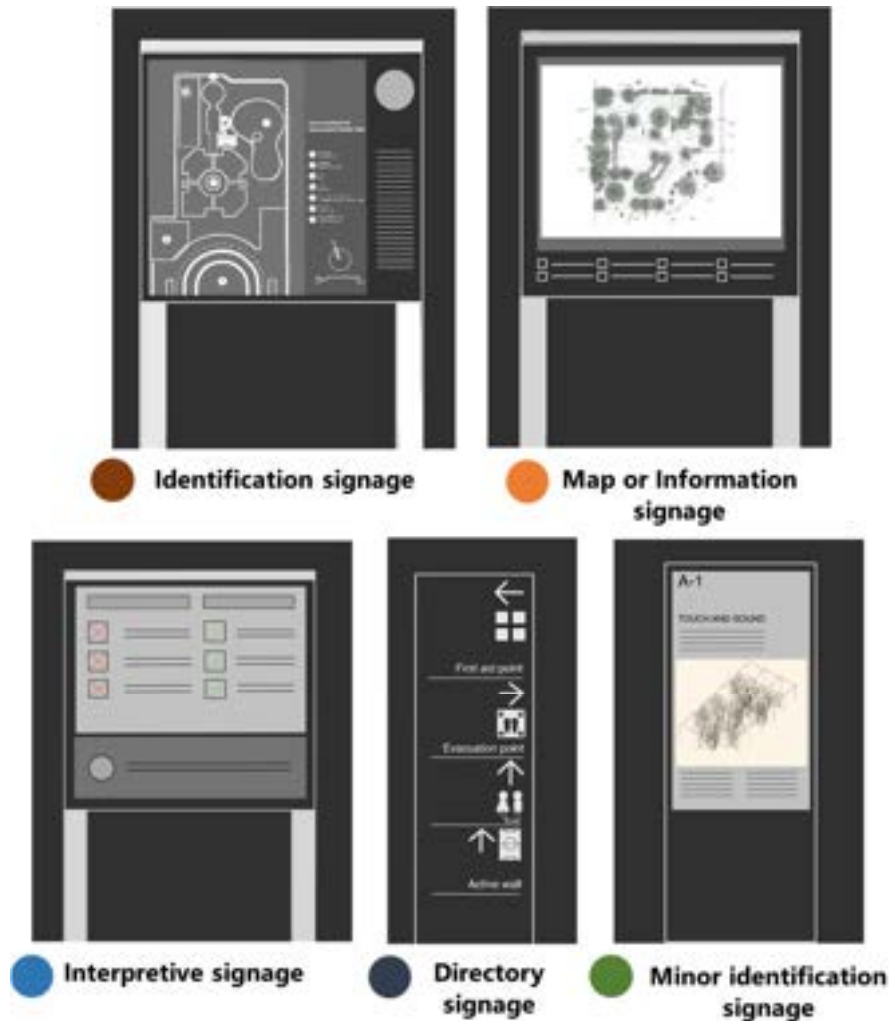
**Figure 1.3.73 Service Plan**

The service plan was also prepared as a guideline and includes information signage on garbage bins, hand sanitizer stations, and others.

There are five types of signage, as shown in Figure 1.3.74, consisting of identification signage (2), map/information signage (1), interpretive signage (1), directory signage (3), and minor identification signage (6), with a total number of 17. The details of each signage type are described as below.

- 'Identification signage' provides overall maps and information about the park to show the location of each zone, especially Zone H. This signage is mainly located at the entrance of this zone, at the park's main entrance, and the entrance on the right side of the park.
- 'Map or Information signage' provides overall information about Zone H including features, amenities, and regulations. This signage will be located only at the entrance as a main map of Zone H.
- 'Interpretive signage' provides usage guidelines with rules and regulations specific to this zone and covers allowed and unallowed activities. Such rules and regulations will also make different users use the area properly. This can include common information such as "do not throw litter on the ground."
- 'Directory signage' provides direction for this zone. This signage can be an arrow to lead users to each facility or zone. This signage will be located at the entrance and the center of this zone.
- 'Minor identification signage' provides specific information about the playground equipment including purpose of each playground equipment, play instruction, and

expected outcomes that the users can expect from each equipment. This signage not only aims to give a deeper understanding to the users but also to let them learn from those functions of the park. Thus, this signage will be located close to the playground equipment and the information in each signage will be different.



Source: JICA Project Team

**Figure 1.3.74 Types of Signage**

Besides these signages, the service plan also provides a location for bins. To encourage users to keep the park clean and to raise awareness on waste separation, four types of bins are provided, i.e., organic bin, glass bin, plastic bin, and paper bin. These bins will be located together in four spots, as shown in the plan.

Considering the COVID-19 situation, the new normal has also been considered in making the service plan by providing hand sanitization spots, for which there are six. Users are recommended to clean their hands before and after using the playground equipment.

**Color Schemes**



Source: JICA Project Team

**Figure 1.3.75 Color Schemes**

A set of color schemes is provided as an option or suggestion for the Tessaban to improve the image of the playground and attract users. Each color pattern can be used on equipment/facilities independently in the playground. Examples of using these color schemes on the pavement of this zone is provided below (Figure 1.3.76).



Source: JICA Project Team

**Figure 1.3.76 Examples and Use of Color Schemes**

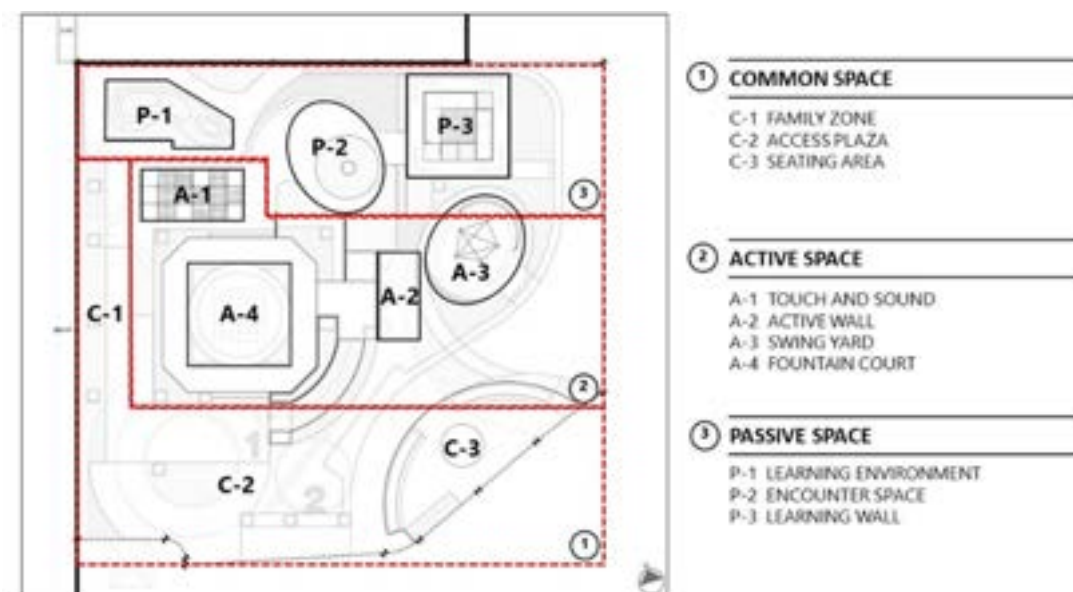
- Color scheme 01: Modern Gold - using warm shades of bright yellow to stimulate children to engage in sports. Combined with the shades of trees, these colors can reduce heat levels during the day.
- Color scheme 02: Vernacular - using orange as the main color. Orange is the color of power and knowledge. It can create the perspective of adventure for children, especially supporting physical growth, developing muscles, the nervous system,

and their vision. An orange-colored path in the middle of a green space creates a different dynamic in the area.

- Color scheme 03: Innovation - using a combination of colors—blue, yellow, orange, and pink in each space—will make each zone more distinctive and enhance a sense of recognition. Yellow and orange can urge sports activities, while blue and pink represent passive activities in this zone.

## 6) Detailed Design of Facilities and Functions

The detailed design of playground equipment mainly considered their suitability to children by age group with an instruction for parents to take care of their children. Also, safety was highly considered. This includes materials for the ground, height of playground equipment, and level of steps.



Source: JICA Project Team

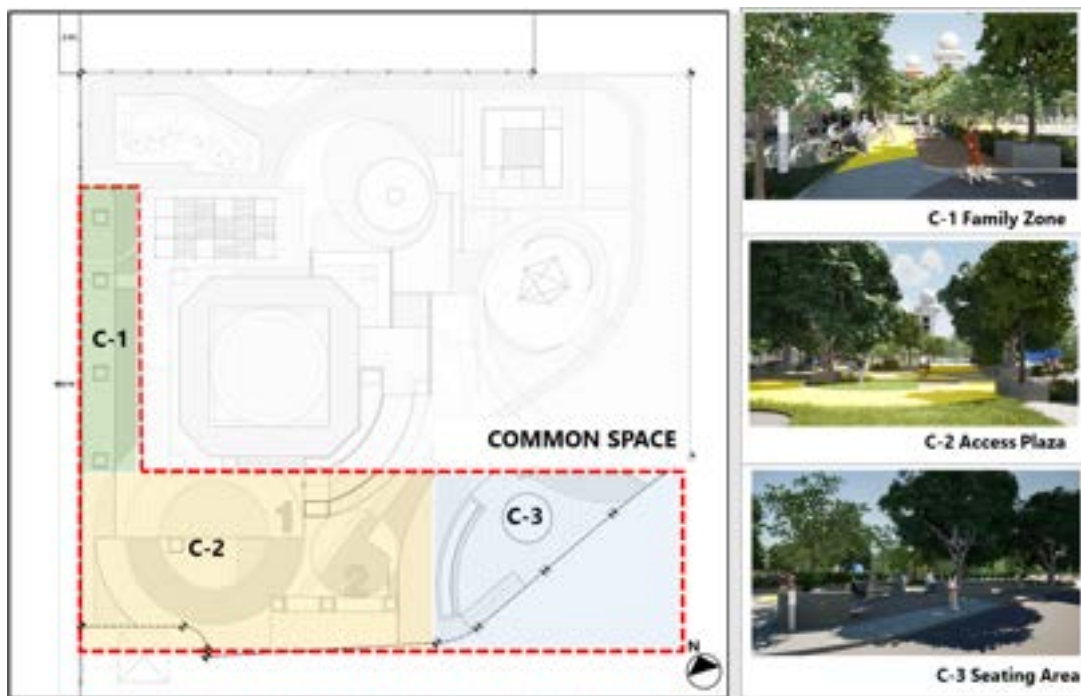
**Figure 1.3.77 Components of Zone H**

As mentioned above, Zone H is divided into 3 main spaces, which are common space, active space, and passive space. As the function of each space is different, the detailed design of each space was prepared in accordance with its functions. Common space is mainly related to the landscape and paths, so it focused on the patterns and built-in facilities, like seats with planting pots. Meanwhile, passive and active spaces are related to the playground equipment to enhance learning skills of children.

In the pilot project (Phase 2), the playground equipment in the passive space were preliminarily design, while the playground equipment in the active space were designed in detail, including touch and sound, active wall, and swing yard. The fountain court was also designed preliminarily, as it is related to the lighting and drainage systems in the park so that it is hard to ground a new system.

The design of each space is described below.

- **Common Space**



Source: JICA Project Team

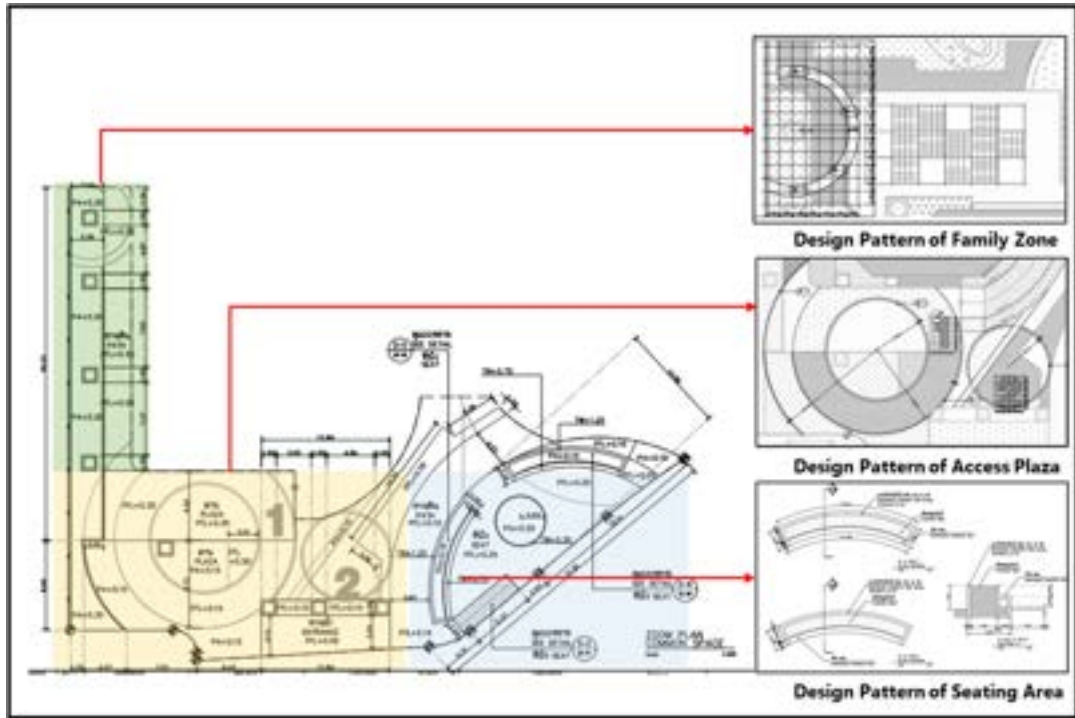
**Figure 1.3.78 Common Space in Zone H**

As the key function of a common space is as a semi-public area, this space mainly focuses on the landscape and built-in facilities. The common space is located at the main entrance of this zone. The area is designed to increase user's perception and to link the activities of users of the park and the provincial stadium.

The common space is suited for all ages to rest and to have family activities. This zone is divided into three areas which are:

- C-1 Family Zone is located next to the provincial stadium. This area was designed mainly for relaxation. Another side, there is located close to the fountain court and learning environment, the parents can clearly look at their children when they play each equipment.
- C-2 Access Plaza is located at the main entrance of this zone. The design of this open space welcomes all users. There is a small activity at the ground (pattern) to attract users and children to freely play in this space.
- C-3 Seating Area is similar to the access plaza as it was designed as an open space. However, this area has a built-in seat with a planting pot. Thus, the users can take a rest and enjoy the environment in this zone.





Source: JICA Project Team

**Figure 1.3.79 Design Patterns of the Common Space in Zone H**

- **Active Space**

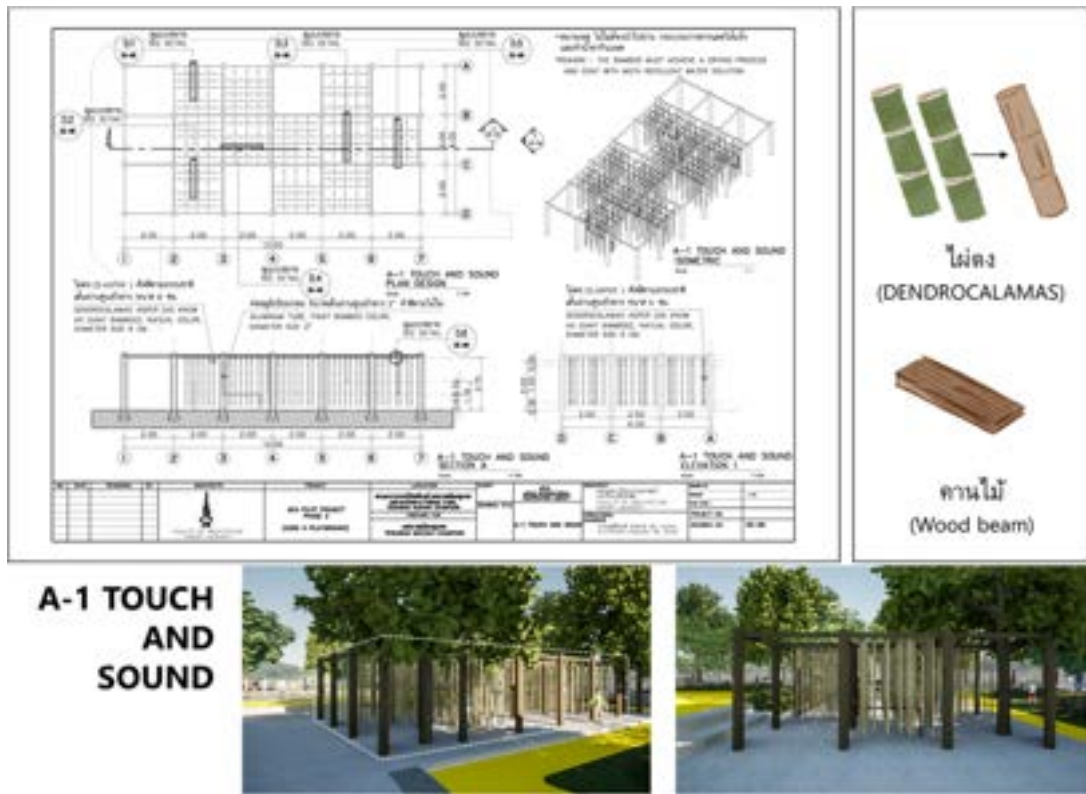


Source: JICA Project Team

**Figure 1.3.80 Active Space in Zone H**

The main purpose of the active space is to support the sports activities or fast movement of children, such as running, jumping, and climbing, aiming to stimulate children’s development in terms of physical and emotional growth. This space consists of three playground equipment and a fountain court. Under JICA’s pilot project, the following three playground equipment were prepared in detail:

**A-1 Touch and sound**



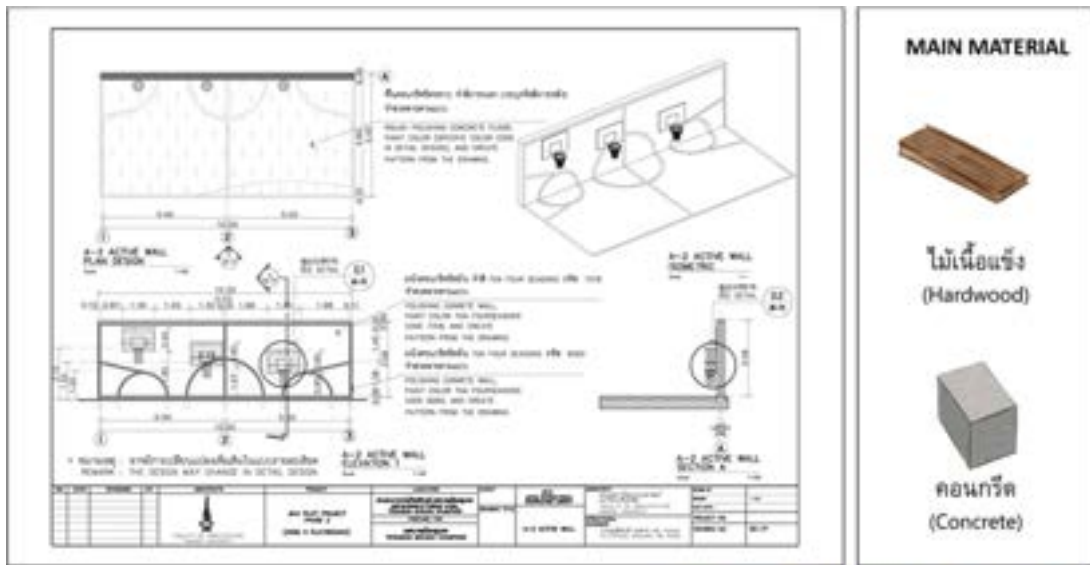
Source: JICA Project Team

**Figure 1.3.81 Active Space in Zone H: Touch and Sound**

'Touch and Sound' is located between the learning area and the fountain court within the active space in Zone H. The main material of this playground equipment is bamboo logs. The bamboo will hang at different lines. The users can walk through the bamboo to make a sound. This is suited for adventure, hide and seek, and exploring game. This aims to build the companionship when children create common rules to play. Also, this builds the physical sense of children through touch (of the surface) and sound (of bamboo). This playground equipment is recommended for upper-secondary school children.



**A-2 Active Wall**



**A-2 Active Wall**

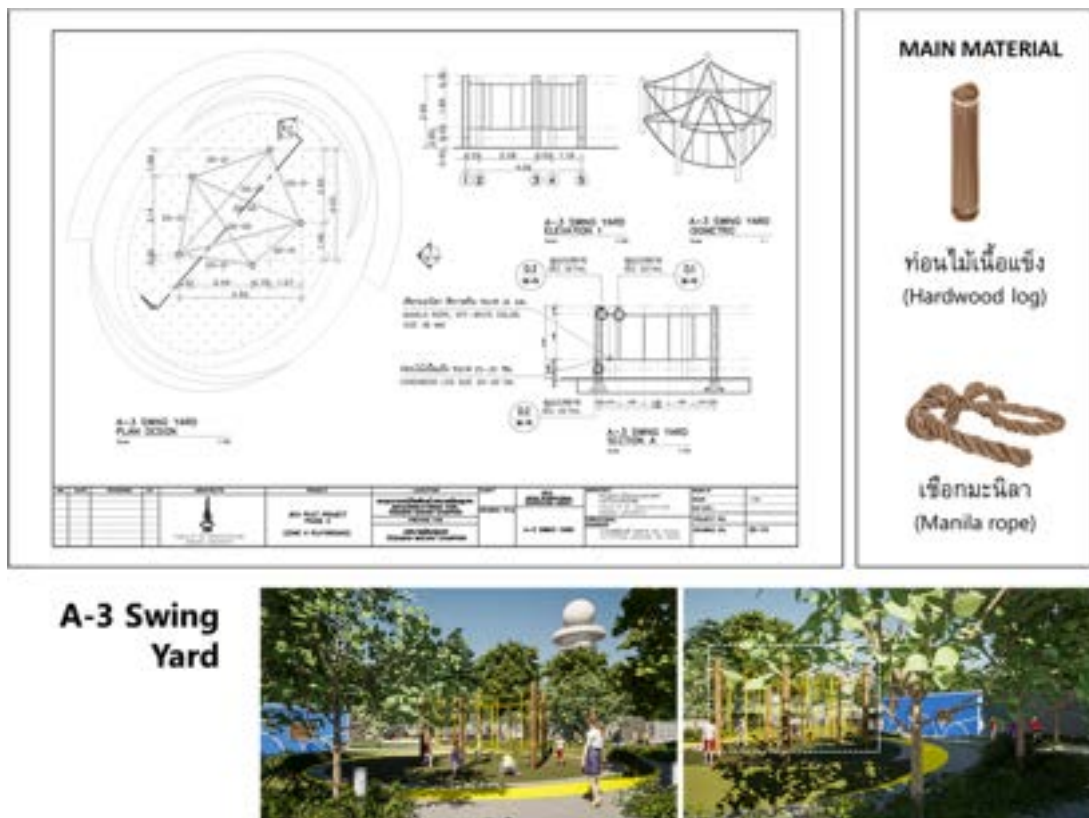


Source: JICA Project Team

**Figure 1.3.82 Active Space in Zone H: Active Wall**

An active wall is located in the middle of the active space. There is a wall-mounted basketball hoop (the height of wall is 3 meters). This is an activity that parents can do with their children for fun and for creating family interaction. Besides this, this playground equipment enhances balancing skill, builds concentration of users, and stimulates physicality and flexibility. This is recommended for elementary school children, upper-secondary school children, and adults.

### A-3 Swing Yard



Source: JICA Project Team

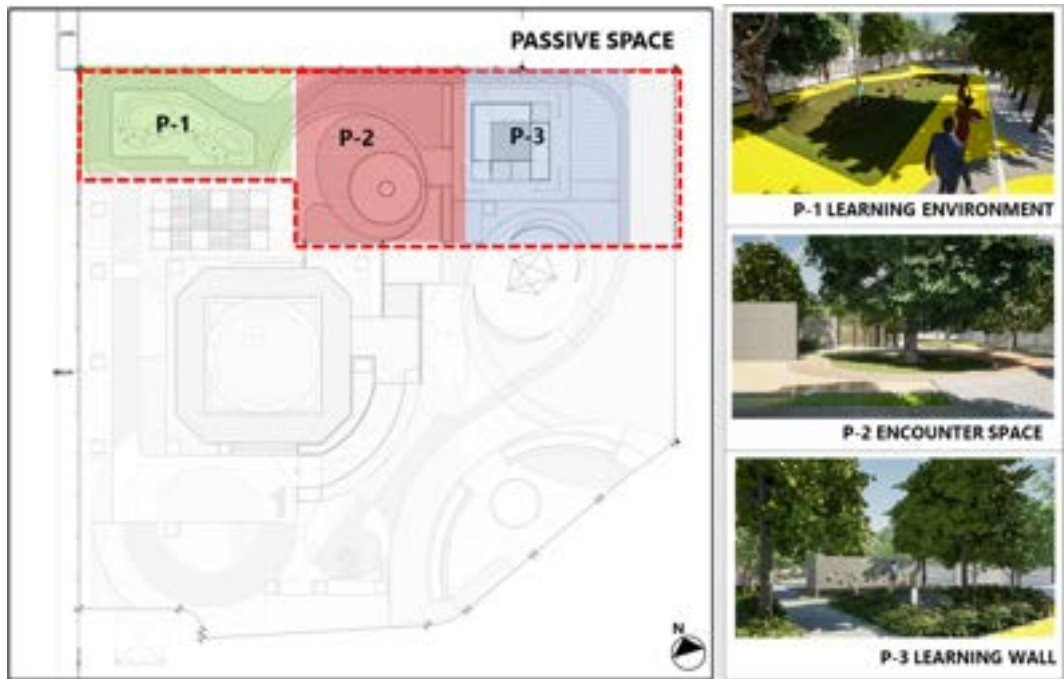
**Figure 1.3.83 Active Space in Zone H: Swing Yard**

A swing yard is located at the right side of this zone. There is a rope in different levels to enhance experiences and problem-solving skills. This also enhances balance and climbing skill, as well as concentration of the users. Also, this can help build the imaginative skills of children through role-playing. Movement can be improved by climbing, sitting, and balancing. The rope is multifunctional; the users can lay down and rest and improve critical thinking due to the ergonomic design and the pentagon shape.

### A-4 Fountain Court

The fountain court functions as a linkage between active and common spaces. This aims to reduce the speed and fast movement of overall active space. The fountain is provided at the center of this zone for all children to play around in and also to be the highlight of this zone as it enhances the distinctive image of the playground.

- **Passive Space**

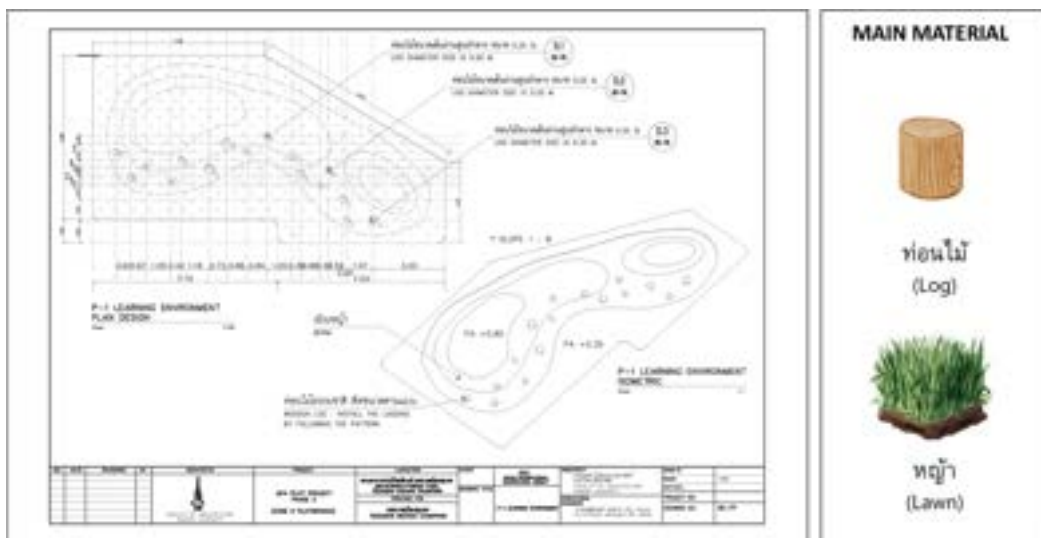


Source: JICA Project Team

**Figure 1.3.84 Passive Space in Zone H**

The passive space is located at the top of Zone H. This space aims to support slow movement activities for younger children to promote social interaction, social gathering, and learning with the environment. There are three areas in this space: two play areas (P-1 Learning environment and P-3 Learning wall) and an open space (P-2 Encounter space). The details of these areas are summarized below.

***P-1 Learning Environment***



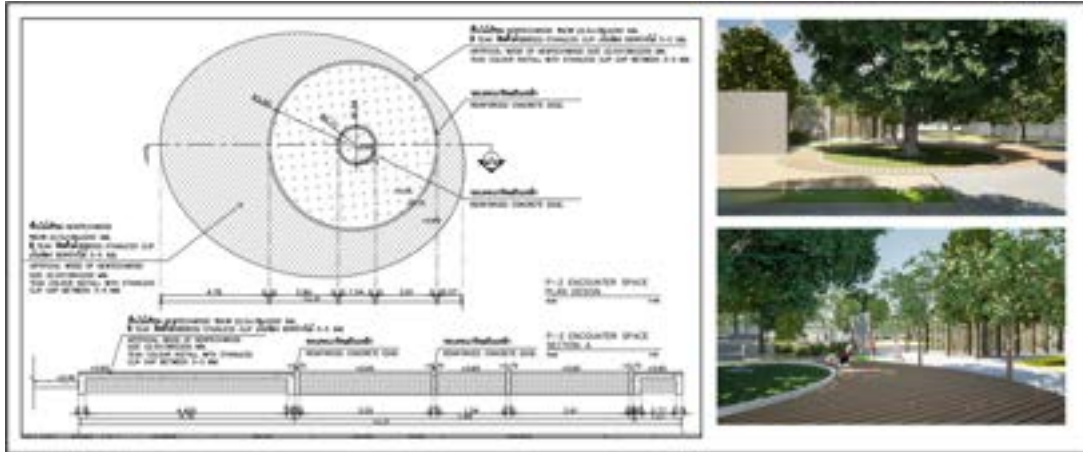
Source: JICA Project Team

**Figure 1.3.85 Passive Space in Zone H: Learning Environment**

The learning environment is a flat berm showing logs with different heights suited for body-balancing and concentration skill. This encourages users to enjoy themselves and the

surrounding environment. This play area was designed especially for low or passive activities for young kids (kindergartners) to engage in. Children can play without interacting with other people. However, young children should be supervised by parents.

**P-2 Encounter Space**

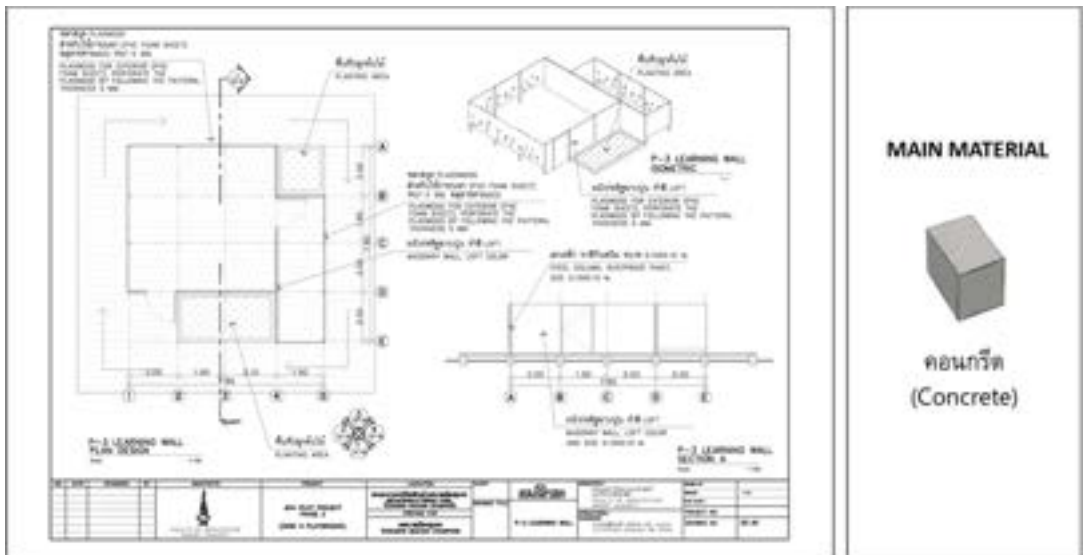


Source: JICA Project Team

**Figure 1.3.86 Passive Space in Zone H: Encounter Space**

The encounter space is a vital part of the passive space because it is located at the center of this zone. This area is designed for social gatherings to promote social interactions for all ages. This space was designed using Newtech wood as pavement, which is raised from the ground level at about 0.5 m.

**P-3 Learning Wall**



Source: JICA Project Team

**Figure 1.3.87 Passive Space in Zone H: Learning Wall**

The learning wall has different levels and sizes of holes to peer through. This is suitable for circular exhibitions during events and festivals. This stimulates the curiosity of children and promotes learning through exhibitions/information provided at the wall. The users/children can explore and learn by honing their creativity. This is suited for all ages.

## **7) Importance of Playground Maintenance**

Regular maintenance of Zone H should be conducted to create a safe environment for children, reduce damage to the playground equipment, and prevent any injury. Regular inspection and a maintenance plan are required to provide the best experiences to the users. Therefore, it is highly recommended that the playground and playground equipment should be inspected daily. However, maintaining some playground equipment needs the help of specialists.

**Playground equipment** have a potential to cause injuries. Thus, all playground equipment must meet basic safety standards to minimize the possibility of children getting injured such as getting trapped or falling.

Long-term exposure of playground equipment can deteriorate their quality. Each material of playground equipment should be carefully and periodically inspected, for instance, wooden materials for possible rot and splinters, metal materials for rust, and plastic materials for any possible cracks and breakage. Some equipment also require particular attention, such as swing chains and seats, and anything with moving parts. Sharp edges or improperly secured moving parts could hurt or entangle children.

In case of accidents and injuries, the assessment of playground equipment quality should be conducted together with specialists or professionals. This is not only to evaluate and identify the possible risks but also to find suitable solutions. While regular maintenance is required daily, professionals can help decide on how to repair or replace damaged equipment.

**Landscape:** If the playground has a loose surface like mulch, it is important to take a close inspection for hidden dangers. It is necessary to ensure that children have soft landing areas and no tripping hazards. Regular surfacing care is important because some parts of a playground surface can become loose or scattered over time.

**Proper drainage system** is another key component of a safe and clean playground, as standing water and improperly drained surfaces can cause illness and injury.

**Cleanliness** is another important point for creating a safe environment. It is necessary to check carefully for trash, broken glass, and other hazardous items and debris. While looking for debris, it is necessary to keep an eye out for natural hazards as well. Just like trash, new natural dangers can appear overnight. Anything that can harm children like exposed tree roots, loose rocks, and sharp branches should be resolved.

## 1.4 Operation and Management Plan

### 1.4.1 Operation and Management Framework

Operation and management (O&M) is defined as an administration of managerial practices aimed at ensuring efficiency within an organization to improve effectiveness, profitability, and sustainability. It involves the wise use of resources, from staff, materials to equipment and technology, converting these inputs into efficient and effective outputs on a day-to-day basis and at a strategic level within an organization. O&M guidelines aim to achieve the following goals:

**Better Output** – The operations manager optimizes and improves processes that have a significant impact on the project, product, or service. This usually leads to higher output, lower defect rates, and lower costs.

**Competitive Advantage** – Better output leads to a better product or service over competitors. This allows the city to stand out from the competition, gaining higher potential to have support from both public and private sectors.

**Better Citizen Engagement** – As a combination of the first two, the city should end up improving the bottom line and making better engagement with the citizens and any relevant stakeholders.

#### Structure of O&M Team

To achieve the above-mentioned goals, an O&M team has to be established with the following two missions: 1) the overall maintenance and care of a building and any built environment, landscape, and infrastructure; and 2) administering the processes to organize social, environmental, and economic activities which can be offered through the facility. This includes the processes of planning, coordinating, purchasing, logistics, scheduling, staffing, and general services – with the goal of maintaining, controlling, and improving organizational activities.



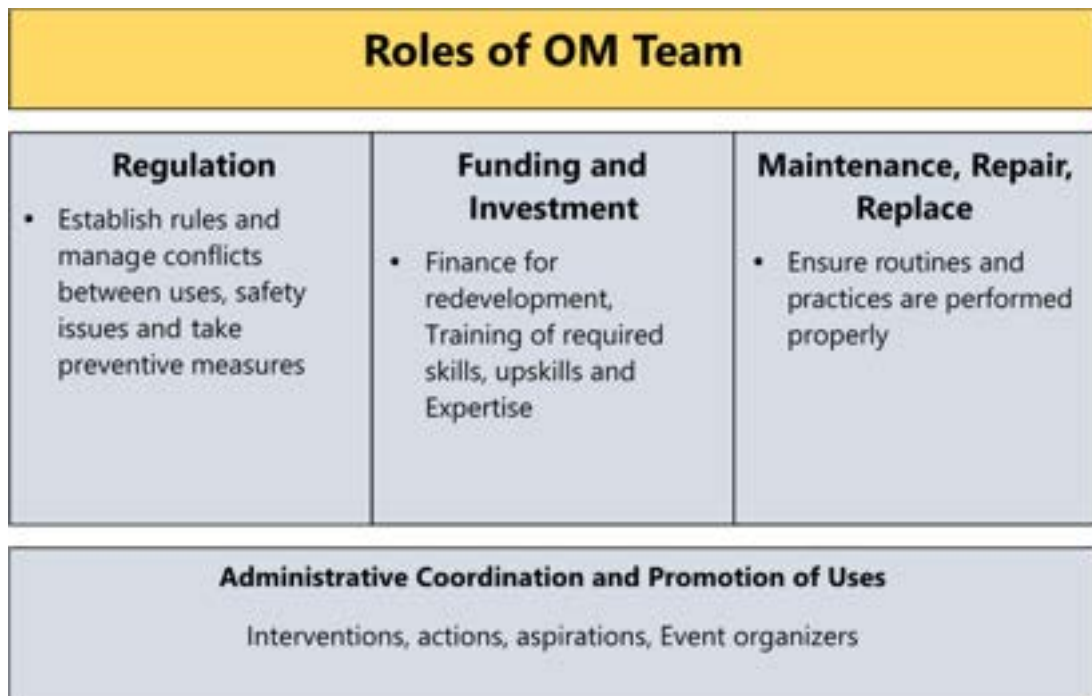
Source: JICA Project Team

**Figure 1.4.1 Framework of O&M Team**

A state-centric viewpoint with support from private and public entities is highly



recommended for a Tessaban project. In other words, the main responsibility will remain with the Tessaban supported by 3-5 representatives from the private, public, and civil sectors (Figure 1.4.2). The roles and responsibilities of the O&M Team can be gradually delegated from the Tessaban to other organizations; for example, the Tessaban can outsource some routine maintenance to private groups who can then report back to the O&M team. Meanwhile, the community or local volunteers can keep an eye on such facilities to prevent misbehaviors and crimes. Therefore, the integrated O&M team with different sectors will enhance the performance and efficiency of maintenance toward future sustainability.



Source: JICA Project Team

**Figure 1.4.2 Roles of an O&M Team**

The O&M team is expected to engage in four key roles: regulation, funding and investment, maintenance/repair/replacement (or maintenance plan), and administrative and promotion of uses. The details of each role are summarized below.

**(1) Regulation**

- Establish and set rules to ensure that the site, division of zones, access to the site and the multi-purposes of the site are updated and revised according to the changing needs of the stakeholders.
- Establish safety and risk monitoring plan to ensure that all preventive measures can be put in place timely.
- Establish and implement incentive measures to ensure citizen engagement and to promote responsible behaviors.

**(2) Funding and Investment**

- Seek information and share potential financial sources according to the fiscal year



and any special project funding available.

- Establish a task force (when deemed appropriate) to formulate a proposal for partnerships to contribute both in kind and in cash from private corporations or international funding bodies.
- Secure the budget for lifecycle costs for maintenance.
- Manage any income and revenue gained from any event, any sponsorship to ensure that the income is investing into a wise use.

**(3) Maintenance, Repair, or Replacement**

- Advise or provide information about maintenance practices to person(s) or organization(s) in charge to ensure that maintenance of the site is performed well.
- Ensure that routine maintenance activities, such as cleaning and maintaining facilities/equipment, are performed properly.
- Monitor the routine maintenance plan and appraise the performance with alternative solutions (if any).

**(4) Administration and Promotion of Uses (Events)**

- Coordinate with subgroups to implement events and activities based on annual events and activities.
- Formulate an annual event calendar with partners.

**1.4.2 Direction of O&M Plan**

This O&M plan will be used for establishing the O&M team for the pilot project of Chumphon, especially Zone D: Improvement of banyan tree area. This is because this zone has already completed the construction, so the O&M plan and guideline will be clearly applicable for the Tessaban to take an action.



Source: JICA Project Team

**Figure 1.4.3 Construction of Zone D**

As shown in Figure 1.4.3, Zone D was designed to serve a wide range of activities. The components of Zone D include the installation of a stage around the banyan tree, installation of lighting system, improvement of the drainage system, and landscape improvement. In normal times, the area is used as a resting place. If any events are organized in the park, the banyan tree area can be set up as a stage and can be decorated with lights for activities held at night. Also, Zone D was designed to create a space which meets the needs of all people, including kids, working groups, and the elderly. In this context, the OM plan for Zone D focuses on safety and maximizing the use of the space.

The next part includes the components of Chumphon O&M team, the potential funding sources, maintenance plan, and the administration and promotion of use (including event plan).

### **1.4.3 Chumphon's Operation and Management (O&M Team)**

From the consensus of the PPT, Tessaban Mueang Chumphon was agreed to be the focal point to lead the O&M team. This is because the Tessaban has the mandate to manage public spaces. However, the O&M team cannot be effective with the Tessaban's support only. Collaboration with a fair representation of other public organizations, private sector, and communities who are related to the pilot project is also essential to share responsibilities and balance the opinions toward efficient operations management.

<b>Tessaban</b>	<b>Community (representatives)</b>	<b>Private corporations (representatives)</b>	<b>Public Organisations (representatives)</b>
<ul style="list-style-type: none"> <li>•Mayor</li> <li>•Clerk office</li> <li>•Director of Strategy and Budget Division.</li> <li>•Director of finance division</li> <li>•Director of Public Works Division</li> <li>•Director of Public Health and Environment Division</li> <li>•Director of Social welfare</li> <li>•Etc.</li> </ul>	<ul style="list-style-type: none"> <li>•Head of Community</li> <li>•Nearby Communities</li> <li>•Group of interests</li> </ul>	<ul style="list-style-type: none"> <li>•Chamber of Commerce</li> <li>•Motorcycle Taxi Group</li> <li>•Vendors in the park</li> <li>•Shop Owners nearby</li> <li>•Etc.</li> </ul>	<ul style="list-style-type: none"> <li>•Sport Authority</li> <li>•DPT</li> <li>•TAT</li> <li>•Etc.</li> </ul>

Source: JICA Project Team

**Figure 1.4.4 Proposed Composition of the Chumphon O&M Team**

Figure 1.4.4 shows a list of proposed Chumphon O&M team members. It is highly recommended that this O&M team should be authorized by the Tessaban to form themselves into a committee. The purpose of an OM committee is not only to maintain and secure the construction of Zone D and organize events but also promote overall implementation of the master plan.

With this structure, the committee is chaired by the mayor while the Division of Strategy and Budgeting of Tessaban Mueang Chumphon would be a secretariat. The members of the committee consist of various organizations from public, private, and citizens, such as the TAT, vendors, and heads of communities. As mentioned above, the O&M team has four key roles listed below. The guidelines for these roles are elaborated in the next section.

1. Formulation of rules and regulations;
2. Funding and investment;
3. Preparation of maintenance plan; maintenance, repair, and replacement; and
4. Administration and promotion of uses.

### **1) Rules and Regulations**

The rules and regulations for Zone D are listed in Table 1.4.1. The social, economic, and environmental purposes, such as waste management, clean-energy use, prohibition of smoking, promotion of local products, are also considered to regulate the users in this area.

Table 1.4.1 Rules and Regulations for the Pilot Projects

Element	Rule and Regulation	Enforcement Method	Responsible Organization
<b>Event uses</b>			
The Stage Area	<p><b>Authorization:</b> If it is to be used for an event, the event must be authorized by the O&amp;M team.</p> <p><b>Permission:</b> The request for permission to use the stage for event activities must inform the following:</p> <ul style="list-style-type: none"> <li>- the duration of using the stage</li> <li>- the expected number of people to use the area</li> <li>- the nature of the activity</li> </ul> <p>Activities must not cause any part of the banyan tree to be damaged.</p> <p><b>A volunteer donation for park maintenance:</b> The Event Organizer should offer volunteers to do park maintenance.</p>	By Rules of area uses	O&M team to approve the application and make an agreement on how the volunteer donation will be used when approving the application for the use of the area.
Use of Equipment	<ul style="list-style-type: none"> <li>- The installation of any equipment must be notified to determine safety measures.</li> <li>- The use of amplifiers or other electrical equipment on the stage must consider a system that does not short-circuit the connected electrical work.</li> <li>- If there are additional decorations that could damage the banyan tree, the management may prohibit the installation of such equipment.</li> </ul>	By Rules of area uses	Tessaban, Department of Engineer and technical office In collaboration with Police office

Element	Rule and Regulation	Enforcement Method	Responsible Organization
Maintain cleanliness	<p>Maintain cleanliness during the event and after using the space to organize the event must be neat.</p> <p><b>Vendors</b> should be the main responsible team to plan an effective system –taking turn for walking round to check the following,                      - required number of waste bins,                      - bins placement,                      - preparing monitoring waste signages</p> <p><b>Vendors</b> should coordinate with Tessaban and event organizing team to keep the park clean and all micro plants intact after the event.</p>	Raise awareness by preparing signages to inform participants about the waste bin and waste separation and hazard.	Tessaban Vendors in the park
Safety monitoring	<p>Safety monitoring for the entire duration of “pre-during-after” the event</p> <p>Set up a team of volunteers sufficient to be the “watchperson” to check and keep an eye on the surroundings for example suspicious person, objects, or any potential violence.</p>	Raise awareness (An announcement or introduction to the team of safety)	Community members
<b>Normal Use</b>			
Entire area	<p>Setting up regulations on the use of areas for certain activities that may interfere or harm other users, such as skating, because the area is inappropriate, which may cause harm to the players themselves or to others.</p> <p>Prohibiting the consumption of alcohol and smoking or engage in inappropriate activities by grouping together and making excessive noise.</p> <p>No vandalism</p>	By Rules of area uses	Tessaban Sport club, Group of interests (users of the park)

Source: JICA Project Team

### Further Recommendations on Setting Rules and Regulations

The O&M team should review the rules and regulations periodically to adjust them and to find new solutions or give advice on major operation in a timely manner. These procedures include:

- Hours of operation: the times that the facility will be open for business. This may differ during critical situations. The O&M team should meet and advise on the most appropriate solution to the situation.
- User categories: the users should be identified to understand the behavior of users and main users. This will lead to the further improvements that are suitable for the key users. Examples of user categories are individual and family members, daily users, guests, participants and spectators, employees, and management.
- Fees and rates: the cost for use of the facility through various memberships, daily fees, admission fees, guest passes, and rentals (in the case of event).
- Reservation procedures and space allocation: methods for scheduling facility usage.
- Outsourced services: examples include camps, merchandise, food service, security, and parking.

## **2) Funding and Investment**

It is necessary to consider lifecycle costs for facilities and equipment developed or improved by the pilot project as such costs will be a key expense for the operation and management. While the majority of the funding for O&M will come from the Tessaban, the Tessaban can manage this cost with O&M team to share some responsibilities or gain some support. The life cycle costs include:

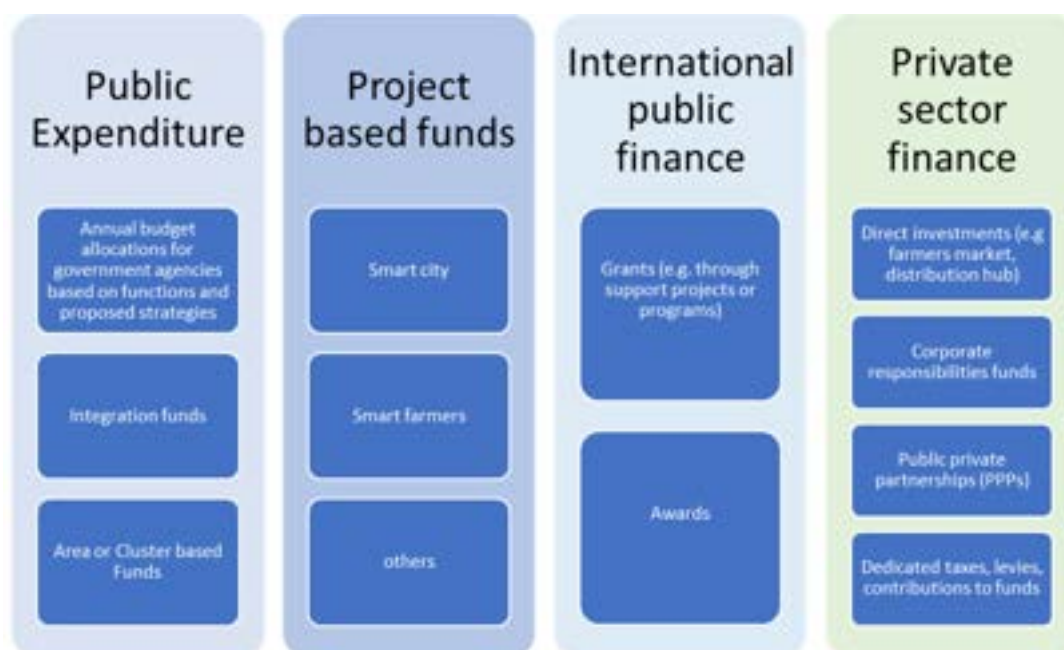
- Purchase costs (how much does a material and an overall asset cost to purchase or constructed?)
- Running costs (what are the operational costs of using an asset, such as the hourly costs of lighting up the park decoration and so on?)
- Maintenance costs (how much does it cost to retain an asset in a fit for purpose condition?)
- Training costs (how much will it cost to train staff in the use of a new maintenance system?)
- Decommissioning and disposal costs (how much will it cost to wind down an asset and to dispose of it bearing in mind operational and environmental issues?).
- Supply chain: the facilities need supplies such as food and drink to be sold to customers as well as services such as utilities. Those businesses or vendors in the park or around the pilot project site which service around facilities will potentially see an increase in the demand for their products as the ripples of economic impact spread wider. This in turn will have an impact on maintenance costing, wear and tear for higher demand and higher number of users.
- Events: some new facilities change the local infrastructure and enable activities that were previously not possible to occur.

Although the major funding is under the Tessaban, there are several other budgeting finances to access, for instance, project-based funds, international public finance, and private sector finance. Such financial sources will significantly support the long-term

development of the Tessaban and also bind the relationship between the Tessaban and other financial agencies.

To gain such support, the Tessaban is required to competitively submit a proposal to mobilize financial resources into their sustainable development and management of public spaces. Thus, it is important to map what type and amount of finance is available and which stakeholders could potentially have an interest in funding. To do this, the Tessaban should keep updating potential funding sources of other public and private sectors and learn how to create a fundraising campaign with partners.

In this context, there are four types of potential financial sources to be tapped by the Tessaban. The details of each source are summarized below.



Source: JICA Project Team

**Figure 1.4.5 Potential Financial Sources**

**(1) Public Budget**

The bulk of government expenditure (over 80% between 2009 to 2012) is dedicated through the Annual Budget Expenditure Act and channeled through the Prime Minister’s Office, central fund, and ministries. There are three groups of budgets, namely resources allocated to ministries (based on functions and proposed strategies), budget for policy integration based on the government’s agenda, and budget allocated to area-based integration, for example, groups of cities or regional plans. The budget for policy integration is of particular interest to mainstreaming the master plan into city development policy as it allows the infrastructure parts of local government to work closely with other relevant stakeholders, for example, environmental department, Ministry of Tourism and Sports (MOTS), tourism entities, community development.

**(2) Project-based Fund**

Besides the existing public budget, there are public organizations working on a project grant basis. The remaining government budget is composed of funds of state-owned



enterprises which operate several issue-based projects on their strategies, for example, smart cities, smart farmers, community-based tourism.

Therefore, project-based funds are the special program set by organizations within a specific period. The objectives, requirements, and details differ year to year. However, project-based funding is an option for the TESSABAN which allows them to get some budget to implement projects related to their interested topics. Thus, the TESSABAN is required to submit their project proposals to the organizations' platforms.

Currently, the National Innovation Agency (NIA) is a public financing source which supports new initiative and specifically support cities' and communities' projects. Calls for application are available on different project focus each year. For instance, the upcoming project-based fund conducted by NIA is called City & Community Innovation Challenge 2022. This project emphasizes new innovations of a city. The details of this grant are summarized in Box 1. Besides this, the Thai Health Promotion Foundation also provides grants to cities to promote public health, as described in Box 2.

### **Box 1 National Innovation Agency (NIA) Grants for Innovation**

**Name of project:** City & Community Innovation Challenge 2022

**Details:** NIA provided an available grant for proposed innovation ideas, offering on an annual basis. Specific grant for 1,500,000 baht is now open for city and community innovation, offered for local government to submit a proposal to enhance art, well-being and health of the city and community.

**Application Date:** 1 August 2021 to 30 September 2021

**Consideration date:** October 2021

**Amount of Grant:** provides THB1.5 million to the successful applicants.

**Registration:** <https://social.nia.or.th/2021/city65/>

โครงการนวัตกรรมสำหรับเมืองและ  
ชุมชน ประจำปี 2565 (CITY &  
COMMUNITY INNOVATION  
CHALLENGE 2022)

เปิดรับสมัคร 1 สิงหาคม – 30 กันยายน 2564  
มูลค่าเงินรางวัลสูงสุด 1.5 ล้านบาท/โครงการ  
รายละเอียดและใบสมัครเพิ่มเติม <https://social.nia.or.th/2021/city65/>

โครงการนวัตกรรม NIA สำหรับเมืองและชุมชน  
มีจุดมุ่งหมายเพื่อส่งเสริมและสนับสนุน  
นวัตกรรมที่สร้างสรรค์และยั่งยืน  
“นวัตกรรมที่ขับเคลื่อนเมือง 2565” (City & Community Innovation)



### Box 2 Thai Health Promotion Foundation

**Name of Fund:** Thai Health Promotion Foundation Fund

**Details:** Interested person who are individual/ government agencies/ organization/ community/ clubs can apply for the financial support for the health-related projects that make a health behavioral change and solve the problem in such an area within proposed project's period (10-12 month). There are about 11 health related issues that can be applied for this fund which are alcohol and substance abuse control, tobacco control, road safety and disaster management, drug abuse protection and control, prevention of pre-pregnancy in adolescents, prevention of violence, healthy food promotion, physical activity promotion, healthy community strengthening, mental health promotion/emotional and stress management, and spiritual health pathway promotion.

**Amount of Grant:** Up to THB90,000. The budget does not support for purchasing durable goods, office costs and personal compensation excepting for speaker remuneration. Please note that the Thai Health Promotion Foundation provides an additional support of THB10,000 (only for actual disbursement). This supports the following issues:

- (1) Fee for making non-smoking and non-alcohol signs, project name sign with Thai health promotion foundation logo for up to THB1,000.
- (2) Report and internet fee for preparing interim report through online system for up to THB2,000.
- (3) Travel and accommodation expenditure to attend meetings with the Thai health promotion foundation for up to THB7,000.

**Period:** All year around. New applications start on 30<sup>th</sup> October.

**Application Form:** The application form is available on <https://www.thaihealth.or.th/>

### (3) International Public Finance

In Thailand, the impetus for city planning and strategies is often incubated through international support initiatives that are raising awareness about issues such as climate change risks, old town heritage preservation, creative cities and provide technical assistance to initiate the planning processes. The types of support will be varied in terms of technical or financial support. Also, some international agencies provide grants through awards to raise the awareness and encourage city development in different topics. Mainly, such international agencies like UNDP, UCLG, or European Union are focused on sustainable development and SDGs.

This international financial and technical support is similar to JICA's sustainable future initiatives and oftentimes being provided by industrialized nations to developing countries. For example, Thailand also receives international support related to the National Adaptation Planning process which could support climate adaptation and environmental related issues. An effective O&M needs a new skill set related to waste management, energy use, approaching this source of fund and expertise could help the O&M team achieve their goals. Examples of grants from international agencies are summarized in Box 3 and Box 4.

### Box 3 The World Organization of United Cities and Local Governments

**Name of Organization: United Cities and Local Governments**

**Details:** UCLG, as a global network of cities and local, regional, and metropolitan governments and their associations, is committed to representing, defending, and amplifying the voices of local and regional governments to leave no-one and no place behind. Together we are the sentinels of the hopes, dreams, and aspirations held by individuals in communities around the world -- searching for a life in which the ideals of the SDGs are a lived reality.

Through collaboration, dialogue, cooperation, and knowledge-sharing, we as a World Organization walk the walk, working to advance global response and action through groundbreaking commitments and agreements that become common threads that transcend borders and tie communities together, to uplift and empower the local level.

Note: Krabi has submitted a case study for the competition and now has been listed as part of this network.

Sources: <https://www.uclg.org/en/organisation/about>

### Box 4 SWITCH-Asia Grants Programme

**Name of Organization: Switch Asia funded by European Union**

**Name of project:** "SWITCH-ASIA Grants Programme"

**Details:** SWITCH-ASIA Grants Programme funds project across Asian countries towards sustainable city. The program has started since 2007 aiming to promote the sharing of knowledge and capacity building in local cities. the Grant Scheme will focus in particular on the external dimension of the EU Green Deal and of its focus areas, such as sustainable food-systems and circular economy.

**Application:** Submitting proposal within period. The last call proposal was on 3<sup>rd</sup> of November 2020 with the budget of EUR32,600,000.

**For more information:** [intpa-switch-asia@ec.europa.eu](mailto:intpa-switch-asia@ec.europa.eu)

Sources: <https://www.switch-asia.eu/grants-projects/about-grants/>

## (4) Private Sector Finance

Private sources of revenue can be accessed with clear purposes and clear shared objectives with the targeted corporations. The project cannot be financed solely from public sources. The built facilities need to promote usages and may also create sources of revenue to enhance the sustainable efforts for the facility's maintenance. When we look at the traditional forms of obtaining revenue in business, we typically look at donations of cash, gifts, in-kind contributions, and revenues from fundraising efforts.

Private finance, which is relevant to city development and provides various funding programs, is part of their CSR activities under their respective foundations. In this term, the participation of the private sector in urban development can be promoted through CSR mainly to share the social responsibility among stakeholders. This can be formed as social assistances, safety, social activities, environmental activities, energy activities, health activities or charity which can be realized for wider local communities. Several urban CSR projects in Thailand is in the form of private foundations. The foundation usually designs issue-based programs for each occasion. The program not only provides grants for project implementation but also for capacity and knowledge building of local governments and

stakeholders. Examples of CSR programs are:

- SCG Foundation has carried out Sharing Opportunities Program (Box 5);
- PTT Foundation's "Chum-Chon-Yim-Dai (Smiley Community) (Box 6); and
- Thailand Walking and Cycling Institute Foundation (Box 7).

In many cases, the facility can also earn some revenue for signage and other advertisements within the facility. The facility could be hired for private functions and get back for every ticket sold for events within the facility. Many times, to effectively finance the facilities, there is a need for a better relationship between municipalities and private entrepreneurs. The public sector has the authority to implement project funding through the governing process, while the private sector can contribute financing and management expertise in the facilities.

Even though there are advantages in combining funding and revenue resources, there are two major challenges to facilitate a successful public-private partnership.

- There is a legal risk associated with the project earning revenue and gaining profit.
- There is no clear procedure, and any agreed rules tend to be beached in the past when there was always room for flexibility.

Besides this, it is recommended that the OM team consider the influence of volunteers such as coffee clubs, dance clubs, and kids clubs. These established voluntary groups already own and control many activities. Rather than public authorities taking additional risks in trying to provide activities themselves, there is some logic in the strategy of incentivizing voluntary groups to open their facilities and organize activities in public spaces for the benefit of the wider community. An obvious example is the use of the facilities for after school clubs and as resources for young people to use during school holidays. It is widely accepted that voluntary groups can be used to help deliver wider government agendas such as health improvement, community cohesion, reduction in delinquency, and improvement in educational attainment. Some of these activities will be included in event calendars and can be used to incorporate O&M objectives.

### Box 5 SCG Foundation

**Name of project:** "Sharing Opportunities, Drawing the Future" Program

**Details:** SCG Foundation promotes and gives opportunities to SCG employees to use their capabilities to contribute to society and bring about various public service activities in collaboration with the community to promote sustainable community development. The program has taken part in strengthening the community in various dimensions, e.g., educational program, environmental stewardship, art and cultural promotion, and community relief in times of crisis like the COVID-19 pandemic in 2020. The SCG employees can form a group of 3 people or more to get the financial support to implement the project.

**Amount of Grant:** each project at a maximum of 50,000 Baht.



### Box 6 PTT Foundation

**Name of project:** "Chum-Chon-Yim-Dai (Smiley Community)

**Details:** The situation of COVID-19 outbreak cause the economic difficulty for communities, farmers, SME and community enterprises in Thailand. The project was established for helping particularly communities and farmers who are struggling with their product selling and services. PR and marketing via online platform are the main strategies used for promoting the existence of the community products in online markets and linking to the consumer's market.

**Online Market:** <https://www.thailandpostmart.com/ptt/>

**Shop Registration:** Applicants can regist their shops via this link [https://www.thailandpostmart.com/shop\\_register](https://www.thailandpostmart.com/shop_register)

**Shop qualifications:**

- The shop must have standard products or/and receiving awards certified by public and private organization such as FDA
- The shop selling the products that are under the following 5 product types
  - o Processing foods such as rice, chili pastes, processing fruits or snacks
  - o Non-alcohol beverages
  - o Clothing
  - o Souvenirs, decoration products or household goods
  - o Processing herbs such as herb teas, herb balms
- It must be the products from people, community enterprise, SE, SME, OTOP, collaboratives and community groups. The group/enterprise identification documents must be submitted such as the documents showing that manufacturer's name corresponds to the FDA certificate or community enterprise registration document.
- The shop has "e-mail" to register an account for the project
- The product prices that are showed in the website include the delivery fees and operation costs (20-25%)
- The product(s) can be sent via any branches of Thailand Post.
- The shop will received the money within 12-15 operating days after buyers received the product for preventing scam/fraud.
- The shop having online shops/pages eg. Facebook, Line, Line Official, etc. which can be easily accessed by consumers/buyers
- The shop is able to report sale to the PTT each monthly throughout the joining period.



**Box 7 Private funding sources: Thailand Walking and Cycling Institute Foundation**

**Name of project:** "The 7th Thailand Bike and Walk Forum; Think Globally, Bike Walk Locally"

**Period:** 9 – 10 March, 2018

**Details:** The first forum is established in 2013 for presenting the research program in local and community that were practically implemented in the areas. In the forum, policy determining, researchers, experts and local practitioners can exchange the knowledge and experiences. Besides, the successful case studies from the other countries can also be presented and shared by the internationally invited speakers from public and private sectors. The average participants are more than 200 people in each forum with more than 100 academic articles that have been presented in the 1<sup>st</sup>–5<sup>th</sup> forum.

**Presentation Topics:** Infrastructure and Physical, Transportation Network, Social Return on Investment (SROI), Bike Tourism Community, Policy and Law, User Behavior and the other related topics.



**3) Maintenance**

Maintenance plan is the establishment of clear guidelines for the maintenance of pilot project. Determining an area maintenance plan is an important aspect for site management. As the maintenance involves various physical elements, it is required to gain the instructions from specific experts. The objectives of maintenance guidance are:

- Advise or provide information about maintenance practices to person(s) or organization(s) in charge to ensure that maintenance of the site is performed well;
- Manage the routine maintenance activities such as cleaning up and maintenance of the facilities/equipment to be performed properly; and
- Monitor the routine maintenance plan and appraise the performance with alternative solutions (if any).

In carrying out maintenance operations, the O&M team is also responsible for doing inventory according to the physical components of the pilot site. It can be used to make a work plan for each inspection and maintenance cycle. Creating a checklist of assets makes it easy to plan in terms of recruitment, funding, and form of maintenance. The following table is an inventory management guideline completed from the pilot project. The O&M team must prepare the details of each part such as the amount of work in accordance with the working capacity and budget allocation. Third parties can be employed if the task is deemed appropriate. In addition, the O&M team is also required to keep tracking of any



damages or losses caused by inappropriate use, which may be used to prepare a repair or replacement plan.

The usage guidance, inventory of quality check, and maintenance guidelines for the pilot project are elaborated below.

- **Usage Guidance**

Component	Usage	Prohibited Use	Remark
1. Stage structure	<ul style="list-style-type: none"> <li>- Recreation area such as relaxation and picnic</li> <li>- Temporary performance space such as Music in the park</li> <li>- Community space</li> <li>- Check-in and photograph point.</li> <li>- capacity limited to 12-15 persons at a time.</li> </ul>	<ul style="list-style-type: none"> <li>- The misapplication of activities is not allowed in any cause in this area, for instance, skating, jumping, place an overweight or overload object such as container box, construction tools, machine, or vehicle, extreme impact such as dumping, throwing, kicking, and shooting the ball at the fin of the stage.</li> <li>- The damage from removing any parts from the stage is prohibited.</li> </ul>	<ul style="list-style-type: none"> <li>- Modifying, removing, or drilling the stage without the structure expert advisory or designer is not suggest.</li> <li>- After any natural disaster that causes damage to the stage area, the authority must discuss or consult with the structure expert for safety use matter of the stage.</li> </ul>
2 Lighting	<ul style="list-style-type: none"> <li>- Sufficient light for using activities at the stage and surround the area.</li> </ul>	<ul style="list-style-type: none"> <li>- Mistype of lighting specifications installation is prohibited.</li> <li>- Illegal acts, for instance, damaging or stealing, are prohibited.</li> </ul>	<ul style="list-style-type: none"> <li>- The lighting system is under the supervision of the division that takes responsibility for the public park.</li> </ul>
3. Control box	<ul style="list-style-type: none"> <li>- Use the control box for support activities.</li> </ul>	<ul style="list-style-type: none"> <li>- Using without allowance is prohibited.</li> </ul>	<ul style="list-style-type: none"> <li>- Use control box for any activity, for instance, stereo, must ask for allowance the division or the authority that takes responsibility for the public park every time before use.</li> </ul>
4. Drainage system	<ul style="list-style-type: none"> <li>- Drainage</li> </ul>	<ul style="list-style-type: none"> <li>- Dumping or littering in the manhole or on the ground around the banyan tree is prohibited.</li> </ul>	<ul style="list-style-type: none"> <li>- The tree and floor maintaining must be aware and careful, to prevent any damage to the drainage pipe underground.</li> </ul>
5. Landscape	<ul style="list-style-type: none"> <li>- To support tourism activities, such as photography, relaxation, landmark, and gathering area.</li> <li>- To support activities in the garden such as relaxation and picnic.</li> <li>- To support social activities such as gatherings, encounters, and meetings.</li> </ul>	<ul style="list-style-type: none"> <li>- Destroying of tree or lawn is prohibited.</li> <li>- Stealing pebbles is prohibited.</li> <li>- Changing part or coloring without allowance is prohibited.</li> <li>- Pet waste is not allowed in this area.</li> <li>- Public urination is prohibited.</li> <li>- Any form of an illegal act, such as a gang-up</li> </ul>	<ul style="list-style-type: none"> <li>- Warning or advisory is needed to install.</li> <li>- Barricade the area by using a fence is not recommended.</li> <li>- The CCTV systems are required to install for safety and invigilate.</li> <li>- Tree caring and tools are needed to follow a tree maintenance plan.</li> <li>- Any changing or moving the tree for each situation</li> </ul>

		activity, is prohibited by the law.	needed to ask the committee.
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Source: JICA Project Team

- Quality Check for Construction**

Component	Quality Checklist	Condition	Remark	Timeline	Responsible Organization
<b>Stage Structure</b>					
1. Stage Body	Pavement Surface - Are there any possibilities of risks to stumble.	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	N/A	Quarterly	Tessaban Mueang Chumphon, Division of Public Works
	Stage Edge - Is the Edge of stage without any crack. - Is the Edge of stage surface clean and spotless.	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	Cautions: temperature Changing affect the stage edge or wall to expand or shrink and lead to the crack issue. To prevent this issue, it needs to fix immediately.	Quarterly	Tessaban Mueang Chumphon, Division of Public Works
	Structure - Strong to carry people. - No crack and no damage.	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	N/A	Quarterly	Tessaban Mueang Chumphon, Division of Public Works
	Color Is the Loft fin polish work completed without any damage?	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	N/A	Annually	Tessaban Mueang Chumphon, Division of Public Works
2. Stage Fin	Corner beads Is the fin surface plastering completed without any crack?	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	N/A	Quarterly	Tessaban Mueang Chumphon, Division of Public Works
	Color Is the loft fin polish work completed without any damage?	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	N/A	Annually	Tessaban Mueang Chumphon, Division of Public Works
3. Slope (2)	Slope 1 (on stage) - Surface (smooth) - Durability - No crack, no damage	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	N/A	Quarterly	Tessaban Mueang Chumphon, Division of Public Works
	Slope 2 (at	• Good	N/A	Quarterly	Tessaban

	entrance) - Surface (smooth) - Durability - No crack, no damage	• Moderate • Low			Muang Chumphon and Division of Public works.
4. Steps	- Surface (smooth) - Durability - No crack, no damage	• Good • Moderate • Low	N/A	Quarterly	Tessaban Muang Chumphon and Division of Public works.
<b>2. Infrastructure</b>					
1. Drainage system	- No flood at the banyan tree and surrounds the area.	• Good • Moderate • Low	N/A	Quarterly	Tessaban Muang Chumphon and Division of Public works.
2. Lighting	L-3 (Downlight) - Light working. - Has the electrical wiring not been damage? - Switch - No damage - wiring sealed - Is the switch box ready to use.	• Good • Moderate • Low	N/A	Monthly	Tessaban Muang Chumphon and Division of Public works.
	L-5 (LED strip light) - Light working. - Has the electrical wiring not been damage? - Switch - No damage - wiring sealed - Is the switch box ready to use?	• Good • Moderate • Low	N/A	Monthly	Tessaban Muang Chumphon and Division of Public works.
	Control box - Switch for L3 and L5 - Unbroken and no damage - Is the switch box cap unbroken?	• Good • Moderate • Low	N/A	Monthly	Tessaban Muang Chumphon and Division of Public works.
<b>3. Landscape</b>					
1. Softscape	Lawn Pavement - No bumps and holes. - No other harms materials mixed with soils	• Good • Moderate • Low	N/A	Fortnightly	Tessaban Muang Chumphon and Division of Public works.

	- No damage				
2. Hardscape	Pebbles - No damage - Not lost	• Good • Moderate • Low	N/A	Fortnightly	Tessaban Muang Chumphon and Division of Public works.
3. Banyan Tree	- The banyan tree roots are in the appropriate length. - The banyan tree branches and leaves possible to process photosynthesis. - No dying branch because of the disease or bugs.	• Good • Moderate • Low	N/A	Monthly	Tessaban Muang Chumphon and Division of Public works.

Source: JICA Project Team

Remarks: Each item should be quality-checked by O&M team every month with a rating of the conditions and recommendations for action

- Good condition refers to no crack, no damage. The structure can be properly used and no harm for users.
- Moderate condition refers to some cracks and some damage. The structure can be generally used and no harm for users. (This stage should prepare for maintenance).
- Low condition refers to cracks and damage that can be harmful to users. (This stage should maintain its quality as soon as possible.)

#### • Maintenance Plan

Component	Maintenance	Timeline	Est. Budget	Responsible Org.
<b>Built</b>				
1. Stage Body	- Repainting color	2-3 years.	60,000 Baht.	Tessaban Muang Chumphon and Division of Public works.
	- Change stage pavement. (The material should be Ceramic floor tile wood pattern, size 15*60 cm, brown.)	In case when loss or damage appears on the stage pavement.	1,000 Baht. per Sqm.	
2. Stage Fins	- Polishing stage fin	2-3 years	10,000 Baht.	Tessaban Muang Chumphon and Division of Public works.
	- Repainting color	2-3 years.	20,000 Baht.	
3. Slope	- Cleaning the slope	2-3 years.	1,600 Baht.	Tessaban Muang Chumphon and Division of Public works.
4. Steps	- Cleaning the steps	2-3 years.	800 Baht.	Tessaban Muang Chumphon and Division of Public works.

Infrastructure				
1. Drainage system	- Cleaning the pipeline	2-3 years.	500 Baht.	Tessaban Muang Chumphon and Division of Public works.
	- Change manhole	In case when damage appears on the manhole.	1,800 Baht.	
2. Lighting	- Change downlight	In case when damage appears on the downlight.	15,000 Baht.	Tessaban Muang Chumphon and Division of Public works.
	- Change LED-strip light	In case when damage appears on the LED-strip.	30,000 Baht.	
Landscape				
1. Softscape	- Repaving new lawn	In case when the lawn is dying.	16,836 Baht.#	Tessaban Muang Chumphon and Division of Public works.
	- Mowing the overgrown lawn in the pedestrian and stage area.	Fortnightly	-	
	- Remove material, rock, or anything that causes injury to prevent harm.	Once a month or depend on situation.	-	
	- Remove weed	Twice a year.	-	
	- Watering lawn and soil to the sufficient moisture level makes lawn grown healthy and seasonal.	Every other day.#	-	
2. Hardscape	- Filling new pebbles.	2-3 years.	35,376 Baht.	Tessaban Muang Chumphon and Division of Public works.
3. Banyan Tree	- Cutting and decorating the banyan tree roots and remove the leaves on the ground.	Fortnightly.	-	Tessaban Muang Chumphon and Division of Public works.
4. Other trees	- Adding new soil for herbs and tree	Twice a year.	5,000 Baht.	Tessaban Muang Chumphon and Division of Public works.

Source: JICA Project Team

**Remark:** Timeline of each component can be adjusted along with quality checklist.

- **Recommendations for Maintenance**

#### **Custodial/Housekeeping aspects of routine maintenance**

Another important service in the facility is to ensure that it is clean and functional. This is where custodial and housekeeping services come in. Patrons do not want to come to a facility that is dirty or where simple items are not readily available. As with almost any other service, custodial and housekeeping can be outsourced or kept in-house. The O&M team should make decision whether this service will be in-house which offers more control over keeping the facility clean; however, depending on the size of the facility and the scope of the events, outsourcing may be inevitable. Ultimately, the goal is to provide responsive service to meet the needs of the visitors and the facility, and to enhance the quality of the

experience of facility users.

### **Reports on problems and damages**

All infrastructural problems and damages to facilities and equipment are detrimental to the continued operation of the facility. Shutting down facilities disrupts citizen's use and can be perceived as incompetence on the part of those running the facility. Hence, proper coordination of maintenance and repair is crucial to operation success. In general, all maintenance and repair needs that are discovered by the staff should be communicated to the facility or operations manager responsible for this area and documented on a maintenance form. In addition to reported maintenance and repair, managing staff should, on a regular basis, conduct an evaluation of all infrastructure and equipment to determine the status of its condition, and organize and coordinate appropriate remedies. Based on the severity of the problem or damage, the remedy will take one of the three ways:

- **Maintenance:** This refers to the work necessary to maintain the facilities and equipment. Maintenance includes periodic or occasional inspection, adjustment, lubrication, cleaning (non-janitorial), painting, replacement of parts, minor repairs, and other actions to prolong service and prevent unscheduled breakdown.
- **Repair:** This refers to restoring damaged or worn-out facilities and equipment, or to a normal operating condition. Repairs are curative, whereas maintenance is preventive. Repairs can be classified as minor or major. Minor repairs are those associated with maintenance activities that do not exceed 1–2 workdays per task. Major repairs are those that exceed 2 workdays per task or are beyond the capability of existing maintenance personnel.
- **Replacement:** This refers to facility and equipment components or systems need to be replaced. It is the exchange or substitution of one fixed asset for another having the capacity to perform the same function. Replacement arises from an asset becoming obsolete, having excessive wear and tear, or being damaged beyond repair.

#### **4) Administration and Promotion of Uses**

Administration and promotion of use aims to perform all the above responsibilities, the administration and promotion of uses (events) can be designed and considered as a supporting mechanism. The following basic roles of administration and promotion of uses are guided as follows:

- **Risk management**

The O&M team should also be proactive in sharing ideas and advice about risk management. Risk management is the process of preventing the possibility of loss from a hazard such as personal injury, property damage, or economic loss. Risk cannot be eliminated from the environment, but with careful planning it can be managed. Appropriate risk management practices are crucial to reduce legal exposure, prevent financial and human loss, protect facility assets, ensure business continuity, and minimize damage to the facility's reputation.

All members of the facility management team—from ownership to hourly staff and

volunteers—have a duty to act in a prudent manner and a duty of care to provide a reasonably safe environment for users of the facility.

It is important to recognize that from an operational standpoint, the major areas of concern within risk management involve dealing with the following:

- Non-critical injury/illness.
- Critical injury/illness (requiring emergency medical personnel).
- Appropriate use of alarms and warning signals.
- General emergency evacuation procedures.
- Evacuation of physically challenged persons.
- Dealing with: electrical power failure; facility operations management; fire;
- Other natural disasters; Other facility disasters.

- **Annual meeting and plan**

The O&M team should hold usual meeting routine to evaluate the O&M plan and also to formulate activities and events calendar or plan which serves to achieve the set mission. Event planning should incorporate the following concerns (energy and waste management which are outlined in the next section) into the O&M's discussion and provide clear procedures to operate. Also, O&M team should monitor the operation, realize the issues, and find solutions for any problem or concern from the users in order to make a decision for the further improvement.

- **Energy management**

Energy management is not a separate function but rather an activity that spans all aspects of the facility. Some of the traditional energy management measures include investing in energy-efficient equipment. However, electrical consumption control is the responsibility of all involved users of the facility. Examples include lighting in the park being turned off when not in use. Energy costs are among the biggest expenses for the facility. Taking steps to reduce these costs can significantly improve the operation of the facility by increasing the financial resources available for other areas.

- **Waste management**

Waste management and recycling are one of the most overlooked costs of the facility. While facility's main objective for reducing contribution to the local landfill is to cut costs, the social importance of environmentally friendly operations cannot be understated. Recycling mandates seem to be a trend that is starting to affect every city. The only way to reduce costs related to waste management is to reduce the amount of trash going to landfills, since landfill costs are determined by quantity. Therefore, it is encouraged that the O&M team put forward some mandates on waste management for the facility.

- **Administrative and Event Plan**

Table 1.4.2 provides administrative activities and promotion of use through various proposed events. The purpose of this plan is to develop skills of O&M team, to promote the economic activities, to generate incomes for local people, and to promote the use of pilot project area. To conduct activities smoothly and efficiently, Tessaban can support the



operation based on the following actions:

- Prepare a thematic event Terms of Reference (TOR) for an open bidding event.
- Coordinate with subgroups to implement events and activities based on the annual events and activities calendar.
- Formulate an annual event calendar with partners.

**Table 1.4.2 Administrative Activities and Promotion of Events**

Activity or Event Brief	Objective	Responsible Org.	Supporting Org.	Potential Financial Source	Month																		
					8	9	10	11	12	1	2	3	4	5	6	7							
<b>Learning, Planning and Monitoring Activities</b>																							
<b>O&amp;M Team Monthly Meeting and Networking</b> The meeting can be held on site. A list of the maintenance (as provided in table 4) will be used to oversee the status and conduct the quality check. The gathering at the park for the meeting can be an opportunity to share ideas and how SFCI should be further implemented. Food and Drink can be hosted by different parties each month. Community can take turns to showcase their products/produce/food/drink.	Review the status of the site	Tessaban	Community prepares Food and Drink	Tessaban																			
	maintenance report and approve recommended action sharing plan and integrate efforts to drive SFCI																						
<b>O&amp;M Team Mid-Year Workshop and Monitoring Progress</b> Tessaban will report on quality check and issues about the site and users. Guest speakers from private, public and communities should be invited to share knowledge: Possible topics: public space management, Energy efficiency management, kids' health and how the park can help kids grow healthy.	Monitor the status and quality of the facility	Tessaban	Community prepares Food and Drink	Tessaban																			
	Sharing knowledge to upskill O&M team																						
	Review rules and regulations																						
	Resolve any conflicts and brainstorm any required rules and regulations, make decisions on ways forward and re-allocating tasks to get the work done.																						

**Final Report, Vol. 2: Model City Projects**

Activity or Event Brief	Objective	Responsible Org.	Supporting Org.	Potential Financial Source	Month													
					8	9	10	11	12	1	2	3	4	5	6	7		
Waste management.																		
This gathering is organized as a Luncheon meeting & networking																		
<b>O&amp;M Team Exchange Learning Trip with Other Future Cities: preparing to host Ranong and other cities in the following year (reciprocal)</b> Plan to host Ranong O&M Team Prepare site inspection organize a visit and combine O&M team meetings between the two cities. Lunch or Dinner to learn about community products	Update the progress of city development and share O&M experiences&	Tessaban	O&M Team	Tessaban Chumphon and Tessaban Ranong														
	Brainstorm the future cities: and share knowledge about how to acquire financial sources.																	
	Conduct a 3 <sup>rd</sup> party quality check of the site																	
	showcase community (coffee, agriculture products)																	
<b>O&amp;M Team Exchange Learning Trip with Other Future Cities:</b> Contact Ranong SFCI team to organize a visit and combine O&M team meetings between the two cities.	See above	Tessaban	O&M Team	Tessaban Ranong and Tessaban Chumphon														
<b>Maintenance activities and Event</b>																		
Routine maintenance and quality check	Keep the facility intact	Tessaban	O&M Team	Tessaban														
<b>Sport day with planting event</b> (can be organized on a regular basis) OM team should brainstorm and propose themes,	Engaging stakeholders and raise awareness of environmental concern	Tessaban	Community Private sector and other	Donation of plants by invited sport or recreational clubs														

Activity or Event Brief	Objective	Responsible Org.	Supporting Org.	Potential Financial Source	Month													
					8	9	10	11	12	1	2	3	4	5	6	7		
<p>for example</p> <p><i>Theme one "Herbs and Dance for Health"</i></p> <p><i>Theme two "Walking with an afternoon tea in the park"</i></p> <p><i>Theme three "Banyan and the edible ground"</i></p> <p>Coordinate with sport club, senior club, kids club, youth club at school to gather at the park or the selected site to help trim tree, weeding and plant new trees under the selected themes.</p> <p>Representatives from each club donate plants and give short knowledge about them.</p> <p>Tasks can be allocated to Sport club to organize an activity, School club and senior club draw or paint a signage naming the plants.</p>		Community	public sector	All organizations contributing in kind (personnel, time and effort)  Private sector sponsor drinks and snacks														
<p><b>Big cleaning day</b></p> <p>(Tessaban has done this in the past and should keep up the good work)</p>	Engaging stakeholders and raise awareness of environmental concern	Tessaban	Tessaban Traffic controller Community O&M Team	Tessaban														
<p><b>Park car-free day</b></p> <p>Select an area (small) and announce in advance that on that day that area will be closed and will only allow pedestrians to access the area.</p> <p>Communities, vendor, artists can open a small shop with the concept "plastic free in our park"</p>	Promoting walkable city and healthy living  Keep the street and all areas in the park clean up	Community O&M Team	Tessaban Traffic controller	Tessaban Private sectors Communities														
<p><b>Park spring clean</b></p>	Promoting engagement and	Public sector	Tessaban	Tessaban														

**Final Report, Vol. 2: Model City Projects**

Activity or Event Brief	Objective	Responsible Org.	Supporting Org.	Potential Financial Source	Month												
					8	9	10	11	12	1	2	3	4	5	6	7	
Divide into teams to be responsible for each area of the park. For example Waste bin Furniture and equipment cleaning Fencing Running and sport track	waste management in the park. Keep the street and sidewalk around the park clean up	Street vendors around the park	Traffic controller Community O&M Team														
<b>(Zero) Waste competition</b> Target: street vendors around the park (in the park and along the street area) and offer a 1-day workshop on 3R for waste management) and give a certificate to the vendors for the best waste management.	Keep the street clean Promote environmental concern	Tessaban Traffic controller Community O&M Team	Public sector street vendors	Tessaban and private sectors													
<b>Cultural Activities and PR Event</b> (details of each event is elaborated in the following section)																	
<b>Fund raising event or CSR</b> (Details are shown as Event Example 1) Letter to invite private sector to propose and organize event and using venue of the pilot project with a specific theme each year For example "Art and craft in the park" and "Creative tourism and Food Fun Fair activities in the park" "Coffee festival"	To promote the use of the site  To raise awareness about the multi-functional of the site  To access financial source for the O&M activities	O&M Team	Tessaban Community Private Sector	Revenue from volunteer donation from the event organizer, product sales, and donation of 10% from each shop to O&M Team for the management of the site													
<b>Farmers market in the park</b>	To promote the use of the venue	Community	O&M Team	Tessaban													

Activity or Event Brief	Objective	Responsible Org.	Supporting Org.	Potential Financial Source	Month												
					8	9	10	11	12	1	2	3	4	5	6	7	
(Details are shown as Event Example 2)	To support healthy living with farmers organic or quality local products																
<b>Health and well-being: Weekend gathering</b> (Details are shown as Event Example 3) -Book reading and music in the park -Coffee, Tea, and free healthy living tips -Kids and my little tree day	To promote the use of the venue To promote health and well-being of the community	Community	O&M Team	Tessaban													
<b>SFCI Champion Award Day</b> (details of this event is provided in appendix as a case example of how the event could be organized)	To recognize the contributors and supporters of the O&M and SFCI	O&M Team	Community Public and private sector	Tessaban													

Source: JICA Project Team

- **Event Example 1: Fund-raising event or CSR**

**Name of Event:** “Open Space for the Event”: Park as an Event Venue

**Objective**

- To promote the use of the site
- To raise awareness about the multi-functional site
- To access funds for O&M activities

**Description and planning process**

The O&M team should issue a letter of invitation to prospective event organizers (either public or private organization, or both). The list of potential targets can be provided by local Chamber of Commerce and Tassaban. Letter should be issued by the O&M team to introduce the site and invite them to inspect the site for them to use the site as an event venue. The proposed events and using venue of the pilot project can be divided into 2 categories, which are 1) a specific theme and 2) open themes. The table below provides an initial example of the specific themes and potential targets.

**Table 1.4.3 Themes and Target Organizations**

<b>Theme</b>	<b>Letter Invitation / Confirmation Target</b>
1. “Art and craft with COCO collective in the park”	Chumphon Collective (ชุมพร คอลเล็กทีฟ โกล์ด์ชุมพร) @ChumphonCollective Agricultural cooperative
2. “Creative tourism and Food Fun Fair activities in the park”	University of MaeJoo, Chumphon Campus
3. “Coffee festival”	Tourism Authority of Thailand
4 Open thematic events (innovative, creative, and eco-friendly)	Hotels Members of the chamber of commerce Tourism council Agricultural association Schools and Vocational colleges

Source: JICA Project Team

Terms of Reference (TOR) should specify location and regulation of the use with a specific requirement for a volunteer donation or contribution for the maintenance of the site.

Proposal from invited target will be reviewed by the O&M team and grant an approval for the use of the park for suitable events. This advanced booking will enable better management of the promotion of use and the whole event will be fully organized by the targeted organization. The O&M team only monitors and reviews the compliance with the rules and regulations.

**Potential Financing Sources:**

Revenue from volunteer donation from the event organizer, product sales, and donation of 10% from each shop to the O&M Team for the management of the site.

Donation boxes can also be open for visitors to the site.



- **Event Example 2: Farmers market in the park “Healthy greenery family”**

**Name of Event:** Farmers market in the park “Healthy greenery family”

**Objective**

- To create a space for distribution of local products
- To create an exchange of understanding about local farmers and local wisdom
- To promote quality local products

**Description and Planning Process**

A proposal for the project can be submitted to Thai Health for a seed funding source.

The main focus of the event is to support local farmers who grow organic products and to provide a direct market to consumers. A designated zone for the market and vendors will be designed and agreed among O&M team. Agreement on number of local farmers/vendors will be allocated to suitable participants. It is important to impose on a “green and health educational market” concept for example a plastic free, food waste management demo, kids’ zone for local “Vegan tasty”, knowledge about local ingredients and how to cook local menu at home.

PR activities will be organized to promote the event in collaboration with Chamber of Commerce and Agricultural association. Market can be organized once a month; local farmer digital platform can be gradually developed.



Source: JICA Project Team

**Figure 1.4.6 Example of Farmers Market and Print Advertisement**

**Table 1.4.4 Tasks and Responsible Organization**

<b>Task</b>	<b>Responsible Organization</b>
<b>Pre-event planning</b> Proposal preparation Sponsorship plan Zone /shop designation and setup and decoration Stage performance Parking and Traffic flow and controller Special Bicycle zone Farmers Vendor inventory and management Environmental concerns and management Safety	O&M Team Vendor and participating shops/farmers Tessaban is a secretariat team
<b>Actual event day</b> Opening and closing Information center Stage management (if there is a performance, set timetable and queue) Health and first aid Volunteer safety team	O&M team will allocate each task to a suitable organization and form a community member to be a volunteer Vendor and participating shops/farmers Tessaban will be the coordinating body
<b>Post event</b> Cleaning Rechecking site for damages Evaluation of the site and the event	Vendor and participating shops/farmers
<b>Potential partner and funding source</b>	Thai Health National Innovation Agency TAT

Source: JICA Project Team

- **Event Example 3: Health and Well-being of Community: Weekend / special interest gathering under different themes**

**Name of Event:** Health and Well-being of Community: Weekend / special interest gathering under different themes

**Objective**

- To engage residents in a healthy living promotion/preventive measures
- To engage Tessaban with communities (opportunities to have feedbacks)

**Description and Planning Process**

Contact special interest group in the community and organize the event with the group/club. This gathering can be for a small group of people which meet every weekend. The following themes are some examples of the gathering activities.

**Table 1.4.5 Weekend gathering event**

<b>Topic/Theme</b>	<b>Responsible Organization/Department</b>
Storytelling: Book reading and music in the park	O&M team Tessaban, Director of Education Director of Health and Environment  Director of Social welfare

Coffee, Tea and free healthy living tips	O&M team Tessaban, Director of Education Director of Health and Environment  Director of Social welfare
Kids and my little tree day	O&M team Tessaban, Director of Education Director of Health and Environment  Director of Social welfare

Source: JICA Project Team

- **Example 4: Event: SFCI Champion: Congratulations**

**Name of the event:** SFCI Champion: the future is in your hands

**Objectives:**

- To recognize the committed individual who contribute to the success of the SFCI project.
- To embrace a spoke-person as “Ambassador” who has engaged in the entire process of the initiatives
- To celebrate and advocate that the success of the future city depending on “people”

**Description and process of the event**

Nomination of the champions and final selected champions will be contacted to compile a short profile. This profile will be shared on website, SFCI facebook page and Tessaban’s communication channel. A press release will be provided to the local media network via Tessaban and local stakeholders.

A recorded live presentation of the token of appreciation (award) while meeting champion on a “reality show” mood and tone. The video of all champions will be compiled to a short video with a short reflection of their involvement with the initiative and their view for the future. This video will be used as a testimony of the project.

SFCI Champion is nominated based on the following criteria:

- Understand the concept of SFCI
- Involve extensively in the entire process
- Play a significant leading part regardless of their rankings or positions
- Actively engage in the development of the project

**Profile:** a short profile of the Champion with a quote, addressing how the champion sees the future of the city and the reflection on the initiative

**Symbolic token of appreciation**

A brooch (a pin) and a certificate

The design of the brooch will be in AI format and can be re-produced by the appointed O&M team in the future. The design of the certificate is showed below and can be re-printed in the future.



Source: JICA Project Team

**Figure 1.4.7 SFCI Champion Pins**



Source: JICA Project Team

**Figure 1.4.8 SFCI Champion Certificate**

## **1.5 Lessons Learned**

Public space management is an essential element of city administration. Particularly, the development of public parks in the city center mainly improves the quality of urban life and enhances both physical and mental health. Efficient public parks also enhance the attractiveness of a city and provides an economic opportunity for the locals.

In Chumphon, the Arpakornkiattiwong Park is the main urban park. It is important for all parties to participate in public park development and management. These involvements help the Tessaban to realize their own potentials and understand current issues from different perspectives. With several discussions, all demands have been reflected in the park's development and design. Meanwhile, conflicts of interests among stakeholders have been mitigated and properly managed, since they have more empathy toward each other's situation.

Along the planning process, the involvement of multisectoral agencies, like public and private sector, citizens, and academic sector, has shown a positive result. It is useful for the Tessaban as those agencies have helped in identifying the issues in a focused way and supported the effort using their own resources, especially their knowledge. The Tessaban can fully utilize their own resources like budget, time, and human resources and avoid a duplication of activities so that it is a useful way to improve and fulfil their plans, programs, and projects effectively and efficiently.

Through the SFCl model city project, the partnership network is newly created. The need for close coordination with national and provincial government has been raised and acknowledged by all parties. In other words, the Tessaban has more chances to discuss and propose their plans or ideas. This increases opportunities for them to gain the support of those organizations. Similarly, the relationship among the Tessaban, the private sector, and communities has been elevated through the participatory process. On the one hand, the citizens (such as vendors and community leaders) have more chances to propose their ideas. As they are involved in all the process, the sense of belonging and trust have been built which make them take care of the city. On the other hand, the private sector can contribute their economic perspective to support the master plan and its proposed projects. In this perspective, the private sector can benefit from urban development, while they can give back to the community.

The advice from different sectors has also enhanced the capacity of the Tessaban. Firstly, the Tessaban gained experiences in planning which they can apply and utilize in the future. Also, they can exchange their experiences with other cities. The experiences from other cities not only give them an inspiration but also motivate them to achieve a sustainable city in the future. Secondly, the Tessaban gained professional knowledge from the pilot project. The construction of the pilot projects allows them to consider maintenance and maximize local resources. For instance, local herbs have been included in the detailed design to present their own identity while it can be further developed to be herb learning center. The O&M plan also gives them a good direction to maintain the park, secure the users, and organize events.

### **Way Forward**

The relationship among multisectoral agencies will be continually developed and strengthened. To sustain the partnership, stakeholders and participants should be periodically monitored and evaluated to ensure that all stakeholders are committed toward genuine participation. The public and private sectors are also expected to keep providing support for the city either through knowledge sharing or funding. Meanwhile, the community should be involved in monitoring and reporting of any issues or concerns to the city.

The pilot project should be sustained by good quality and maintenance. The O&M plan can be used as a guideline to recheck such activities. Discussions within the O&M team should be regularly held as part of the participatory process to share ideas for improvement and to report issues and concerns. The master plan and the detailed design for Zone H can also be presented in the O&M team to share the responsibility and gain ideas to receive support for the implementation of the master plan and/or the detailed design from other organizations.

It is also necessary for the Tessaban to monitor the master plan and projects to improve or adjust to meet the current situation. Also, their own capacity and resources to complete the plan also should be taken into consideration. The projects which are beyond the Tessaban's capacity can be proposed to the provincial cluster or provincial office. However, the Tessaban should be open-minded about other financial sources like project-based funds, international funding, and private funding. It will be a good step to learn the preparation of proposals and to create new partnerships from those organizations. Thus, it is essential to keep updating information on funding and preparing a proposal.

The promotion of uses and event plan should be continued and updated periodically. Considering the events as marketing strategies, the city can be well-recognized by public and private sector as well as visitors. This is possible not only to complete the implementation of projects and the master plan but also to generate incomes for the locals.

Exchanging experiences with other model cities will be useful for the Tessaban so the latter can learn from them regarding issues or challenges and best solutions. City to city learning will facilitate better policy making, knowledge transfer, and linkages.

## 2. Tessaban Mueang Ranong

### 2.1 SFC Plan, Program, and Projects

#### 2.1.1 Outline

##### 1) Location and Position in Regional Context



Source: JICA Project Team

**Figure 2.1.1 Location of Ranong Province**

Ranong, one of Thailand's southern provinces, lies on the west coast along the Andaman Sea. It has an area of around 3,298 km<sup>2</sup>, 86% of which is mountainous. Ranong is narrow and long with a length of about 169 km. The narrowest part is found in Kra Buri district where the width is around 9 km. Provinces neighboring Ranong are Chumphon, Surat Thani, and Phang Nga. To its northwest lies Kawthaung district in the Tanintharyi region of Myanmar.

Tessaban Mueang Ranong has an area of about 4.5 km<sup>2</sup>, which is about 0.13% of Ranong province's area. There are six (6) sub-districts in Mueang Ranong, including Khao Niwet.

##### 2) Regional Accessibility

Ranong has 1 airport located 22 kilometers away from the city center including domestic flights departed from Bangkok. The distance from Bangkok is about 568 kilometers which can be accessed via NH4 (Phet Kasem). The NH4 is the important one connected with Chumphon in the north of Ranong, Pang-nga in the south of Ranong. The highway number 4006 (Ratchakrut-Langsuan) connected with Patoh and Langsuan district of Chumphon and the highway number 41 (Laun-Sawee) connected with Sawee district of Chomphon in the east of Ranong.



### 3) Position in National and Regional Development Policy

Ranong is one of the focused provinces of SEC, which is a scheme to link the Andaman Sea, the Gulf of Thailand and countries along the Indian Ocean rim. Ranong is planned to be a hub for ocean transit linking with the Bay of Bengal for facilitating trade between countries in the Eastern Economic Corridor (EEC) and BIMSTEC.

Tessaban Mueang Ranong is a center of services, retails, markets, tourism facilities and attractions.

### 4) Ranong Urban Area

Ranong's urban area consists of Tessaban Mueang Ranong, Tessaban Mueang Bang-Rin, Tessaban Tambon PakNam, Tessaban Tambon Paknam-Tharau, Tessaban Tambon Bangnon and Tambon Administrative Organization (TAO) Hadsompant. Its total area is around 299.83 km<sup>2</sup> with a population of 52,549 as of 2017. The density about 175 people per sq.km.

### 5) Tessaban Mueang Ranong

Tessaban Mueang Ranong has a population of approximately 12,901 (as of 2017), which is also increasing. Its area is approximately 4.5 km<sup>2</sup> and its density is around 2,866 people per sq.km.

## 2.1.2 Current Situation

### 1) Economy

Ranong province has been driven by service sector (51%), agricultural sector (30%) and industrial sector (10%), respectively (Ranong Provincial Office, 2018). Tourism and retailing business are the main businesses sector under the service sectors. In Tessaban Mueang Ranong, trade is a main business which includes inter provincial trade and border trade. Tessaban Mueang Ranong's economic activities also consist of tourism, fishery, small-medium industry and service sectors.

Ranong province has been promoted as one of the alternative destinations of all main cities in Thailand. Ranong province has almost (1) million tourist arrivals in 2019 which has been increased about 6.8% from 2017. Ranong's tourism sector has recently generating the highest provincial income among all businesses particularly eco-tourism services. The growth rate of province generating from tourism sector between 2017 and 2019 was 9.45%.

**Table 2.1.1 Tourism Statistics of Ranong, 2017-2019**

List	2017	2018	2019	Rate of change 2017-2019
Number of hotels (places)	24	26	26	8.3 %
Number of rooms (rooms)	3,074	3,241	3,176	1.7 %
Number of visitors	808,915	880,989	923,243	6.8 %
– Thai people	763,058	830,706	870,793	6.8 %
– Foreigner	45,857	50,283	52,450	7.0 %
Average length of stay (days)	2.60	2.50	2.47	1.3 %
– Thai people	2.58	2.48	2.45	1.3 %

– Foreigner	2.93	2.80	2.80	0.0 %
Average cost (baht/person/day)	1,748	1,869	1,928	5.0 %
– Thai people	1,714	1,834	1,892	5.1 %
– Foreigner	2,240	2,345	2,451	4.6 %
Tourism income (million baht)	3,323	3,727	3,978	9.4 %

Source: Provincial Statistics Report 2019, Ranong Provincial Statistical Office

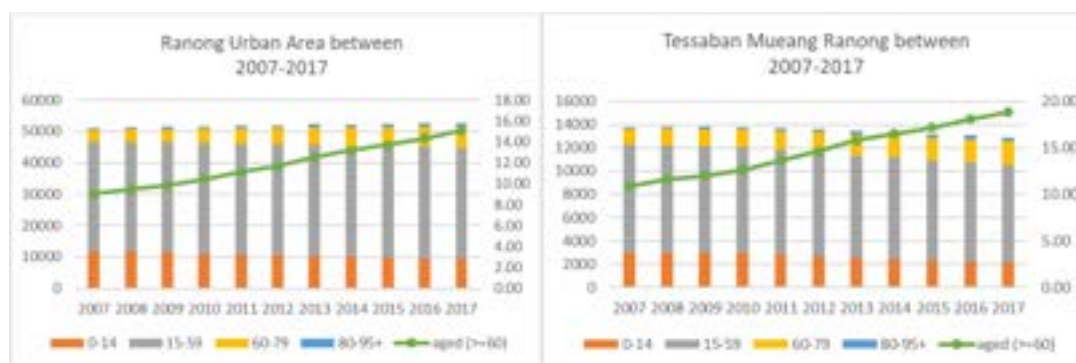
Even though Ranong’s urban area is limited for cultivation, the city itself has potential to be a crop distribution center. Rubber, palm oil, coffee and cashew nut are main agricultural products that are widely cultivated. Since Ranong is located along with the Andaman Sea, fishery industry is another business generating income for the province. Many fishing vessels use piers in Ranong for distributing aquatic animal across the country. The study from the Fish Marketing Organization shows that the about 50% of aquatic animal amount selling in Bangkok are from Ranong.

For the industrial sector in Tessaban Mueang Ranong, most of them are small industries in the form of industrial services to support public consumption. Most of them are industrial factories that have been licensed before 2013, since the current state of Ranong has densely populated areas, therefore unable to set up additional industrial plants. Except for some small factories only. At present, Ranong has 25 industrial factories, consisting of 240 workers.

The last part is the commerce sector. Within the Tessaban Mueang Ranong area consisting of wholesale and retail businesses 65% of motor vehicles and motorcycles, 5% administration and support, 5% transport and storage, 10% construction, agriculture Forestry and fishery 10% and real estate activities 5%.

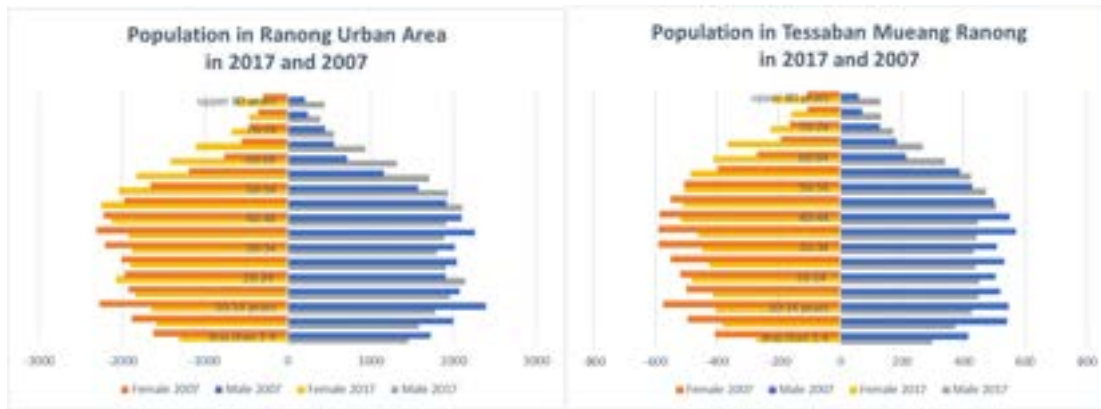
## 2) Society

Population of Tessaban Mueang Ranong has continuously decreased from 13,779 in 2007 to 12,901 in 2017 while the number of populations in Ranong’s urban area has increased from 51,037 in 2007 to 52,549 in 2017. The number of population over 60 years old both living in Tessaban Mueang Ranong and surrounded areas have continuously increased from 2007 to 2017 (Figure 2.1.2). Tessaban Mueang Ranong is nearly turning to an aged society since the aging rate closes to 19% in 2017. In addition, the dependency ratio in Tessaban Mueang Ranong was 48.17 % in 2007 and has increased to 55.11% in 2017. Over half of dependents will not only impact on the medical services but also Tessaban’s tax collection.



Source: JICA Project Team

**Figure 2.1.2 Population Trend in Ranong’s Urban Area and Tessaban Mueang Ranong**



Source: JICA Project Team

**Figure 2.1.3 Population Pyramid in Ranong’s Urban Area and Tessaban Mueang Ranong**

There are several educational institutions serving for primary education and secondary education including vocational colleges in Ranong province. However, Suan Sunandha Rajabhat University Ranong campus is only one tertiary or higher education in the province. There are 8 primary schools and 1 secondary school located within the Tessaban area. Lack of higher educational institution is one of the factors causing people’s move-out particularly for young generation seeking for university. For medical services, there is 1 public health center and 1 hospital located in Tessaban area. It should be noted that even if the hospital is located in the city, Ranong is still facing the insufficient medical services.

The employment rate and unemployment rate in Ranong province are 98.75% and 1.25%, respectively. About 43% of the total workforce is in agricultural sector whereas the other 57% is in non-agricultural sector (as of 2019) including retail, production, hotel, restaurant, construction and administration sectors. Ranong where its boundary is connected to Myanmar has high number of Myanmar migrant workers following by foreign migrants from Cambodia and Laos. According to the data from Migrant Worker Office (2019), the number of foreign migrant workers are about 41,365 people. The number of foreign workforces seem to be high when comparing with the number of population and the size of the province. Therefore, there is an issue on lack of employment opportunities in Ranong including Tessaban Mueang Ranong particularly for Thai people. It is because of the daily wage for foreign migrants that is much lower than Thai workforces.

### 3) Environment

Environmental resources in Ranong are rich and plentiful. There are 2 types of forests in Ranong which are land forest and mangrove. More than 50% of the province area is land forest. It clearly shows that Ranong is one of the provinces having the large green path in Thailand. Besides, the number of forest areas in Ranong had hardly decreased for the recent year.

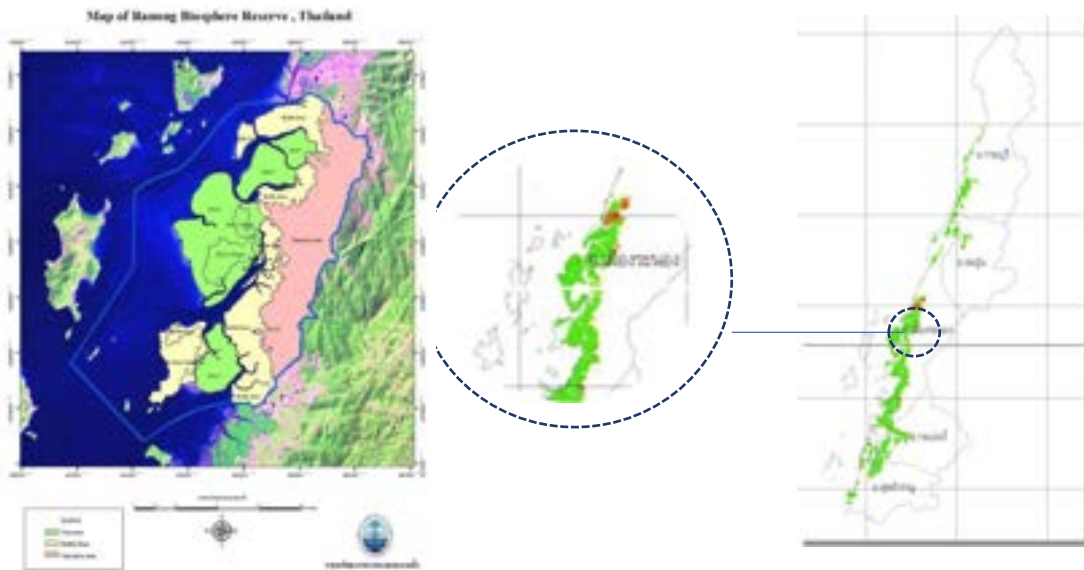
**Table 2.1.2 Forest Area in Ranong in 2008–2014**

Year	Forest Area (sq.km.)	Forest Area (%)	Year	Forest Area (sq.km.)	Forest Area (%)
2008	1,791.8	54.33	2012	1,724.82	53.41
2009	1,694.99	52.56	2013	1,722.75	53.34

2010	1,726.42	53.53	2014	1,728.97	53.54
2011	1,717.54	53.18			

Source: Forest Land Management Office website

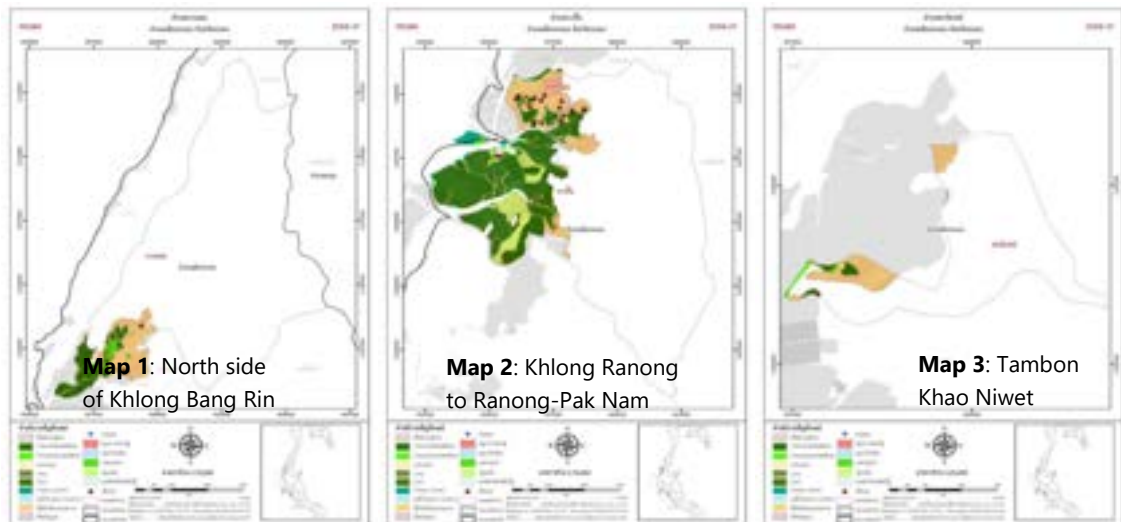
Interestingly, Mangrove in Ranong has been preserved as a Biosphere Reserve that has been internationally recognized under the Man and Biosphere Program (MBA) of the UNESCO Organization. This area is one of the largest and richest mangrove forests in the region. This is the Thailand’s first biosphere reserve that meets the Seville Strategy and Statutory Framework for the World Network of Biosphere Reserve. There is total 39 vegetation species found on the mangrove in Ranong. It is interesting to note that Ranong mangrove can absorb about 2.481 million tons of carbon dioxide. It clearly shows that the mangroves in Ranong are vital and needed to be preserved and rehabilitated.



Source: Department of Marine and Coastal Resources: 2018

**Figure 2.1.4 Map of Ranong’s Biosphere**

There are approximately 14.33 sq.km. of mangrove areas located in Tessaban area. One of the mangroves in the Tessaban is created as a “Mangrove in The City Centre” as a tourist attraction, recreational area and educational area. This area was a deteriorated mangrove and has been rehabilitated in accordance with the cabinet resolution. The new trees have been continuously planted to improve the mangrove area and enhance the ecosystem diversity.



Source: Department of Marine and Coastal Resources: 2018

**Figure 2.1.5 Mangrove Area in Tassaban Mueang Ranong**

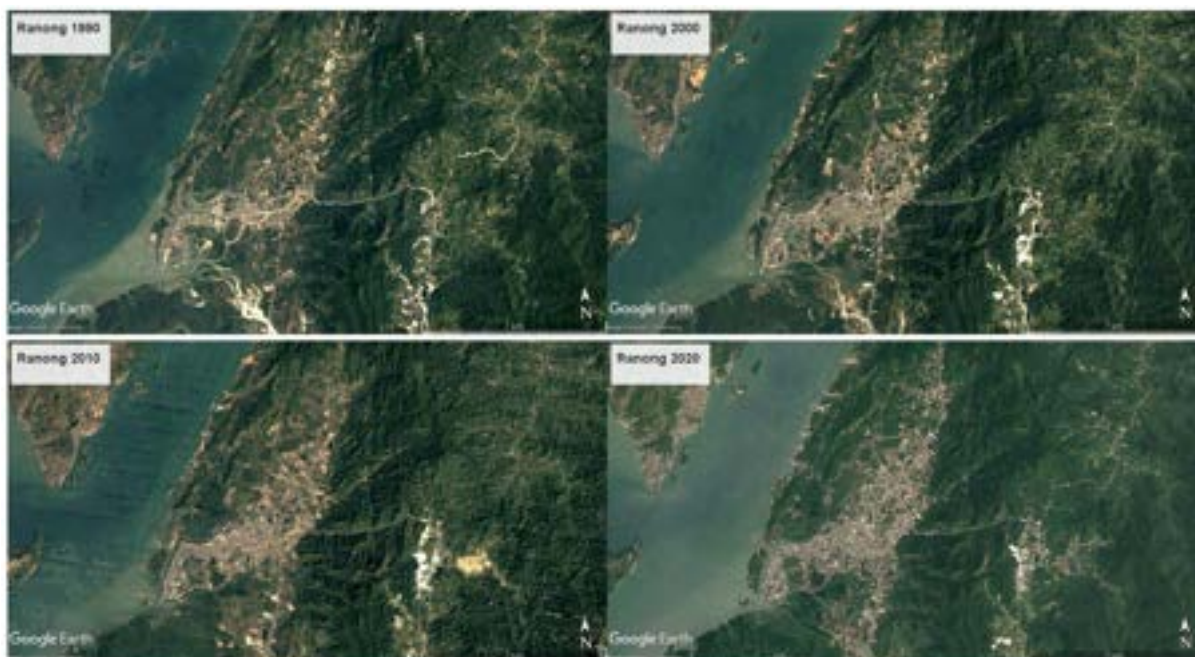
The large number of forests and mangroves around the province leads to the good air quality in Tassaban Mueang Ranong. There are 2 canals located in Tassaban area; Rong Hat canal and Hat Som Phant canal. There are about 2,892.75 cubic meter of wastewater generated per day as of 2019 from Tassaban area. Hat Som Phant canal has been contaminated since the canal runs across the city. However, the quality of the canal has been improved according to the study on Water Quality Index (WQI) by Ranong Provincial Office of Natural Resources and Environment in year of 2019.

While there is no landfill located in Tassaban Mueang Ranong, private disposal sites are located in the responsibility area of Tassaban Tambon Pak Nam-Tharue. It conducts a landfill excavation every day, and its task involves sorting and sending all wastes to make materials (instead of RDF fuel) and delivering to a private company (SCG). Garbage is currently from Tassaban Mueang Bang Rin, Tassaban Mueang Ranong and Tassaban Tambon Pak Nam about 80 tons per day and these are managed by the SCG. The situation remains vulnerable as it may dependent too much on one single company who is now managing solid waste for the cities. As for the amount of solid waste as of 2020, approximately 30 ton of solid waste were generated per day in Tassaban area. About 22.26 ton was disposed and about 7.74 ton was reused every day. It should be noted that the waste about 12.26 ton was incorrectly disposed per day.

#### **4) Urban Development and Infrastructure**

Ranong is surrounded by mountains and mangroves and thus has limited plain area, which causes the expansion of the built-up area both northward and southward along NH4. It is clearly seen that the built-up area has been increased gradually from 1990 to 2020 (see Figure 2.1.6).





Source: JICA Project Team

**Figure 2.1.6 Urban Expansion in Ranong, 1990–2020**

The Ranong Provincial Electricity Authority provides electricity for Ranong, and two (Bangnon) electric stations provides electricity for the Tessaban area. Tessaban Mueang Ranong is responsible for the installation, maintenance, and collection of electric bills. As for waterworks, Tessaban Mueang Ranong is responded by Ranong Provincial Waterworks Authority with 23,040 cubic meter/day productivity, 21,365.35 cubic meter/day capacity, 14,840.35 cubic meter/day sales and 18,141 users.

NH4 is the main road for the access to Tessaban Mueang Ranong. Nevertheless, NH4 does not link with the city center. Tessaban Mueang Ranong has the following 14 roads.

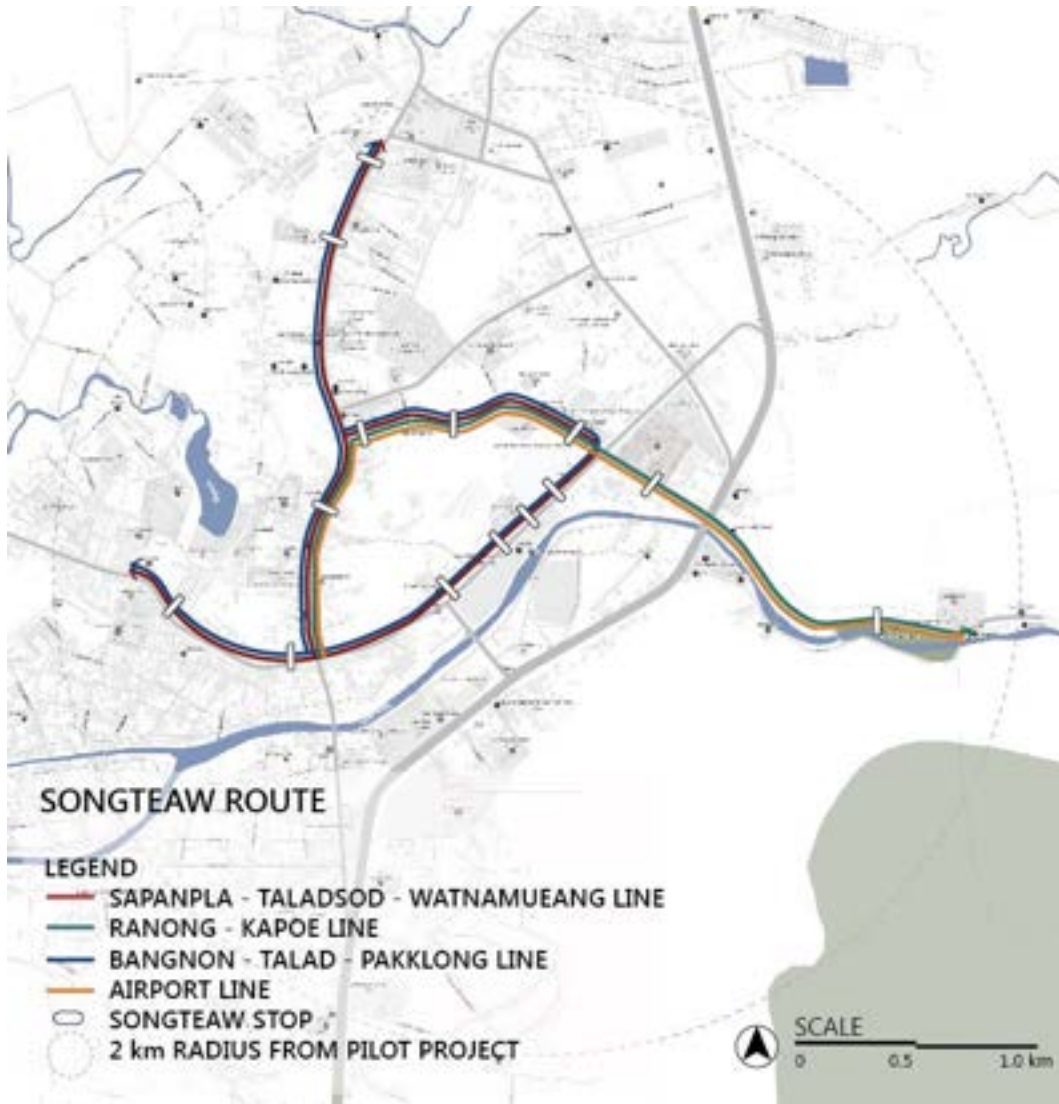
**Table 2.1.3 Road information in Tessaban Mueang Ranong**

Number	Road Name	Width (m)	Road Lamp	Waterspout
1	Tha mueang Road	12.00	Yes	Yes
2	Ruengrat Road	12.00	Yes	Yes
3	Chatchalerm Road	12.00	Yes	Yes
4	Permphon Road	12.00	Yes	Yes
5	Chonraau Road	14.00	Yes	Yes
6	Luwang Road	12.00	Yes	Yes
7	Kamlangsap Road	11.50	Yes	Yes
8	Dabkadee Road	14.75	Yes	Yes
9	Taweesinka Road	8.00	Yes	Yes
10	Phadard Road	14.00	Yes	Yes
11	Ratpanich Road	7.80	Yes	Yes
12	Kijpadung Road	8.20	Yes	Yes
13	Bamrongsathan Road	6.00	Yes	No
14	Tha mueang (Chalermprakeit) Road	25.00	Yes	Yes

Source: Tessaban Mueang Ranong, 2019

In Ranong, songteaws, local transportation parked at the airport take tourists to the main tourist attractions and to the city. There are currently the following 4 main routes of songteaws running through the city.

- (1) Red Line: Sapanpla-Taladsod-Watnamueang
- (2) Blue Line: Ranong-Kapoe
- (3) Dark Blue Line: Bangnon-Pakklong
- (4) Airport Line



Source: JICA Project Team

**Figure 2.1.7 Songteaw Routes in Tassaban Mueang Ranong**

## 5) Urban Management

Ranong is quite strong in terms of city visioning. Both province and municipality strongly aim to develop the city toward "Health Tourism". Even though local politics of the Tassaban is unstable and that affects the smoothness of project implementations, the Tassaban's staff are willing to collaborate with and involve into other organizations, private sectors and communities as much as possible.



### **2.1.3 Future Perspective under Current Trend**

#### **1) Economy and Society**

The economy of Ranong is valued from trade particularly border trade, which create more export value than national average. Moreover, the national development policy regards Ranong as a potential area for developing and linking with EEC and BIMSTEC. On the other hand, when it comes to border trade, most trade benefits go through the countries and left less benefits to the residents.

The Tessaban's area has been recently earned a reputation of the wellness tourism and eco-tourism destination. The existing resources such as hot springs, surrounding large forest paths and rich mangroves definitely attract travelers who have passion in eco-tourism to visit Ranong city. With the national policy and development directions, the Tessaban will be the world class health and wellness destination in the near future. This will create jobs and business opportunities in health and eco-tourism sector.

Moreover, Tessaban Mueang Ranong has a sustainable future perspective to pursue the city of ageing well. This is not just about preventing illness and disability, but about maximizing physical and mental health and wellbeing, independence and social connectedness as people age. Elderly people can make a significant contribution to the society economically, socially and intellectually as mentors, leaders and skilled workers and volunteers. Therefore, an approach for a healthy ageing society should be sought to enable elderly people to keep active, engaged and enjoying their lives.

Even though the number of populations in Tessaban Mueang Ranong has been decreasing, the aging rate has continuously increased. It is shown that the birth rate of population in the Tessaban area tends to decline, and the working group population will be lacked in the future. However, Ranong connects to Myanmar and thus there are expected to be high number of migrant workers. Therefore, there is a possibility that the domestic workforce in the future will be replaced with those foreign workers. Although local people and foreign workers live together in harmony with positive multicultural acceptance, the future development of Ranong should be continuously implemented toward the multiculturalism.

The point that should be considered is many Thai workforce may be unemployed due to cheaper wage of foreigner migrants and Thailand 4.0 policy aiming to drive the economy through technology and human capital development. Human capacity development is vital for people in Ranong to increase competitiveness against foreign labor in the future.

#### **2) Environment, Health, and Wellness**

Many environment conservation policies from various levels have currently been focused on Ranong. The large greenery paths in the province will be surely preserved. Considering the limited development spaces due to its geographical condition and richness of natural resources, healthy and green tourism should be highlighted. It would be better for Ranong to concentrate on a quality of tourism rather than the quantity such as the number of visitors per year.

There are many assets that will drive Ranong toward health and wellness city. For example, Mineral water from hot spring will provide benefits not only for tourism, but also for health

purposes. This wellness can include both improving emotional well-being, such as stress reduction and calming the mind, and healing or rejuvenating the body. With the abundance of natural resources, Ranong can easily be recognized as a health and wellness city with the pure air and thermal comfort.

## **2.1.4 Assessment of Sustainability**

### **1) Economic Sustainability**

There are lot of resources and assets for Tessaban Mueang Ranong to sustain its economy. Firstly, the city has natural resources particularly hot springs that can attract people around the country to visit the city for wellness and eco-tourism. Secondly, the city center has a unique agricultural building that can be found only in the Southern provinces called "Chinois Postugess" As the number of visitors has gradually and slowly increased through alternative destination promotion, the city has a chance to plan and promote sustainable tourism by taking advantage of a lot of useful resources. However, innovations and sustainable developments in the city are also required. In the Tessaban, there is a lack of investments by both private and public sectors. If the facilities and innovations are properly developed, Tessaban Mueang Ranong can be one of the cities sustained with tourism.

### **2) Social Sustainability**

As mentioned above, the Tessaban is turning to aging society in the near future. Apart from the hospital, activities and facilities for the elderly are also rewquired for enhancing both physical and mental health of elderly people. Although primary and secondary schools are well provided in the Tessaban area, many youths have to relocated for enrolling in university in other provinces since the Tessaban has only Suan Sunandha Rajabhat University Ranong campus. Some new generations have returned to their hometown to work at small café, hotels and businesses in the city particularly for the businesses along Rueang Rat Road. There are some opportunities for tourism-related services that can enhance the future sustainability. It is interesting to note that local people live in harmony with foreign migrants in Ranong. Therefore, Ranong can be developed socially sustainably especially as inclusive diversity city.

### **3) Environmental Sustainability**

Environment of the city is in a good condition because the city is surrounded by abundant natural resources. The Tessaban conserves the environment well. The small city with decreasing population like Tessaban Mueang Ranong may face less environmental issues than other larger cities where the urbanization keeps on growing. However, the policies and strong regulations are needed to enhance or at least maintain its richness of natural resources. In the past, some mangrove areas were deforested, but the others have been continuously restored such as a Mangrove in The City Center. If the Tessaban keeps promoting such efforts, Ranong's environment will definitely be sustained. Environmental sustainability will benefit not only the city's climate and atmosphere, but also local economy. As the city has better air and water quality, it conserves natural resources which will be utilized to create better services for health and wellness tourism.

## 2.1.5 Review of Existing Plans

The LSDP and the Comprehensive Plan for Tessaban Mueang Ranong were reviewed based on the viewpoints mentioned above.

### 1) Local Strategic Development Plan

Tessaban Mueang Ranong’s vision is “Being the head of health tourism and livable city with well-being.” The strategies comprise six main components, which are summarized in the table below.

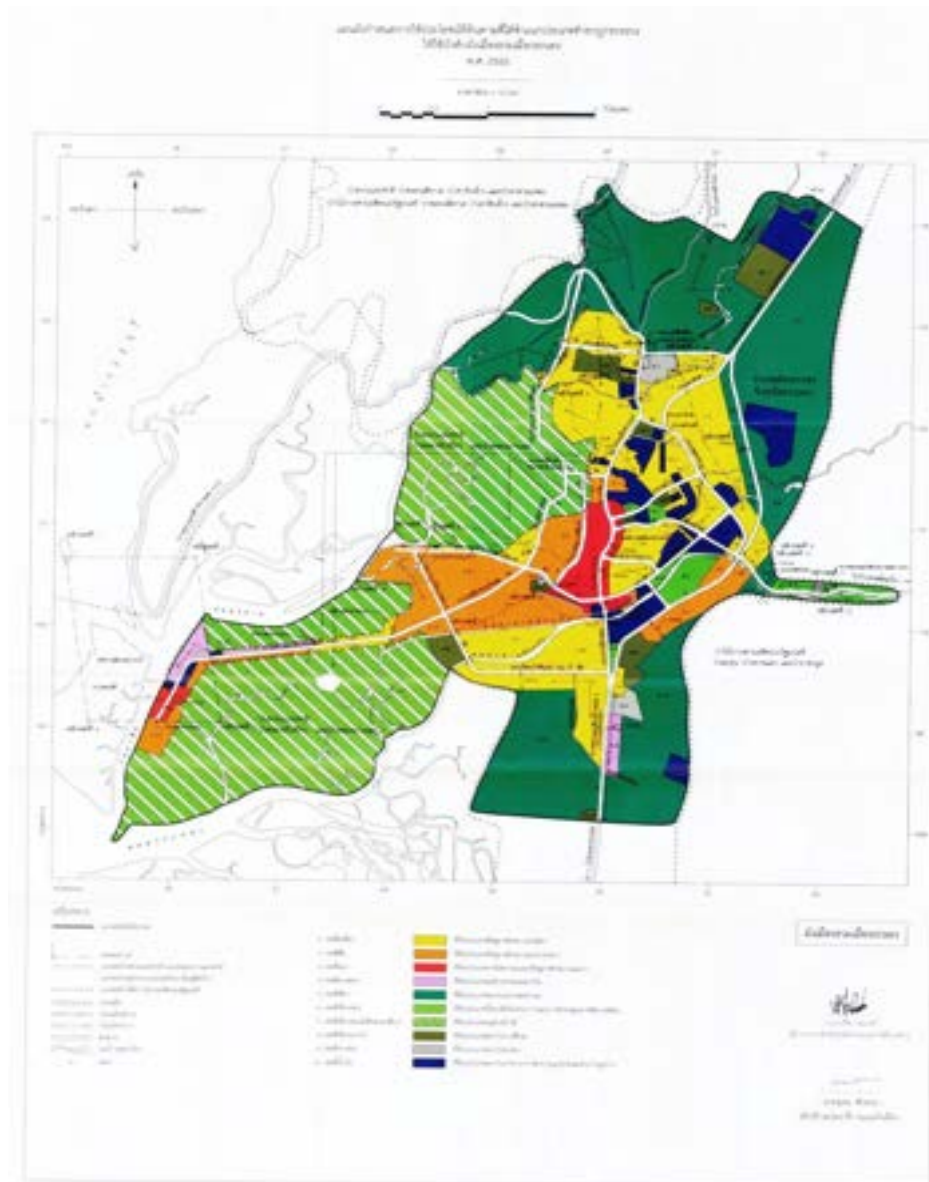
**Table 2.1.4 Tessaban Mueang Ranong’s Strategies  
in the Local Strategic Development Plan**

Strategy	Development Guideline
1. Infrastructure Development	1) Develop standardized transportation routes including street and traffic lights, utility, and facilities
2. Education Development	1) Improve the quality of both formal and non-formal education systems
3. Economy and Tourism Development	1) Create jobs and generate income for local people 2) Promote health tourism and eco-tourism
4. Social and Welfare Development	1) Enhance the quality of people’s life and sanitation 2) Strengthen and protect community from drugs 3) Improve security of property and life 4) Promote art, culture, tradition, religion, and local wisdom
5. Environment and Natural Resource Management	1) Develop solid waste management and wastewater treatment systems including air quality improvement 2) Support natural resources and environment organization
6. Administrative Development	1) Promote city management with good governance 2) Support democracy 3) Develop workplaces, tools, equipment, and services

Source: JICA Project Team

### 2) Comprehensive Plan

Figure 2.1.8 shows Tessaban Mueang Ranong’s Comprehensive Plan. The Tessaban’s area is an old town, and the center of the city contains shops, restaurants, leading markets, and business offices. As the western side is surrounded by mangroves, most of the areas around the city is classified as a “forest conservation type” and will not be able to be developed into any other purposes.



Source: Tessaban Mueang Ranong, 2019

- Note:
- (1) Yellow zone: Low-density residential zone
  - (2) Orange zone: Medium-density residential zone
  - (3) Red zone: High-density residential zone and Commercial zone
  - (4) Purple zone: Specific industrial zone
  - (5) Green zone: Rural and Agricultural zone
  - (6) Light green zone: Open space for recreation and environmental quality zone, including recreation place, Rattananarangsana pocket park, playground, Health Park, Ranong stadium, Raksawarin arboretum, and Raksawarin hot spring
  - (7) White with green diagonal zone: Rural and agricultural conservation zone, such as national forest, Klong Huakeaw forest, and Klong Koh Samui forest
  - (8) Olive green zone: educational zone is included the area
  - (9) Grey zone: Religious zone
  - (10) Blue zone: Government, public utilities and amenities zone

**Figure 2.1.8 Land Use Zoning of Tessaban Mueang Ranong**

### 3) Provincial Strategic Development Plan

The vision of Ranong Province is "Healthy tourism town, leading agriculture, creating a

pleasant city with good public health, and the gateway through the Andaman coast". The plan has substantiated the pathways to achieve the vision, stating that Ranong has outstanding potential to develop as a leading regional health tourism city by utilizing the high-quality hot spring water situated in the midst of beautiful natural forest. With an opportunity to connect internationally, Ranong's border has the second highest border trade, behind Mae Sot, Tak province. Tourism in Ranong is now well connected to Myanmar and could further be developed to link to Yangon of Myanmar, the islands in the Andaman Sea, especially the Mergui Islands. The door is open for Ranong to connect its trade and tourism with both ASEAN countries and ASEAN plus through Myanmar.

Moreover, Ranong has unique and competitive natural resources as a good basis to become known for health tourism destination internationally. By further development of facilities, services and products offered in conjunction with its hot spring, mineral water, the main products and attractions could stimulate more innovation. The following development issues are outlined in the plan:

- Development issue 1: Being a leading health tourism city to compete both domestically and internationally, including creating jobs and generating income for the community
- Development issue 2: Stable community development in line with the sufficiency economy philosophy.
- Development issue 3: A livable city with sustainable well-being among people.
- Development issue 4: Ranong Province is the gateway to trade through the Andaman coast, linking trade and investment of Thailand, ASEAN and BIMSTEC countries.

## 2.1.6 Sustainable Future City Plan

### 1) Future Vision

Vision of Tessaban Mueang Ranong is "Being the head of health tourism and livable city with well-being".

### 2) Issues to Address

To realize the vision, the following key issues need to be considered:

- Rich cultural assets and environmental resources particularly mangroves and hot springs for health and wellness tourism
- Lack of investments by private and public sectors in innovating hot spring sites and related health and wellness facilities.
- Product innovation leveraged from hot spring
- Model for inclusive diversity wellbeing and multi-cultural living environment
- Insufficient healthcare facilities

### 3) SWOT Analysis of the Vision

**Table 2.1.5 SWOT Analysis for Sustainable Future City Plan**

Strength	Weakness
<p><b>Economy</b></p> <ol style="list-style-type: none"> <li>1. Agricultural-based economy (Rubbers, Palm, Coffee, Cashew nuts)</li> <li>2. Rich cultural assets and tourism resources for health and wellness tourism</li> <li>3. Sufficiency practices (household debt is low)</li> </ol> <p><b>Social</b></p> <ol style="list-style-type: none"> <li>1. Multi-cultural living town</li> <li>2. Safe city (criminal cases are low, ranked 74 lowest in Thailand)</li> </ol> <p><b>Environment</b></p> <ol style="list-style-type: none"> <li>1. Internationally well-recognized value as a bio-sphere reserve</li> <li>2. Rich national resources for health and wellness (for example hot spring water)</li> <li>3. Urban forest-Proximity of the center district: Tessaban Muang Ranong is situated next to mangrove forest</li> <li>4. High green area space</li> </ol> <p><b>Urban/Infrastructure</b></p> <ol style="list-style-type: none"> <li>1. Charming and attractive small town</li> <li>2. Unique local transportation (wooden bus)</li> <li>3. Unique cultural street</li> <li>4. Well-equipped for cycling and walking</li> <li>5. Available airport connectivity to main attractions</li> <li>6. Facility for walkability and cycling</li> </ol>	<p><b>Economy</b></p> <ol style="list-style-type: none"> <li>1. Lack distribution hub for agricultural produces</li> <li>2. Lack an advancement of food processing and food innovation</li> </ol> <p><b>Social</b></p> <ol style="list-style-type: none"> <li>1. Insufficient health care facilities (hospitals) and doctors</li> <li>2. Limited number of tertiary education providers in food related curriculum</li> <li>3. Lack of people network between cities</li> </ol> <p><b>Environment</b></p> <ol style="list-style-type: none"> <li>1. No water treatment system in place</li> </ol> <p><b>Urban planning</b></p> <ol style="list-style-type: none"> <li>1. High population density</li> <li>2. Lack systematic management of people mobility around inner city (Centre Business District-CBD), resulting in traffic congestion during rush hours.</li> <li>3. Lack of events and social activities to create city attractiveness (limited activities to attract tourists/residents to visit center district)</li> <li>4. Lack public transports for travelling route</li> <li>5. People mobility in the city (lack of walking area, bicycle lane)</li> <li>6. Lack unique character</li> <li>7. Lack expertise in sustainable town planning</li> </ol>
Opportunity	Threat (Anticipated Problem)

<p><b>Economy</b></p> <ol style="list-style-type: none"> <li>1. Thailand 4.0 is promoting food processing and food innovation</li> <li>2. Growth of smart farming system</li> <li>3. Gastronomy Tourism is in high demand</li> <li>4. Unique food gifts are in need</li> <li>5. Growth of global tourism and regional tourism (for example ASEAN)</li> <li>6. Being part of the Southern Economic Corridor (SEC) development             <ul style="list-style-type: none"> <li>-infrastructure upgrading (road, rail, sea and air connectivity)</li> </ul> </li> <li>7. Part of the (55) secondary cities for better tourism dispersal campaign by TAT</li> <li>8. Growing opportunities with Twinning cities-Ranong</li> <li>9. Growth in technology advancement</li> </ol> <p><b>Social</b></p> <ol style="list-style-type: none"> <li>1. Increase in health-conscious society</li> <li>2. Shaping elderly-friendly city</li> </ol> <p><b>Urban and infrastructure development</b></p> <ol style="list-style-type: none"> <li>1. Rail connectivity from -and- to Bangkok and from- and- to Malaysia</li> </ol>	<p><b>Economy</b></p> <ol style="list-style-type: none"> <li>1. Heavily depend on labor intensive in agricultural sector, impediments to innovation</li> <li>2. Growth of organic farming and care for the safe and livelihood of the farmers (no evidence of organic farming movement in place)</li> </ol> <p><b>Environment</b></p> <ol style="list-style-type: none"> <li>1. Lack systematic plan for identifying climate risks and climate change adaptation (extreme weather disrupted residents, tourism and businesses)</li> <li>2. Lack systematic waste management, depending heavily on landfill (power plant is in process)</li> <li>3. City has no water treatment system which could tarnish its reputation as environmentally consciousness is pertinent.</li> </ol>
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Source: JICA Project Team

#### 4) Basic Direction

Based on the analysis mentioned above, an identification of critical problems and significant potentials could be summarized that Ranong has a harmony of multicultural society and could be enhanced further to become a multicultural city. Achieving sustainable city development must therefore consider how to include their diversities based on the city's rich cultural assets. Celebrating this diversity could also enhance the existing tourism resources by ultimately innovating a holistic health and wellness program. By increasing the diversity, Ranong could become a learning model of future city for inclusive society, wellbeing and eco-friendly living environment.

Being a city with internationally well-recognized value as a bio-sphere reserve will create a platform for unique identity at an international level. Integrating all these values into product Innovation will help leverage existing resources to its fullest potentials which will contribute to mitigating environmental issues.

Tessaban Mueang Ranong could therefore develop to be a harmony of multi-cultural living environment. Although there are insufficient health care facilities, the city could further develop with a help of the right expertise in managing natural hot spring sites and promote investment by private sectors in innovating hot spring sites and relevant alternative health care solutions.

#### 5) SFC Strategy

##### **Strategic Direction 1: Inclusive and Multicultural City**

This strategy focuses on the existing diversities by including all voices into the future development. Although the awareness-raising and sense of belongings are different, the



diversity includes race, ethnicity, gender, gender identity, sexual orientation, age, social class, physical ability or attributes, religious or ethical values system, national origin, and political beliefs. Inclusion is involvement and empowerment, where the inherent worth and dignity of all people are recognized. An inclusive city promotes and sustains a sense of belonging; it values and practices respect for the talents, beliefs, backgrounds, and ways of living of its members. Several initiatives could be creatively offered to tie the differences in a harmony manner. The programs under this strategy are

- Program 1-1 Inclusive and multicultural human resource development
- Program 1-2 Inclusive and multicultural awareness raising

### **Strategic Direction 2: World-class Holistic Health and Wellness Tourism Destination**

To upgrade local expertise in the field of how best to manage the heated mineral waters needs both scientific knowledge and experiential design. Employment and empowerment of human capitals in this unique arena will help boost sustainable economy. Holistic health and wellness encompass vast possible initiatives; business investment, technological innovation to enhance efficient management of the sites, institutionalize wellness program. The programs under this strategy are

- Program 2-1 Development of tourism resources
- Program 2-2 Development of local products

### **Strategic Direction 3: Green City**

Environmental and ecological issues remain a major problem faced by several cities. The preservation is a long-term stepwise process. The focus of this strategic direction is to change the way that people see and value mangroves, which will lead to an increase of commitment to conserve and restore these systems. Potentially, Ranong has the large mangrove area where is efficiently preserved. It should link the essential role of mangroves for climate change adaptation and mitigation with responsible and sustainable use of mangrove resources and ultimately to protect biodiversity and improve the well-being of the people who are directly dependent on ecosystems for their food security and livelihoods. Beside this, the management of waste disposal is the key issues to enhance the sustainable future city. The programs under this strategy are;

- Program 3-1 Sustainable water resource management
- Program 3-2 Sustainable solid waste management
- Program 3-3 Sustainable Forest management

### **Strategic Direction 4: Healthy City**

Tessaban Mueang Ranong has a vision of a health and wellness city. This is not just about preventing illness and disability but is a holistic approach to maximize physical and mental health and wellbeing, independence and social connectedness as people age. This is not only targeting the elderly but also focusing on the inclusiveness of all ages and all races to live their healthy life. Moving to an active healthy society is both short- and long-term goals. Suitable urban form, environment, public space is the key development approach to promote health and wellness city. The programs under this strategy are;

- Program 4-1 Development of healthcare facility and care system
- Program 4-2 Development of Elderly care facility and care system
- Program 4-3 Promotion of healthy lifestyle

#### **Strategic Direction 5: Safe, Convenient, and Comfortable City**

This strategy focuses on the urban design and physical urban improvement which is essential to complete the vision. The design and physical improvement are not only promoting the beautifulness of the city but also assisting the urban safety and urban climate. For instance, planting trees along the street and landscape improvement can improve the local climate and reduce the urban heat. Additionally, this is able to minimize the demands of electrical uses, private vehicle, and adjacent buildings. Designing streets that respond to the city's environment can help meet the challenges of a warming planet and at the same time could reflect its multicultural society. The programs in this strategy are:

- Program 5-1 Improvements of Park, Transport and Cityscape
- Program 5-2 Improvements on safety management

#### **6) SFC Plan**

Table 2.1.6 to Table 2.1.10 show the details of projects in SFC Plan with description, implementation agencies, relevant agencies, timeframe, and estimated budget.

**Table 2.1.6 SFC Programs and Projects under Strategic Direction 1**

Strategic Direction 1: Inclusive and Multicultural City						
Project Name	Objective	Brief Description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
<b>Program 1-1 Inclusive and multicultural human resource development</b>						
1	Human development and empowerment program in various dimensions	Establish a human resource development center in the city area for sustainability so that people from various cultures, professions, nationalities, ages, etc. share, learn and strengthen the stability of life together	- Tessaban Mueang Ranong - Provincial Cultural Office - Provincial Education Office	- Provincial Social Development and Human Security Office - LAO Office of Skill Development	2021-2025	20
2	Town competitiveness enhancement	To increase the competitiveness of the city in various dimensions	- Tessaban Mueang Ranong	- Provincial Cultural Office - Provincial Industrial Office - Provincial Commerce Office - Provincial Chamber of Commerce - PAO	2021-2025	20
3	The development of change agents to lead different elements of town improvement and competitiveness	To create change leaders toward the better development path of the city	- Tessaban Mueang Ranong - communities	- Provincial Education Office - Provincial Office of DPT	2021-2023	20
<b>Program 1-2 Inclusive and multicultural awareness raising</b>						
4	Self-sufficiency project	To create sustainable and self-reliance development by using the sufficiency economy philosophy as a guideline	- Tessaban Mueang Ranong	- Provincial Office - LAO - PCD	2021-2022	20

Strategic Direction 1: Inclusive and Multicultural City						
Project Name	Objective	Brief Description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
5	Citizen (multi-cultural citizen) engagement project to help build future city-livable Ranong: "Imagine Ranong: City has rain, people have dream"	To create a sense of belonging to the city and the collective responsibility of local people for urban development	<ul style="list-style-type: none"> <li>- Tessaban Mueang Ranong, communities</li> </ul>	<ul style="list-style-type: none"> <li>- Provincial Office</li> <li>- LAO Provincial Tourism and Sports Office</li> <li>- TAT</li> <li>- Ranong Community College</li> <li>- PAO</li> </ul>	2021-2030	20
6	Sustainable old town development and conservation project	To preserve the local culture and enhance and share the historical values of the city	<ul style="list-style-type: none"> <li>- Tessaban Mueang Ranong</li> </ul>	<ul style="list-style-type: none"> <li>- Provincial Tourism and Sports Office</li> <li>- TAT</li> <li>- Provincial Cultural Office</li> <li>- Rattarangsan Foundation</li> <li>- Tourism Association</li> <li>- Provincial Chamber of Commerce</li> <li>- PAO</li> </ul>	2021-2030	250

Source: JICA Project Team

**Table 2.1.7 SFC Programs and Projects under Strategic Direction 2**

Strategic Direction 2: World-class, Holistic Health and Wellness Tourism Destination						
Project Name	Objective	Brief Description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
<b>Program 2-1 Development of tourism resources</b>						
1	Wellness destination: To identify marketing	Create advertisements to	<ul style="list-style-type: none"> <li>- Tessaban Mueang</li> </ul>	<ul style="list-style-type: none"> <li>- Provincial Tourism</li> </ul>	2021-2027	35

Strategic Direction 2: World-class, Holistic Health and Wellness Tourism Destination						
Project Name	Objective	Brief Description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
Destination branding and digital marketing development	development for health tourism branding of the city	promote the city as a destination for health tourism and well-being through social and digital media	Ranong - TAT	and Sports Office - TAT		
2 Meditation in the forest	To promote mental health and wellness tourism and raising awareness of being in harmony with nature	Organize meditation activities in the forest to train the mind to be peaceful and become part of nature by being in harmony with nature	- Tessaban Mueang Ranong	- Office of Buddhism - Provincial Cultural Office - Provincial Tourism and Sports Office - TAT	2021-2022	20
3 Global Hot Springs Expo and Conference in Ranong	To promote hot spring tourism and health tourism	Organize major conferences and exhibitions about hot springs of the world at the international level, inviting experts from tourism, medicine, health, health-related technology and hot springs from around the world to meet, exchange experiences and create city alliances	- Tessaban Mueang Ranong - TAT	- Provincial Trade Office - Provincial Strategic Office - TAT	2023-2024	200
4 International rejuvenating basecamp	To build the city as a tourist destination for health and livable city	Establish activities to create cities as destinations for the rehabilitation of the mental and physical conditions of athletes and individuals.	- Tessaban Mueang Ranong - TAT	- TAT - Sports Authority of Thailand - Provincial Natural Resources and Environment Office	2023-2024	200
5 Leadership and team building program in Ranong	To promote tourism for health and well-being of people of all ages	Arrange various activities to attract the relevant departments to use as a place and learn about building teamwork, creating leaders of various organizations	- Tessaban Mueang Ranong	- Provincial Education Office	2023-2024	20

Strategic Direction 2: World-class, Holistic Health and Wellness Tourism Destination							
Project Name	Objective	Brief Description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)	
6	Develop long-stay tourism	To create new products and facilities for long stay/retirement segments for more revenue for the local	Create activities to motivate visitors to stay in the city for a long stay in their retirement or want come to live slowly, calmly and beautifully	- Tassaban Mueang Ranong	- Provincial Tourism and Sports Office - TAT	2021-2023	60
7	Transportation network design project using local cars in order to create an experience for tourists to touch the history and identity of Ranong province.	To promote and identify the image of the city and create a good connection for citizens, and tourists returning to Ranong again	Design various locations and areas in the urban area to enhance the image and identity of the city and to create a memorable place for tourists to return to Ranong again	- Tassaban Mueang Ranong	- Tourism Association - Provincial Chamber of Commerce - PAO - Other tassarabans in the areas	2021-2023	30
<b>Program 2-2 Development of local products</b>							
8	Ranong Mineral Water Innovation Project	To create more business channels related to health using Ranong mineral water	Build and promote mineral drinking water products of the city to be recognized and distributed	- Tassaban Mueang Ranong - Provincial Public Health	- Provincial Commerce Office	2021-2023	150
9	Product innovation and knowledge for the use of hot spring for health	To research and develop hot spring assets, and promote the value of hot spring for health	Create and develop innovations related to mineral water by experts so that it can be distributed to the market	- Tassaban Mueang Ranong	- Provincial Health Office	2023-2026	80
10	Local fresh and safe fishery promotion project	To promote economic activities for communities	Organize activities to promote fish consumption from natural fish sources of local entrepreneurs	- Tassaban Mueang Ranong	- Provincial Fisheries Office	2022-2023	40
11	Rom Ranong Fund Project (Make umbrellas for sale, use the money to develop Ranong city and create special memories)	To create guidelines for financing the construction and development of cities	Make umbrellas as a tool that must be carried when in Ranong, sell it to visitors at a special price to fund the development and operation of the city in addition to regular funding sources. It	- Tassaban Mueang Ranong - PAO	- Provincial Commerce Office - PCD - Provincial Industrial Office	2021-2027	21

Strategic Direction 2: World-class, Holistic Health and Wellness Tourism Destination						
Project Name	Objective	Brief Description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
		also creates the identity and memory of Ranong, which is raining all the time.				

Source: JICA Project Team

**Table 2.1.8 SFC Programs and Projects under Strategic Direction 3**

Strategic Direction 3: Green City							
Project Name	Objective	Brief Description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)	
<b>Program 3-1 Sustainable water resource management</b>							
1	Drainage project: Dealing with rapidly changing weather conditions	For management and drainage to handle climate change	Establish a water management and drainage project to handle climate change	- Tessaban Mueang Ranong	- DPT - PAO - Provincial Resources and Environment Office	2021-2023	150
2	Canal River Care Project	To take care of the environment of rivers and canals in urban areas before going into the sea and into mangrove areas	Create activities that promote the environment care of rivers and canals in urban areas before going to sea and into mangrove areas	- Tessaban Mueang Ranong - Communities	- Provincial Natural Resources and Environment Office - Provincial Harbor Office - Irrigation Office	2021-2023	60
3	Wastewater Treatment Plant Project and control the quality of water resources	To manage the wastewater of the city	Study, design, construct and manage the city's wastewater and water treatment plants	- Provincial Office - Public & Private Network	- The Provincial Waterworks Authority - Irrigation Office - Provincial Natural Resources and Environment Office - Provincial Health Office	2021-2023	60
4	Development and installment of a household grease trap	To manage the wastewater of the city	Promote and issue regulations to install a grease trap in the	- Tessaban Mueang Ranong - Communities	- Ranong Restaurant Club - Provincial Health	2021	50



Strategic Direction 3: Green City						
Project Name	Objective	Brief Description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
5	Water diversion project in Tessaban: Build a large drain	To solve drainage problems	household before releasing into the public drainage.	<ul style="list-style-type: none"> <li>Provincial Natural Resources and Environment Office</li> <li>DPT</li> <li>Royal Irrigation Department</li> <li>PAO</li> <li>Provincial Waterworks Authority</li> </ul>	2021-2022	100
<b>Program 3-2 Sustainable solid waste management</b>						
6	Reducing waste from the beginning to the end	To reduce waste	<ul style="list-style-type: none"> <li>Tessaban Mueang Ranong</li> <li>Communities</li> </ul>	<ul style="list-style-type: none"> <li>Provincial Natural Resources and Environment Office</li> <li>The responsible agency</li> <li>Provincial Health Office</li> <li>Ranong Province Hospital</li> <li>LAO</li> </ul>	2021-2023	60
7	Hygienic waste disposal project	To handle waste hygienically	Create projects and activities to reduce waste from the source by encouraging people to pay more attention to the waste problem and solve the waste problem through creating community participation in all sectors	<ul style="list-style-type: none"> <li>Provincial Office</li> <li>Public &amp; Private Network</li> </ul>	2021-2023	150
8	Waste-Free Road Project (Rueang Rat Road)	To reduce waste	Create and construct a hygienic waste disposal project	<ul style="list-style-type: none"> <li>Tessaban Mueang Ranong</li> <li>Communities</li> </ul>	2024-2027	80

Strategic Direction 3: Green City							
	Project Name	Objective	Brief Description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
9	Project to stop using foam and reduce the use of plastic bags: promote the use of woven bags	To manage solid waste in Tessaban and nearby areas	Organize activities to encourage people to use devices and containers that are made from natural or biodegradable and designate areas or buildings free of plastic or disposable equipment that are toxic to the environment	<ul style="list-style-type: none"> <li>- Provincial Office</li> <li>- Public &amp; Private Network</li> </ul>	<ul style="list-style-type: none"> <li>- Place of education</li> <li>- Office of the Basic Education Commission (OBEC)</li> <li>- Office of Secondary Education Service Areas (SorBorNor.)</li> <li>- Provincial Public Health Office</li> <li>- Provincial Commerce Office</li> <li>- PCD</li> <li>- Provincial Natural Resources and Environment Office</li> </ul>	2023	80
10	Waste incinerator project	To manage solid waste in Tessaban and nearby areas	Conduct a feasibility study on constructing a waste disposal plant that is appropriate for the area and proceeding with establishment of a waste disposal plant	<ul style="list-style-type: none"> <li>- Provincial Office</li> <li>- Public &amp; Private Network</li> </ul>	<ul style="list-style-type: none"> <li>- Tessaban Mueang Ranong (Public Health Division)</li> <li>- Power Province</li> <li>- LAO</li> <li>- Provincial Strategic Office</li> <li>- Provincial Natural Resources and Environment Office</li> </ul>	2021-2022	200
11	Clean and free garbage at all schools' project	To build a city with a good environment.	Organize activities to promote schools or educational institutions in the urban areas to be garbage-free schools	<ul style="list-style-type: none"> <li>- Tessaban Mueang Ranong, Schools</li> <li>- Communities</li> </ul>	<ul style="list-style-type: none"> <li>- Satri Ranong School</li> <li>- Schools in Tessaban</li> <li>- Provincial Education Office</li> <li>- OBEC</li> <li>- Office of Secondary Education Service Areas (SorBorNor.)</li> <li>- Provincial Natural Resources and Environment Office</li> </ul>	2021	50

Strategic Direction 3: Green City						
Project Name	Objective	Brief Description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
12	Up cycling project to bring waste to value	To reduce waste	Create activities to promote recycling	- Tessaban Mueang Ranong - Communities	Environment Office - Ranong Technical College - Power Province - Provincial Natural Resources and Environment Office - Provincial Health Office	2021-2022 50
13	Ranong Mae Kai (hen) Model Project: Change agents	To create change leaders toward the better development path of the city	Create a prototype for the change leader in systematic waste management	- Tessaban Mueang Ranong - Communities	- Ranong Community College - Governor - Provincial Strategic Office	2022-2024 50
Program 3-3 Sustainable forest management						
14	Big Tree Preservation Project	To preserve trees and create green areas for the city	Organize management and maintenance of trees and create green areas for the city systematically	- Tessaban Mueang Ranong - Communities	- Provincial Cultural Office - Arboretum - Development Station 10 - Provincial Forestry Office - Provincial Natural Resources and Environment Office	2021-2027 70
15	Mangrove restoring and protecting initiatives project (pathway to the world heritage list)	To create citizens' awareness and promote initiatives to restore and protect the mangrove to achieve a long term national and international recognition	The communities are engaged in enhancing and promoting the ecosystem functions of mangroves, providing environmental benefits and contribute to coastal protection, livelihoods, and well-being.	- Tessaban Mueang Ranong	- Royal Forest Department - Mangrove Forest Research Center - Mangrove Forest Resources Development Station - Provincial Natural	2021-2022 80

Strategic Direction 3: Green City						
Project Name	Objective	Brief Description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
				Resources and Environment Office - LAO		

Source: JICA Project Team

**Table 2.1.9 SFC Programs and Projects under Strategic Direction 4**

Strategic Direction 4: Healthy City						
Project Name	Objective	Brief Description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
<b>Program 4-1 Development of healthcare facility and care system</b>						
1	Hospital capacity expansion project in Ranong	To support public health to meet the needs	Construct, improve and expand hospitals located in urban areas to have the potential to support the growth of the city with tools and equipment and medical personnel suitable for being a city for health	- Provincial Office - Public & Private Network	Health  - Provincial Office	2020-2022  60
2	Healthy garden and recreation development project	To increase the area to attract tourism and conduct health activities	Develop and improve parks and recreation areas in the city area to support a variety of health activities	- Tessaban Mueang - Ranong	Health  - Provincial Office - Sports Authority of Thailand - Provincial Chamber of Commerce - PAO	2021-2023  60
3	Mini-Running for health	To make the city the destination of health tourists	Organize healthy marathon activities in urban and nearby areas using city landmarks and mangrove forests to be registered as a world heritage as a running backdrop	- Tessaban Mueang - Ranong	- Sports Authority of Thailand - Provincial Tourism and Sports Office - TAT - PAO - Provincial Health Office	2021-2022  20

Strategic Direction 4: Healthy City						
Project Name	Objective	Brief Description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
4 Community College Project: innovative curriculum for specialization in "Care for the Elderly" and "Holistic healthcare and wellness"	To increase the capacity of practitioners in the field of health tourism and the field of alternative medicine activities in the area	Establish a curriculum on health care for the elderly, care for the elderly, and open training courses for those who work in that field to be more skilled and to have international standards	- Education Institution - Tessaban Mueang Ranong	- Ranong Community College - Office of Non-Formal and Informal Education (Non-Formal Education) - Provincial Health Office - Provincial Social Development and Human Security Office	2022-2024	60
5 Emotional intelligence center	To promote a city of mental peace and emotional intelligence	Establish a center for mental peace and learning of emotional intelligence to create people to coexist peacefully in society and to attract and gain a reputation as a city of both physical and mental health	- Tessaban Mueang Ranong - Provincial Office - Public & Private Network	- Provincial Health Office	2025-2027	30
6 Development of retreat center for "growth mindset"	To promote tourism for positive living and healthy mind	Create and develop a retreat center for "growth mindset" as a source of learning and practice.	- Tessaban Mueang Ranong - Provincial Office - Public & Private Network	- Provincial Health Office - Provincial Social Development and Human Security Office	2027-2030	30
7 Ambulance project to accept elderly patients to the hospital (with rescuers and system to coordinate between municipalities)	To increase the ability to reach patients or the elderly in an emergency	Provide emergency ambulances to reach patients or the elderly in an emergency or need help	- Provincial Office - Public & Private Network	- Provincial Police Station - Foundations in the province - LAO	2021-2023	60
Program 4-2 Development of Elderly care facility and care system						
8 Active aging society	To strengthen the	Organize activities and	- Tessaban Mueang	- Provincial Social	2021-2027	70

Strategic Direction 4: Healthy City						
Project Name	Objective	Brief Description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
project	potential of the elderly	place for the elderly to live a quality life by jointly creating recreational activities, social activities for the elderly to participate and strengthen the self-reliance of the elderly in City area	Ranong - Provincial Office - Public & Private Network	Development and Human Security Office - Ranong Hospital - Elderly Association - Provincial Public Health Office		
9	Elderly Care Center Project To take care of the health of the elderly and build a city suitable for living	Establish and operate the elderly care center	Tessaban Mueang Ranong - Provincial Office - Public & Private Network	Health Insurance Fund - LAO - Ranong Hospital - Elderly Association - Provincial Health Office - Provincial Social Development and Human Security Office - PAO	2022-2027	60
Program 4-3 Promotion of healthy lifestyle						
10	Promote the use of bicycle project in daily life (By using "the Hen Project" Let the government department, Director of led agencies ride a bike for 3 days a week)	To create well-being and good health, and in environmentally friendly manner reduce traffic congestion and the budget for solving traffic problems or creating projects for cars	Create activities that encourage people to ride bicycles instead of cars. Establish a place to park bicycles and make it easy and safe for bicycle users. Organize more bicycle day activities in various departments	Tessaban Mueang Ranong - Provincial Office - Public & Private Network	Sports Authority of Thailand - TAT - PAO	2021-2022
11	Hot spring and mineral water benefits: anti-aging benefits	To promote elderly health and building a healthy city	Organize activities related to hot springs and use clear mineral water as an ingredient in anti-aging	Tessaban Mueang Ranong - Provincial Office - National Park - Provincial Health Office	2021-2023	60

Strategic Direction 4: Healthy City						
Project Name	Objective	Brief Description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
		products		Commerce Office - Provincial Office - Provincial Agricultural Extension Office - LAO - Provincial Development and Human Security Office		

Source: JICA Project Team

**Table 2.1.10 SFC Programs and Projects under Strategic Direction 5**

Strategic Direction 5: Safe, Convenient, and Comfortable City						
Project Name	Objective	Brief Description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
<b>Program 5-1 Improvements of Park, Transport and Cityscape</b>						
1	Local Economy Street: Rueang Rat Road Project	To promote community economy and participation in creating a livable city	Organize activities to promote fish consumption from natural fish sources of local entrepreneurs. - Tassaban Mueang Ranong	PCD - Provincial Commerce Office - Provincial Industrial Office - Provincial Agricultural Extension Office - PAO	2022-2025	40
2	Park improvement and accessibility design and development project	To enhance park and public space for better experiences and the wellbeing of all users	Create a user-friendly and beautiful park for all ages, design memorable and sustainable city atmosphere - Tassaban Mueang Ranong	DPT - Highway district - Provincial Police Station - Provincial Tourism and Sports Office - TAT	2020-2022	40

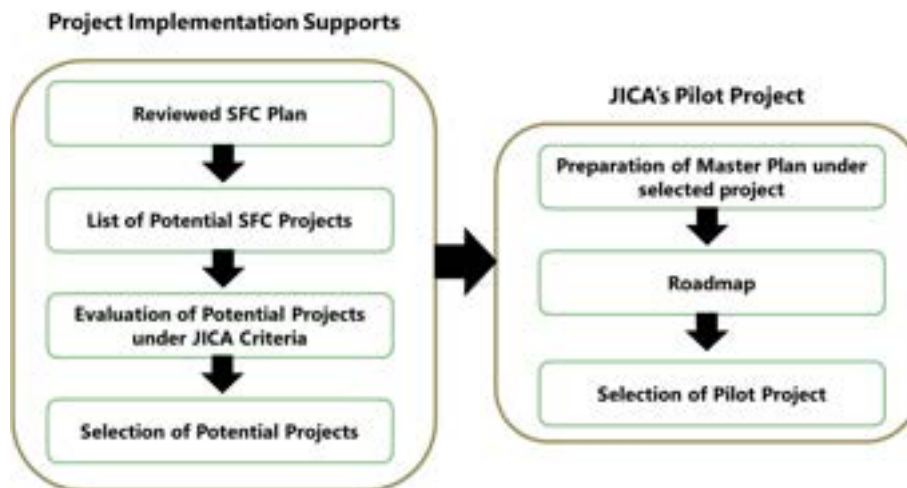


Strategic Direction 5: Safe, Convenient, and Comfortable City						
Project Name	Objective	Brief Description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
3 Pedestrian Development Project: Trail city walk through the building and shade throughout the city	To promote creative and environmentally friendly use of urban areas, as well as create tourism activity products in urban areas	<ul style="list-style-type: none"> <li>- Create walking routes by connecting various points of the city especially important attractions</li> <li>- Improve pedestrian conditions and facilities for people of all ages along the route</li> </ul>	<ul style="list-style-type: none"> <li>- Tassaban Mueang Ranong</li> <li>- Provincial Police Station</li> </ul>	<ul style="list-style-type: none"> <li>- PAO</li> <li>- DPT</li> <li>- Highway district</li> <li>- Provincial Police Station</li> <li>- Provincial Tourism and Sports Office</li> <li>- TAT</li> <li>- PAO</li> </ul>	2021-2023	60
4 Universal design project for people to travel in every area	To design and construct various areas and buildings suitable for people of all ages and every physical condition	<p>Promote and emphasize on the design and construction of various projects in Tassaban area to be suitable for people of all ages and physical conditions by applying the universal design principles</p> <ul style="list-style-type: none"> <li>- Study guidelines and design a city that is suitable for walking.</li> <li>- Improve, install and construct pathway to be more beautiful and suitable for pedestrians for all ages.</li> <li>- Encourage people to walk in the city and do various activities in the urban area by walking</li> </ul>	<ul style="list-style-type: none"> <li>- Tassaban Mueang Ranong</li> </ul>	<ul style="list-style-type: none"> <li>- DPT</li> <li>- Highway district</li> <li>- Provincial Police Station</li> <li>- Provincial Tourism and Sports Office</li> <li>- TAT</li> <li>- PAO</li> </ul>	2021-2023	60
5 Walkable city and streetscape design and improvement	<ul style="list-style-type: none"> <li>- To build a pleasant and environmentally friendly city</li> <li>- To create beautiful, memorable and useful streetscape and conditions for people of all ages</li> <li>- To strengthen economic distribution patterns and urban activities</li> </ul>	<ul style="list-style-type: none"> <li>- Study guidelines and design a city that is suitable for walking.</li> <li>- Improve, install and construct pathway to be more beautiful and suitable for pedestrians for all ages.</li> <li>- Encourage people to walk in the city and do various activities in the urban area by walking</li> </ul>	<ul style="list-style-type: none"> <li>- Tassaban Mueang Ranong</li> <li>- Provincial Office</li> <li>- Public &amp; Private Network</li> </ul>	<ul style="list-style-type: none"> <li>- DPT</li> <li>- Highway district</li> <li>- Provincial Police Station</li> <li>- Provincial Tourism and Sports Office</li> <li>- TAT</li> <li>- PAO</li> </ul>	2021-2023	100
6 Mineral water & hot spring accessibility and distribution management system	To create a fair access and distribution of mineral water and related value of hot spring	<p>Manage the sharing system for public goods (mineral water) to create fair and beneficial public access</p>	<ul style="list-style-type: none"> <li>- Tassaban Mueang Ranong</li> <li>- Provincial Office</li> <li>- Public &amp; Private Network</li> </ul>	<ul style="list-style-type: none"> <li>- DPT</li> <li>- Provincial Tourism and Sports Office</li> <li>- TAT</li> <li>- PAO</li> </ul>	2020-2021	120

Strategic Direction 5: Safe, Convenient, and Comfortable City						
Project Name	Objective	Brief Description	Implementing Agency	Relevant Agency	Timeframe	Budget (mil. baht)
<b>Program 5-2 Improvements on safety management</b>						
7	<ul style="list-style-type: none"> <li>- To create a safe walk to secure pedestrian safety and the livelihood of people in urban areas</li> <li>- To make it easy to walk</li> <li>- To encourage people to obey traffic rules</li> </ul>	<ul style="list-style-type: none"> <li>- Design and improve the space including installation of equipment, create pedestrian safety and livelihoods for people in urban areas.</li> <li>- Promote traffic discipline to keep pedestrians in mind for safe walking in the city.</li> <li>- Define and create crossing and traffic signal system that allow pedestrians first</li> <li>- Create a pattern of walking routes to various places.</li> </ul>	<ul style="list-style-type: none"> <li>- Tessaban Mueang Ranong (Public Work Division)</li> </ul>	<ul style="list-style-type: none"> <li>- DPT</li> <li>- Highway district</li> <li>- Provincial Police Station</li> <li>- Provincial Tourism and Sports Office</li> <li>- TAT</li> <li>- PAO</li> </ul>	2021-2023	60
8	<ul style="list-style-type: none"> <li>- To create safety in life and property by public participation</li> </ul>	<ul style="list-style-type: none"> <li>- Organize activities for the public to participate in creating safety in life and property</li> </ul>	<ul style="list-style-type: none"> <li>- Tessaban Mueang Ranong</li> <li>- Police</li> </ul>	<ul style="list-style-type: none"> <li>- Provincial Education Office</li> <li>- Provincial Police Station</li> <li>- LAO</li> <li>- PAO</li> </ul>	2021-2022	40
9	<ul style="list-style-type: none"> <li>- To ensure the safety of people from animals without owners and cleanliness of the city</li> </ul>	<ul style="list-style-type: none"> <li>- Manage stray dogs and uninhabited animals so as not to cause annoyance and endanger people in the city area</li> </ul>	<ul style="list-style-type: none"> <li>- Tessaban Mueang Ranong</li> <li>- Communities</li> </ul>	<ul style="list-style-type: none"> <li>- Provincial Livestock Office</li> <li>- Provincial Health Office</li> <li>- PAO</li> <li>- LAO</li> </ul>	2021	10
10	<ul style="list-style-type: none"> <li>- To create safety in the life and property of people in the area</li> </ul>	<ul style="list-style-type: none"> <li>- Procure and install CCTV systems at various points of the city</li> </ul>	<ul style="list-style-type: none"> <li>- Tessaban Mueang Ranong</li> </ul>	<ul style="list-style-type: none"> <li>- PAO</li> <li>- Provincial Police Station</li> </ul>	2021	50

Source: JICA Project Team

## 2.2 Project Implementation Support



Source: JICA Project Team

**Figure 2.2.1 Project Prioritization Process**

Figure 2.2.1 shows the process of project prioritization to prepare the action plan for the pilot project. Firstly, the SFC Plan was reviewed by PT members to select a list of potential SFC projects. After the PT's consideration, the list of potential projects was elaborated in detail and rediscussed according to JICA's criteria. After the evaluation of potential SFC projects, one project was selected and developed into the master plan and the roadmap. Then, the master plan was reviewed and evaluated by PT members to select the pilot project for the concrete construction as a tangible output.

### 2.2.1 List of Potential SFC Projects

The potential projects were selected based on the city's development direction toward health tourism with well-being and the needs of local people shared in the PT meeting. To achieve the goal of being health tourism city, livelihoods and behavior of local people should be healthy with good quality of life.

Besides the city's vision and its needs, implementation timeframe and budget were also one of the criteria for PT member to initially prioritize SFC projects. It should be able to complete in short-term with provided budget. Furthermore, the capacity of other organizations who are one of the PT members to support the project should also be considered.

As a result, PT members proposed three (3) candidate projects from three (3) strategies and programs that will support Ranong to be developed under the vision of health tourism city as a preliminary selection. The selected potential projects are listed below and shown in Figure 2.2.2.

- Transportation network design project using local cars in order to create an experience for tourists to touch the history and identity of Ranong Province under Program 2-1;
- Healthy garden and recreation development project under Program 4-1; and

- Walkable city and streetscape design and improvement under Program 5-1.



Source: JICA Project Team

**Figure 2.2.2 Preliminary Selection of Potential SFC Projects**

The details of these project were elaborated into project descriptions, timeframes, and estimated budgets were elaborated for further selection as shown in Table 2.2.1 to Table 2.2.3. The components of each potential project are summarized below.

### 1) Program 2-1: Development of Tourism Resources

“Transportation network design project using local cars in order to create an experience for tourists to touch the history and identity of Ranong province” was selected as a potential project of the prioritized program 2-1: Development of tourism resources. Ranong's land transportation system has been using wooden pick-up trucks (*songteaw*) from the past to the present, so it is very important to preserve them as Ranong's priceless tradition and also to response to tourists visiting Ranong. Currently, there are over three hundred (300) wooden *songteaw* in Ranong that are still in service. There are still technicians making *songteaw*, therefore, this kind of transportation still need to carry on.

Wooden *songteaw*, which had been used as a general service vehicle for mining workers to transport to the mine and as transportation to carry materials to mine, has been a unique feature of Ranong since 1965. Since Ranong is a rainy city and near the sea, the use of conventional metal *songteaw* is not suitable at all. Ranong, therefore, uses wooden *songteaw* of which model was received from Phuket.

There are three (3) main routes of *songteaw*; 1. Red Line: Royal Palace - Pier - Ban Thian Media - Bang Bon - Pak Khlong, 2. Blue Line: Around the city - Kapoe - Saphan Pla - Suk Samran, and 3. Green Line: La-un - Kra Buri. If there is a detailed arrangement and good

publicity, Ranong can use wooden songteaw as the main public transport, without the need to build a public transport system by bus or large cars that are not suitable for the road conditions in the urban area. Currently, the wooden songteaw is one of the must-try and worth taking pictures of tourism attractions in Tessaban Mueang Ranong. If it is developed and improved, it will receive presence both as transportation and tourism to create an experience for tourists to experience the history and identity of Ranong Province and to create jobs and value for people in Ranong who are specialized technicians to grow together.

**Table 2.2.1 Description of Potential Project under Prioritized Program 2-1:  
Development of Tourism Resources**

<b>Strategic Direction 2: The World Class Holistic Health and Wellness Tourism Destination City</b>	
<b>Program 2-1: Development of tourism resources</b>	
Project Name	Transportation network design project using local cars in order to create an experience for tourists to touch the history and identity of Ranong province.
Objectives	To promote and identify the image of the city and create a good connection for citizens, and tourists returning to Ranong again.
Brief description	Design various locations and areas in the urban area to enhance the image and identity of the city and to create a memorable place for tourists to return to Ranong again
Implementing Agencies	Tessaban Mueang Ranong
Relevant agencies	<ul style="list-style-type: none"> <li>- Tourism Association</li> <li>- Provincial Chamber of Commerce</li> <li>- PAO</li> <li>- Other Tessaban in the areas</li> </ul>
Timeframe	3 years (2021-2023)
Budget (Mil., THB)	30

Source: JICA Project Team



Source: JICA Project Team

**Figure 2.2.3 Songteaw Routes in Ranong**

This project consists of the following components:

- Install GPS to show the location of songteaw cars and routes so that users can know the time and location of the vehicles passing at the boarding point;
- Develop a system which passengers can notify the waiting position to board the vehicle;
- Provide clear service schedule for each route;
- Improve parking spots (origin) and parking locations to pick up passengers in important areas where is expected to have many passengers waiting to use the service;
- Develop accommodation with the beautiful check in spots;
- Install public sign showing directions;
- Improve the parking space in an orderly manner, not to obstruct traffic or other people's traffic;
- Improve songteaw cars to be more beautiful and safer;
- Publicize the marketing of wooden songteaw in Ranong to create attraction for visitors to try wooden car service; and
- Add or expand routes to major tourist destinations and create traffic modes to support and coordinate other traffic routes in Ranong.

## 2) Program 4-1: Development of Healthcare Facility and Care System

"Healthy garden and recreation development Project" was selected as a potential project of the prioritized program 4-1: Development of healthcare facility and care system. The benefits of having regular physical activities help strengthen health and reduce the risk of various diseases of the city.

**Table 2.2.2 Description of Potential Project under Prioritized Program 4-1:  
Development of Healthcare Facility and Care System**

<b>Strategic Direction 4: Healthy City</b>	
<b>Program 4-1 Development of healthcare facility and care system</b>	
Project Name	Healthy garden and recreation development Project
Objectives	To increase the area to attract tourism and conduct health activities
Brief description	Develop and improve parks and recreation areas in the city area to support a variety of health activities
Implementing Agencies	Tessaban Mueang Ranong
Relevant agencies	- Provincial Health Office - Sports Authority of Thailand - Provincial Chamber of Commerce - PAO
Timeframe	3 years (2021-2023)
Budget (Mil., THB)	60

Source: JICA Project Team

Aside from urban design to promote physical activities such as space and basic utility design, land use, traffic system, pedestrian design, bicycle networks in urban areas, many strong pieces of evidence indicate that the most important area for promoting physical activities in urban areas is public parks. "Public Park" is an area created with the main objective to be a public recreation area. Activities in parks can be divided into two major groups; leisure activities or recreational activities, and active activities.

However, promoting physical activities in public parks also requires management of activities, basic planning and support for the best use of the area, which requires efficient design and planning, including activity area, park's support area, the overall condition of the garden, and the context surrounding the park's location.

A good park must have a physical element that makes sense of hospitality and comfort for all groups of people in society. It should also be a safe and friendly place for the elderly and people with disabilities. In addition, designing a park as a good public place must take into consideration of a variety of activities that are safe, clean and attractive, and a place for people to meet and socialize. In Tessaban Mueang Chumphon, there are several public spaces which could be developed and re-designed to serve the purpose of health and recreational activities enhancement.

Healthy garden and recreation development project consists of the following four (4) important components:

- Landscape design;
- Maintenance;

- Security; and
- Facilities and activities required.

It includes the design and construction and carrying out efficient utilization activities.

### 3) Program 5-1: Improvements of Park, Transport, and Cityscape

“Walkable city and streetscape design and improvement” was selected as a potential project of the prioritized program 5-1: Improvements of Park, Transport and Cityscape.

**Table 2.2.3 Description of Potential Project under Prioritized Program 5-1:  
 Improvements of Park, Transport, and Cityscape**

<b>Strategic Direction 5: Safe, Convenient and Comfort City</b>	
<b>Program 5-1 Improvements of Park, Transport and Cityscape</b>	
Project Name	Walkable city and streetscape design and improvement
Objectives	To build a pleasant city Environmentally friendly Create beauty and memorable and useful for people of all ages and conditions Strengthen economic distribution patterns and urban activities
Brief description	Study guidelines and design a city that is suitable for walking. Improve, install and construct pathway to be more beautiful and suitable for pedestrians for all ages. Encourage people to walk in the city and do various activities in the urban area by walking
Implementing Agencies	- Tessaban Mueang Ranong - Provincial Office - Public & Private Network
Relevant agencies	- DPT - Highway district - Provincial Police Station - Provincial Tourism and Sports Office - TAT - PAO
Timeframe	3 years (2021-2023)
Budget (Mil., THB)	100

Source: JICA Project Team

This project include the following components:

- Select an area in the city to develop as a community economic road;
- An activity area design: it could include identification of suitable trade area and setting up of the system for procurement of local produces and artisan pieces. The selected area will be a center where villagers/vendors/farmers/artisans bring products to the market. Linking rural to city markets without paying fees and encouraging farmers to form a group to sell their agricultural products, often associated with the management of community funding and savings activities, stock raising, fundraising, production, and food processing, which is considered as a circular economy established by groups of experienced farmers;
- Physical redesign: to reflect unique identity of Chumphon (market branding process), procurement of handmade decoration of the markets (umbrella, lighting,



plants); and

- Management system: Community activities, events, calendars for special festivals and seasons.

## **2.2.2 Evaluation of Potential Projects under JICA's Criteria**

The lists of SFC programs and projects were carefully reviewed, and several potential projects were selected. The selection criteria were formulated to ensure that the strategies would start with its initial implementation of the selected programs and projects. These criteria are summarized below and were used to assess the priority of candidate projects.

- (1) Integrated Program: (high/medium/low)
  - Can be developed as one program with several projects.
- (2) Feasibility: (high/medium/low)
  - Overall budget within THB 3 million, covering planning, designing, and implementation.
  - To be implemented within one (1) year.
- (3) Consensus building (high/medium/low)
  - Share of stakeholders (PT and involved agencies) who approve of the project.
  - Clear ownership by the Tessaban to manage/follow up the selected program after completion.
- (4) Other criteria (ability to manage – high/medium/low)
  - To involve more than one (1) organization.
  - Include certain elements or components to be completed with clear tangible outcomes, which can be implemented under the Tessaban's authority.

All three (3) potential projects were evaluated based on set criteria. The PT members helped debate the positive impacts, sustainability, and scalability of available seeded/supported budget. Key considerations are summarized in Table 2.2.4.

**Table 2.2.4 Evaluation of Potential Projects**

JICA Project Criteria	Integrated Program	Feasibility		Consensus Building		Other criteria	
		Budget	One-year Implementation	Stakeholder Agreement	Ownership by Tessaban	Multi organization Involvement	Clear Outcomes under Tessaban's Authority
1. Transportation design using local cars in order to create an experience for tourists to experience the history and identity of Ranong province project	Medium The focus should be for both tourist and residents.	Medium The seeding budget may not be sufficient for the future maintenance by Tessaban.	Medium May face resistance to change from the car owners	Low Benefits of the project is deemed to be overly centered around tourism.	Low An appropriate organization to take the lead for this project was identified as PAO who could integrate into the provincial plan since the routes could go across many municipalities.	Low Complexity of many parties	Low Complexity of many parties; especially the owners of the local cars may not be willing to change.
2. Healthy Garden and Recreation Park Development Project (Votes: 15 out of 22)	High Possibility of integration with existing plan and between different programs within the SFC plan	Medium Seeding budget needs further financial supports from other funding sources. There is an existing project which has been approved by other organization to improve the existing park and recreational area	High Certain components can be selected for 1-year timeline	High Stakeholders foresee the need for Tessaban to have health facilities. Benefits of the improvement are deemed to be great for wider beneficiary (citizens and visitors)	High if the selected site is under Tessaban's management	High number of organizations involved could be managed on a step-by-step basis. Decision making process is not complex	High The site is in the direct authority of Tessaban and long-term maintenance could be envisioned.

**Final Report, Vol. 2: Model City Projects**

JICA Project Criteria	Integrated Program	Feasibility		Consensus Building		Other criteria	
		Budget	One-year Implementation	Stakeholder Agreement	Ownership by Tessaban	Multi organization Involvement	Clear Outcomes under Tessaban's Authority
Candidate Pilot Project 3. Walkable city and streetscape design and improvement project (votes: 7 out of 22)	High Possibility of integration between various projects and to achieve healthy city, green city and wellness destination image	Medium Master plan for the site of the inner city is manageable with a selected component for the construction	High Considered that there is only 20 km street along Tessaban: selected scale for the improvement is achievable	High Agreed upon the need for the future city to apply new concept which is coincided with the city's existing plan	High Project can be implemented in the site which Tessaban has full authority and mandate	Medium Multi-organizations; specific key stakeholders at each stage of the development can be identified	High Improvement of the city through the cityscape highlights the tangible outcomes for the SFC plan

Source: JICA Project Team

It was deemed effective to integrate the two (2) potential projects, i.e., Healthy Garden and Recreation Development project and Walkable City and Streetscape Design and Improvement Project, into one priority project to gain synergy. The consensus building reached an agreement to integrate the following components into one priority project and its initial action will be implemented as a selected pilot project.

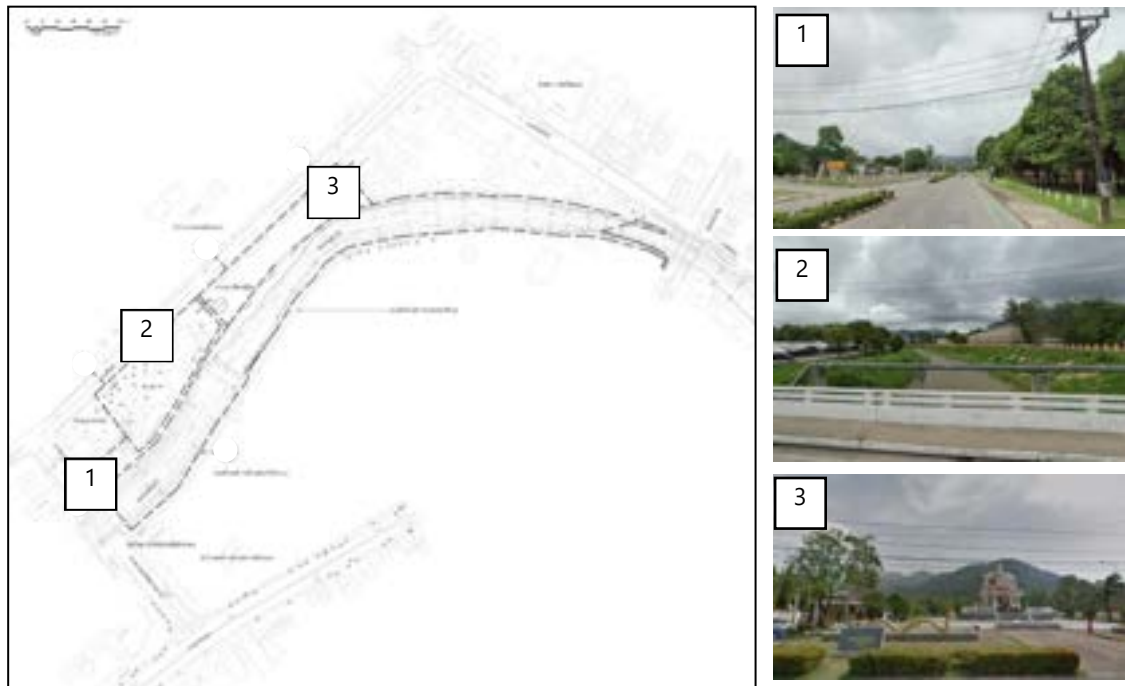
1. Park development – a further review and study will result in a clear need for any additional physical development plans for the park.
2. Park usage and activities plan - to ensure that the park will be used by citizens of various needs, a user analysis will help establish an engagement program. Activities related to health and wellbeing will be envisioned.
3. Walkable city networks - a selected route/sidewalk will be re-designed based on a well-developed concept of what should constitute a walkable city. These could include sidewalk improvement, pedestrian routes, streetscape design, planting and green space improvement.

It should be noted that there are on-going urban development projects that must be taken into consideration for the Pilot Project implementation; (1) Development Projects of the DPT, and (2) Development Projects of Tessaban Mueang Ranong, of which details are as follows;

#### **(1) Development Project of the DPT**

##### **Project 1: Healthy Garden landscape design and improvement monument courtyard and Had Som Phant canal project:**

The project site is a health park and a walkway along it located at opposite side of the Tessaban's office. This project consists of five (5) components; physical improvement and landscaping of the health park (Phermphon road area), new road and parking lot construction (NH412), renovation of the KozuJiang Monument area (Opposite to the Tessaban's Office), construction of the waterfront area of Had Som Phant canal (bicycle runway, bank area and new bridge), and landscaping of city pillar shrine. This project aims to increase the use of public areas along the Had Som Phant Canal and the efficiency of the traffic system along the road. Therefore, when implementing the Pilot Project, consideration of this project is important to make the Ranong area systematically linked in the future.



Source: Department of Public Works and Town & Country Planning

**Figure 2.2.4 Healthy Garden Landscape Design and Improvement Monument Courtyard and Had Som Phant Canal Project**

**Project 2: Raksawarin Park landscape design and improvement Project**

Raksawarin Park is one of the important public spaces which is connected from the city center by Kamlangsap Road. This project consists of four (4) key components; north park landscape improvement, improvement of the landscape of the hot spring bath, improvement of the landscape of the South Park and restaurants Landscape, and improvements for Looksao hot spring, including road improvements, parking, runways and bicycle paths. This project aims to stimulate tourism through increasing the number of tourists coming to Ranong.



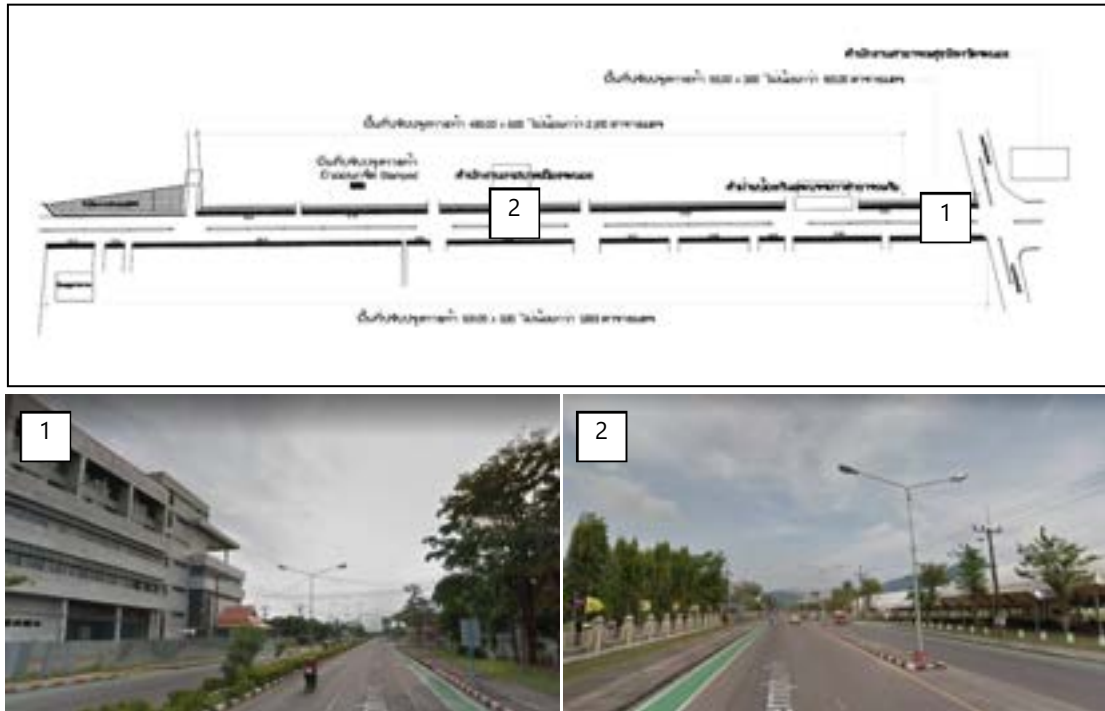
Source: Department of Public Works and Town & Country Planning

**Figure 2.2.5 Raksawarin Park Landscape Design and Improvement Project**

## **(2) Development Projects of Tessaban Mueang Ranong**

### **Pavement Improvement on Permphon Road Project**

Permphon Road is one of the important road networks of the Tessaban and relates to an improvement of access to public areas that has been improved by the DPT. The project is expected to result in a better quality of traffic in this area. The development of road assets for comfortable traveling is an important issue to provide better traffic quality in Ranong area in the future.



Source: JICA Project Team

**Figure 2.2.6 Pavement Improvement on Permphon Road Project**

At present, Tessaban Mueang Ranong has a budget to develop infrastructure according to its development plan (2018–2022) on the project for the construction of sidewalks in Tessaban Mueang Ranong which aims to make pedestrian travel conveniently and the disabled and the elderly walk safely (budget THB 6,450,000). Therefore, in the future, if there is a development of a sidewalk road renovation project, Tessaban Mueang Ranong is regarded as a relevant department. There is an opportunity to allocate development budgets as the pilot project in line with the Tessaban's infrastructure development strategy. This local authority is considered an important choice for development and allocates budgets for the project to be successful.

Based on the reasons mentioned above in consideration of the on-going relevant projects, the one priority project was developed as “Health Park Renovation with Walkable City Networks Project” that will be implemented as a pilot project supported by JICA.

It was agreed that it is important to prioritize the project which could be a “learning case” and could potentially integrate significant elements of sustainable future cities: financially realistic and achievable in a timeframe which could provide a solid foundation if it needs to be scaled up in a longer term. The following list of actions provides information about detailed scope, the implementing agency, implementing schedule, and draft budget of the prioritized project, which is a part of overall selected program.

**Table 2.2.5 List of Actions for the Selected SFC Program**

<b>Program 5-1: Improvement of Park, Transport and Cityscape Health Park Development with Walkable City Networks</b>					
	Project Name	Brief description	Implementing Agencies	Timeframe	Budget (mil bath)
<b>Healthy Park development</b>					
1	Health Park Improvement	Improving health park and waterfront pedestrian path along Hat Som Phant will be renovated.	- DPT	2021-2023	50
2	Park use plan development	Operation and management will be identified along with financial plan management, especially to secure the maintenance of public park operation, such as cost of lighting system. Also, the activities in the park will be arranged and well-designed for all users.	- Tessaban Mueang Ranong	2020-2030	1
3	CCTV camera installment for security	CCTV will be installed to increase security of life, particularly in the night-time and blind areas.	- Changwat	2023-2025	5
4	Universal design facilities installment	The signage, pathway, parking, and others will be designed and provided along with universal design concept. This is not only to promote diverse activities for multicultural people in Ranong, but also to provide intergenerational space for all ages for using the park equally and comfortably.	- M-Society - Tessaban Mueang Ranong	2021-2025	5
<b>Walkable city development</b>					
5	Walkable city master plan	With overall concept of walkable city for Ranong, target routes will be identified and selected.	- Tessaban Mueang Ranong	2020-2030	1.0
6	Sidewalk improvement along the targeted routes	Sidewalk will be improved with the standard in order to promote the walkable city and to promote local economy along the road, especially for street vendors.	- Tessaban Mueang Ranong	2021-2030	5
7	Cityscape Improvement	Designing the cityscape to enhance city's image coupled with providing the proper facilities along the walkway. Also, the street furniture will be designed and developed along the route, this includes the rest areas, information board, and	- Tessaban Mueang Ranong	2021-2025	10



<b>Program 5-1: Improvement of Park, Transport and Cityscape Health Park Development with Walkable City Networks</b>					
	Project Name	Brief description	Implementing Agencies	Timeframe	Budget (mil bath)
		others. These are blended with the urban environment and cityscape.			
8	Intersection improvement	Improving intersection does not function for the traffic management only, but also it can function as a gateway and landmark of the city. The intersection, thus, will be designed and developed for both tourism promotion and traffic management.	- PAO	2025-2030	20
9	Planting improvement	Species of plants, bulbs, and trees will be identified and planted along the sidewalk. This is not only to give shady, but also to improve urban environment as a part of street furniture.	- DPT	2021-2030	5
<b>Traffic demand management</b>					
10	Car-free road in the specific time	The schedule of traffic management will be arranged to provide the car-free road in specific time. The trail of walking and car-free time will be examined before official operations to clarify the demands and needs of people. This aims to stimulate local economy and to enhance the public health of citizens.	- Rural Police Office - DLT	2025-2030	1
11	Parking management	Parking time and location will be managed together with the proper signage and information board will be developed. This includes private car, public transport, motorcycle and bike. Those will be kept orderliness of the city and will improve the traffic flows.	- Rural Police Office - DLT	2025-2030	2
<b>Public transport development</b>					
12	Public transport network improvement	Developing and studying Songteaw network and installing bus stop to reroute and improve its quality. The other transports will be provided and studied to provide options for citizens.	- DLT - PAO	2023-2030	10

<b>Program 5-1: Improvement of Park, Transport and Cityscape Health Park Development with Walkable City Networks</b>					
	Project Name	Brief description	Implementing Agencies	Timeframe	Budget (mil bath)
13	Smart songteaw mobile application	The route and stop of Songteaw will be identified to integrate into data system for developing mobile application. This also will be well-coordinated with the operators to register into the system. GPS will be installed to detect the timing and location of Songteaw. This aims to promote both traffic and personal safety through public transportation.	- OTP - DLT	2021-2025	10
<b>Promotion and Activities</b>					
14	Park use promotion event	Opening event for the park use will be arranged. The other activities of each generation will be allowed to performances inside the park with the public relation and arrangement.	- TAT - COC	2021-2030	2
15	Street market along the targeted route	The activities along the sidewalk will be well-organized to fit with the design and demands of citizens. Also, shops will be grouped and promoted as an event.	- TAT - COC	2025-2030	1

Source: JICA Project Team

## 2.3 Pilot Project under JICA’s Financial Support

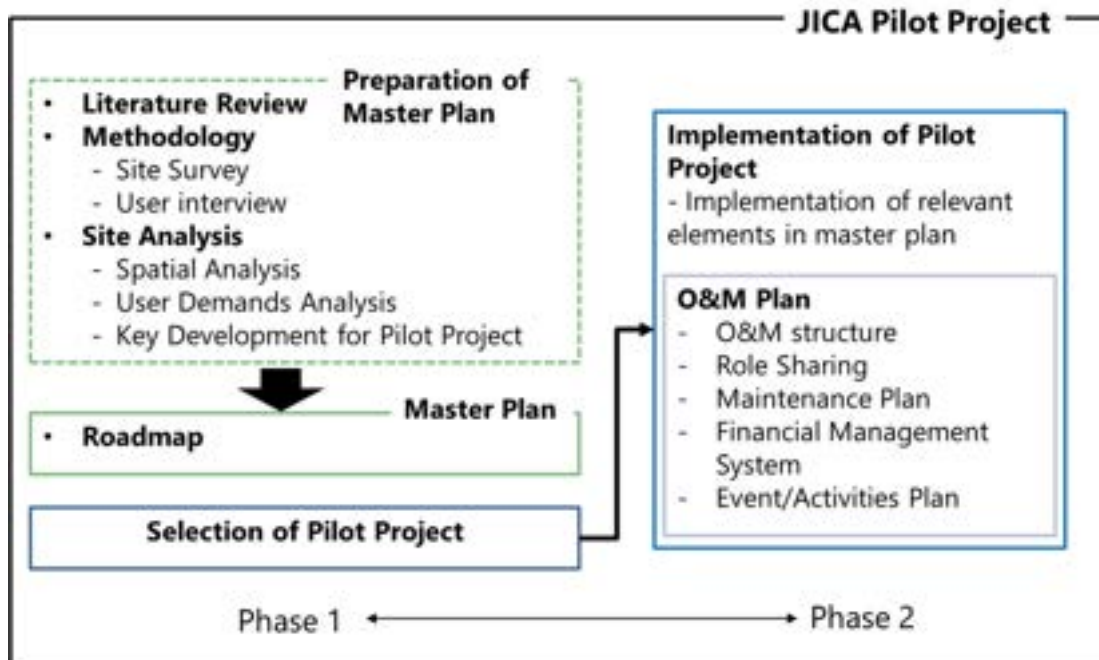
“Health Park Renovation with Walkable City Networks Project” was developed based on the two (2) potential projects under the program 4-1 Development of healthcare facility and care system and the program 5-1 Improvements of Park, Transport and Cityscape. It aims to create walkability network encouraging people to walk either for exercise or transportation. This project can be a part of the development toward health tourism and livable city with well-being by being an example walkable route from one spot to another spot with the suitable environment and facility.

### 2.3.1 Outline of JICA Pilot Project

#### 1) Component of the Pilot Project

The pilot project consists of two phases: Phase 1 (formulation of a master plan) and Phase 2 (implementation of the pilot project), as shown in Figure 2.3.1. In Phase 1, a master plan was formulated to develop the roadmap for overall projects of the site. Based on the master plan, some projects were piloted in Phase 2. The selected pilot project was designed in detail and implemented, including operation and management and relevant activities and/or events.

The pilot project was implemented using a participatory approach; the Pilot Project Team (PPT) consisted of key stakeholders in the pilot project site. At important or necessary timings, PPT meetings were organized to share the progress, gained opinions, and built consensus among PPT members.



Note: O&M = operation and management

Source: JICA Project Team

**Figure 2.3.1 Implementation Steps for the JICA Pilot Project**

### **Phase 1 Formulation of the Master Plan for JICA's Pilot Project**

To formulate the master plan, the conceptual framework is determined from several literature reviews and relevant studies to set the master plan direction. In the second step, the methodology is clarified to support site analysis.

In the site analysis, as the third step, the spatial analysis shows the existing condition of the pilot project site. This includes social, environmental, and economic aspects. The site observation is also applied to clarify the actual condition, potentials, and issues of the project site. Also, the user's demand analysis is conducted by focus groups and in-depth interviews to realize the needs of users and to reflect their needs and perspectives in the proposed plan.

With the results of site analysis, the master plan is formulated to present clear contents/characteristics and functions/roles of each area in the project site, linkage among the areas, and users' circulation. After that, the roadmap to the completion of the master plan is formulated. This includes prioritization of proposed projects and area for the detailed design, categorization of the proposed projects by the proposed implementation terms, and identification of key agencies and relevant agencies for each proposed project.

### **Phase 2 Implementation of the Pilot Project**

In Phase 2, some parts of the master plan are selected for implementation. The selected pilot project to implement is elaborated in detail. The establishment of an operation and management (O&M) system and design of activities/events to be conducted in the pilot site are also included in this phase.

#### **2) Pilot Project Site**

Considering the ongoing projects in Tessaban Mueang Ranong, i.e., (1) improvement projects of the DPT along the Had Som Phant Canal and Raksawarin hot spring and (2) the improvement on Permphon road pavement which will be implemented by Tessaban, the pilot project site would connect all projects together. Kamlang Sap Road connected to Raksawarin hot spring is a suitable area as a pilot project site to complete the walkability, public space, and sustainable development concept around this site.



Source: JICA Project Team

**Figure 2.3.2 Pilot Project Site**

### 3) Overall Goals and Objectives

The overall goal of the pilot project is to accomplish the sustainable development vision of Tessaban Mueang Ranong through the implementation of the SFC Plan. To support this overall goal, a master plan on Health Park Renovation with Walkable City Network was prepared and some parts of the proposed master plan were implemented. The project’s purposes for each social, environmental, and economic aspect which are supposed to be achieved based on the walkable city concept are shown below.

**Table 2.3.1 Purposes of the Pilot Project**

<b>Economic Aspect</b>	<b>Social Aspect</b>	<b>Environmental Aspect</b>
<ul style="list-style-type: none"> <li>- To improve economic value by increase accessibility and network.</li> <li>- To attract investor and user by improve aesthetic of area.</li> <li>- To increase commercial activities along the street and make the city safer.</li> <li>- To decrease infrastructure cost, operating cost and subsidized from the government by enhance connectivity and walkable network.</li> </ul>	<ul style="list-style-type: none"> <li>- To increase social accessibility and connectivity.</li> <li>- To build social equality which everyone has more transportation choices to access and using public space.</li> <li>- To increase sense of place and sense of belonging of Tessaban Mueang Ranong.</li> <li>- To enhance flexible and diverse activities for all user groups.</li> </ul>	<ul style="list-style-type: none"> <li>- To improve physical accessibility and connectivity.</li> <li>- To improve Tessaban Mueang Ranong’s aesthetic and identity through physical elements such as public facilities, street furniture, planting and street signage.</li> <li>- To provide adaptable public space and facilities that enhances citizen social life and variety activities for all user group.</li> </ul>

Economic Aspect	Social Aspect	Environmental Aspect
	- To support sustainable community development and management in Tessaban Mueang Ranong area.	- To improve comfort and safety environment. - To support sustainable physical development and management

Source: JICA Project Team

#### 4) Scope

The pilot project in Tessaban Mueang Ranong has the following scope of work:

- (1) Public space development – a further review and study to determine the clear needs for any additional physical development plans for the public space, and implementation of selected element(s); and
- (2) Walkable network with supporting activities - to ensure that the site would be designed as pedestrian-friendly and encourage people to walk from one spot to other spots, a user analysis is done to provide data on user behavior to help establish an engagement program and activities.

### 2.3.2 Conceptual Framework of JICA Pilot Project

#### 1) Concept of Public Space

Public space is an open and accessible place for people. Open areas, such as roads, walkways, public squares, and parks, as well as public buildings, such as public libraries and public sports centers, are public spaces. In 2012, the Charter of Public Space referred to public spaces as “all places publicly owned or of public use, accessible and enjoyable by all for free and without a profit motive,” (UN-Habitat 2015<sup>1</sup>).

Public spaces comprise three different physical and nonphysical types. Each type serves different, often multiple, purposes such as recreational, educational, and commercial activities, as follows:

##### Physical Types

- (1) **Streets** are a key element of connecting and activating urban life. This category includes neighborhood streets, sidewalks, and bicycle paths. Streets provide intracity mobility and support livelihoods and social cohesion in surrounding neighborhoods by accommodating various users such as pedestrians, public transport, vehicle drivers, and street vendors.
- (2) **Open and green spaces** are often used as a proxy for public space because it is easy to identify by its physical characteristics, and it is the most visible space for city dwellers. There are different sizes of parks and squares, gardens, and waterfronts. People are walking, running, resting, interacting with others, and enjoying greenery in these spaces. They benefit cities by mitigating densities and improving urban resilience.
- (3) **Public facilities**, some public facilities are public spaces, given their contribution to

<sup>1</sup> UN-Habitat (United Nations Human Settlements Programme). 2015. Global Public Space Toolkit: From Global Principles to Local Policies and Practice.

facilitating social interaction and civic engagements and providing services to neighborhoods and communities. Such public buildings can include public libraries, community centers, sport facilities, and markets.

### **Nonphysical Types**

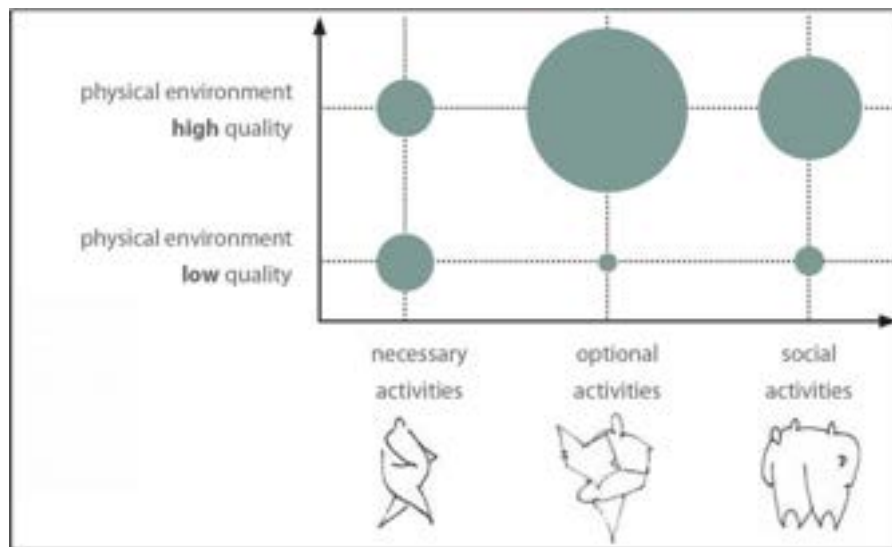
- (1) **The space of the public.** The term 'public' is not intended to refer to the general public but, rather, as the public sector realm. In this sense, the commons are not simply goods and places but also the social pact by which citizens delegate authority, contribute resources for the common good, and entrust their management to local officials.
- (2) **The city itself.** The city is viewed as the arena and expression of a physical and symbolic space devoted to all, shared by all and entrusted to all will support a comprehensive approach to public space and the idea of the city as a public good. This view is also germane to the arguments in favor of 'the right to the city'.
- (3) **Cyberspace.** Public space has always been the locus of encounter, interaction and communication. Cyberspace, through the internet and social networks, offers new opportunities for virtual encounters and interaction that can lead to the multiplication of 'real' interactions in 'real' space.

From the different types of public space, although each is represented in different spatial forms and using of time, all are referring to people, activities, and connectivity between people. Project for Public Spaces (PPS) study shows that the successful public space requires the following six key criteria.

- (1) **Access & Linkages** from public space to the city includes Accessible, Convenient, Walkable, Readable, Connected, Proximity and continuity
- (2) **Comfort and Image** of public space which are Safe, Clean, Green, Walkable, Suitable, Spiritual, Charming, Attractive and Historic
- (3) **Uses and activities** in public space Fun, Active, Vital, Special, Real, Useful, Indigenous, Celebratory, Sustainable
- (4) **Sociability** such as diverse, stewardship, cooperate, neighborly, pride, friendly, interactive, and welcoming
- (5) **Characterized by the presence** of people remaining when they have no pressing reason to stay.
- (6) **Well-managed:** this includes cleaning, offering food or services, or scheduling events, and such implementations can be managed the community, by individuals, by the city or district, or through local partnerships.

Furthermore, public space can reflect the social aspects. As PPS describes that "Great public space also ***serves as the heart of a community, often connecting two or more separate neighborhoods together, and encouraging a central point where people can interact and participate in the public realm.*** Another important but sometimes overlooked element of great public spaces is their ability to highlight an area's cultural identity - whether through local practices, location, history, design, architecture, or art. This is crucial factor for creating a sense of place that can withstand the test of time". According to Gehl (2013, p.50) "An increase in outdoor quality gives boost to optional activities in particular.

The increase in activity level then invites a substantial increase in social activities”.



Source: JICA Project Team

**Figure 2.3.3 Connection between Outdoor Quality and Outdoor Activities by Jan Gehl**

Moreover, public space also reflects economic aspects which good public spaces play a decisive role in attracting investment, uses and activities, thus enhancing safety; increasing property values, generating municipal revenue; providing opportunities for economic interaction and enhancing livelihood opportunities. A good connective matrix of public space has impact on economic productivity as it improves the efficiency of the supply chain, reducing production costs and promoting the mobility of goods and people. Public space provides important benefits to all forms of business, both formal and informal. In particular, public spaces where informal business can be carried out provide poorer urban dwellers with precious livelihood opportunities (UN-Habitat 2015). The World Bank study (2020) shows that “Well designed, well maintained, and responsive to diverse community needs public space can create economic benefits for the city by increasing land and property values in the surrounding area. Public spaces can enhance business sales, land and property values, and municipal revenues”.

## 2) Concept of Walkable City

“Walkable City” is a concept to create friendly environment for people with factors affecting connectivity, public space, trees and vegetation, sensations along street frontages and universal design that work for people. Moreover, Walkable city might be defined as “the extent to which the built environment supports and encourages walking by providing for pedestrian comfort and safety, connecting people with varied destinations within a reasonable amount of time and effort, and offering visual interest in journeys throughout the network” (Michael Southworth).

Key criteria of Walkable city are extremely valued for society and environment, and the quality of the public space and streetscape environment are the key for this concept. The criteria are composed of the following elements:

- (1) **Connectivity** the path network should be well connected without major gaps or



barriers, both locally and in the large urban setting.

- (2) **Linkage with other modes** pedestrian paths should be linked seamlessly, without interruptions and hazards, with other modes such as bus, streetcar, subway, or train, minimizing automobile dependence.
- (3) **Safety the pedestrian network** needs to be safe for people of varied ages and degrees of mobility, both from traffic hazards and crime.
- (4) **Transparency** refers to the degree to which people can see or perceive objects and activity especially human activity beyond the edge of a street.
- (5) **Quality of path** pedestrian paths needs to be well designed in terms of width, paving, landscaping, signing, and lighting.
- (6) **Path context** including street design, architecture and landscape, needs to offer visual interest.
- (7) **Human scale** refers to a size, texture, and articulation of physical elements that match the size and proportions of humans and, equally important, correspond to the speed at which humans walk.
- (8) **Placemaking** is the quality of a place that makes it distinct, recognizable, and memorable. A place has high imageability when specific physical elements and their arrangement capture attention, evoke feelings, and create a lasting impression.

### **3) Concept of Sustainable Development**

The concept of sustainable development was described by the 1987 Brundtland Commission Report as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” There are four (4) dimensions to sustainable development – society, environment, culture, and economy – which are intertwined, not separate. Sustainability is a paradigm for thinking about the future in which environmental, societal, and economic considerations are balanced in the pursuit of improved quality of life.

In September 2015, the General Assembly adopted the 2030 Agenda for Sustainable Development that includes 17 SDGs. Building on the principle of “leaving no one behind”, the new Agenda emphasizes a holistic approach to achieving sustainable development for all. Focusing on goal 11: Sustainable Cities and Communities out of 17 goals, its purpose is to make cities and human settlements inclusive, safe, resilient and sustainable in many dimensions which targets to the detail as follow:

- Ensure access for all. To adequate, safe and affordable housing and basic services and upgrade slums.
- Provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.
- Enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
- Strengthen efforts to protect and safeguard the world’s cultural and natural

heritage

- Significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations
- Reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
- Provide universal access to green and public spaces, which is safe, inclusive and accessible in particular for women and children, older persons and persons with disabilities
- Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning
- Substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels
- Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials

As listed in Goal 11 of SDGs, public space is one of the key elements for sustainable urban development. It is important not only focus on development but also mention how to manage a city and city elements such as dwellings, public transportation, and spaces in a sustainable way which includes an economic and environmental term for all of the city citizens.

#### **4) Key development criteria**

From concepts and theories mentions above, the key criteria of the pilot project are summarized and provided as listed below.

- (1) **Accessibility and Connectivity** focusing on both physical and social access and linkage to site area, Canal walkway and Health Park
- (2) **Aesthetics** in the perspective and sense of place of users.
- (3) **Activities** passive and active activities that include physical, social and economic activities in site area.
- (4) **Spatiality** includes area zoning, open spaces, green spaces and infrastructure that ensures safety, comfortableness, and convenience for all activities and user group.
- (5) **Management:** use public participation and context analysis to suggest the sustainable management plan for Tessaban Mueang Ranong Area.

**Table 2.3.2 Concept and Key Criteria of the Pilot Project**

Concept	Key criteria 1: Accessibility & Connectivity		Key criteria 2: Aesthetic		Key criteria 3: Activities		Key criteria 4: Spatiality	Key Criteria 5: Management
	Access	Linkage	Aesthetic	Sense of Place	Uses & Activities	Social	Comfort & Safe	Management
1. Public Space	☑	☑	☑	☑	☑	☑	☑	☑
2. Walkable City	☑	☑	☑	☑	☑	☑	☑	☑
3. Sustainable Development	☑	☑			☑	☑	☑	☑

Source: JICA Project Team

### 2.3.3 Methodology

The methodology used for formulating the master plan on Health Park Renovation with Walkable City Network is a mixture of quantitative and qualitative methods. The methodology is applied to support site analysis which consists of two main parts, namely spatial analysis and user demand analysis. The details are summarized as follows:

#### 1) Spatial Analysis

The spatial analysis, which used both primary and secondary data, was conducted to analyze the existing conditions of the site. The secondary data was mainly collected from several documents such as the LSDP of Tassaban Mueang Ranong, Provincial Development Plan, etc. The primary data was collected by site observation, which was a main method for collecting spatial data of the site such as activity nodes.

#### 2) User Demand Analysis

User demand was analyzed by three (3) main methods: offline questionnaire survey, in-depth interview and focus group meeting to gain better understanding of user behavior, perception, satisfaction, and development needs. The details of each method are summarized below.

##### Questionnaire Survey

The purpose of the survey is to identify user characteristics, behavior, perception, as well as their satisfaction and needs regarding public spaces and facilities, transportation and accessibility, related services for park usage and to gather suggestions to improve the project site. 114 samples were collected among 200 samples targeted in four (4) main areas: the health park, canal walkway, Permphon Road and Kamlangsap Road. The survey was conducted during 3 time periods (9.00-12.00/12.00-16.00/16.00-20.00) both weekdays (18<sup>th</sup>-19<sup>th</sup> June 2020) and weekend (20<sup>th</sup> June 2020). The data on current satisfaction and future development asking on the questionnaire were collected based on the key criteria of the pilot project which are accessibility, activity, spatiality, aesthetics and management of each area.

##### In-Depth Interviews

The objective of the in-depth interviews is to clarify the opinions and satisfaction levels of users of the facilities, transportation and accessibility, related services for park usage and exchange opinions and perspectives on the proposed spatial plan and projects in the site.

About 2-3 people were targeted for the 1 on 1 interview for 1 hours each and snowball sampling method was used to recruit other participants from key player user.

For the participants from public sector, the key question is focused on the identity of Ranong, and the other questions are related with trend of the development in the future from their perspectives. The topics are listed below.

- (1) Identity of Ranong as a person who plays a role in city development
- (2) Municipal projects and future projects
- (3) Trends of tourism development and related projects of Ranong
- (4) Obstacles in city development

For the other participants, the following questions were asked for the interviews.

- (1) Identity of Ranong as local people
- (2) Factors that attract people to do activities in public space
- (3) Problems in using Ranong public areas
- (4) What should the development of Ranong have to consider?

### **Focus Group Meetings**

The objective of the focus group meetings is to exchange opinions on existing conditions, direction of future development and identity of the area from different perspectives of each stakeholder group. The focus group was done in the afternoon of 17 July 2020. There were the following three (3) expected target groups.

- Group 1: Stakeholders with high influence and high interest. This group consists of landowners and related project owners such as Tessaban Mueang Ranong, DPT, Ranong Provincial Public Health Office, Ranong Province Office of Tourism and Sports, etc.
- Group 2: Stakeholder with high influence and low interest. This group consists of private developers that influence development in the future such as hotels, street vendors, Chamber of Commerce, Ranong Young Entrepreneur Club, etc.
- Group 3: Stakeholder with low influence and high interest. This group consists of educational institution, NGOs, communities that will engage in the public participation as well as visioning process of Ranong such as Ranong Technical College, Ranong Cycling Association, etc.

One facilitator was informed and presented the preliminary analysis from observation, questionnaire survey, in-dept interviews and case studies. Therefore, the result from the focus group will strengthen the demand of users toward Ranong future development plan. The two (2) following questions were asked during the focus group session.

- What is important for Ranong Future Development?
- What is your opinion about our development plan and ideas to develop a master plan in the future?

The information and data obtained from the surveys and documents were analyzed by

several kinds of analysis including physical analysis, content analysis, and user analysis. The results were summarized and discussed to gain ideas on public space designs, development approaches, and management of the project site and reflected into the master plan.

## 2.3.4 Site Analysis

### 1) Spatial Analysis (Existing Condition)

#### Overview of Pilot Project Site

The project site connects to two (2) historical roads which are Permnhphon Road and Kamlangsap Road. Besides, it also connects to Had Som Phant canal where the walkway will be developed under the DPT's project (see Figure 2.3.4).



Source: JICA Project Team

Figure 2.3.4 Vicinity of the Pilot Project Site

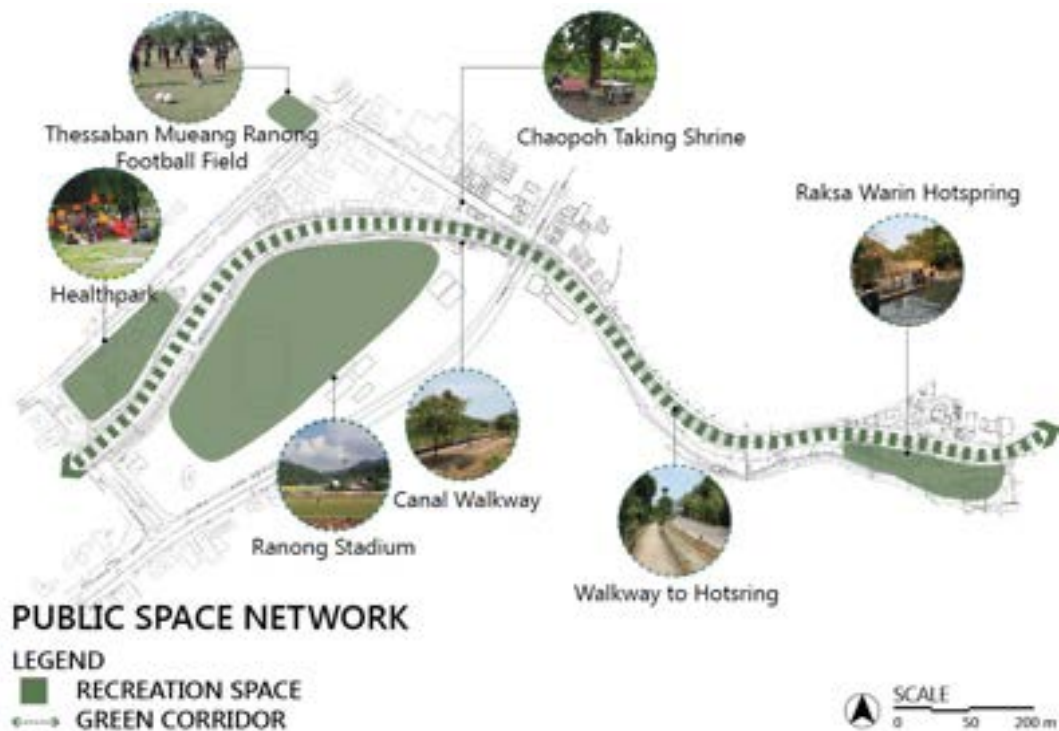
#### Public Space Network around the Project Site

Public space is the key element in a city, being a place for doing physical and social activities in the community to promote urban interaction. There are three (3) categories of public spaces in Tassaban Mueang Ranong:

- (1) **Place:** Ranong Stadium, Health Park, Tassaban Mueang Ranong Football Field, Chaopoh Taking Shrine, and Raksawarin Hotspring. These support various roles of the community both for meeting and recreational activities, including physical activities. There is a radius service covering the district and easily accessible for people, but is still lack of activity connections.
- (2) **Plaza:** Phraya Damrong Sucharit Mahisornpakdee Monument Plaza. These support

various roles of the community for meeting and recreational activities, including physical activities. Also, these are used for special events and festivals in the city.

- (3) **Path:** Walkway, canal walkway and walkway to hot spring. In most cases, a path is a passageway to places. Some areas are occupied by vendors, especially on Kamlangsap Road in front of Ranong Hospital. This causes low accessibility for people to this space for social interaction.



Source: JICA Project Team

**Figure 2.3.5 Public Space Network in Tessaban Mueang Ranong**

### Attractions and Activities in Tessaban Mueang Ranong

#### a) Active activity

- **Government and Hospital Services** are gathered on Permphon and Kamlangsap road. Users of this area mostly are government employee, hospital employee and vendors. The usage time is from 08.00-16.00 on weekday for government services, and all the time for hospital services.



Source: JICA Project Team

**Figure 2.3.6 Active Activity: Government and Hospital Services**



- **Sports and Play** are gathered in Ranong stadium and Health Park. Users of this area mostly are residents which are family with a child and employees. The usage time is from 06.00-08.00 and 17.00-20.00 on weekday and weekend.



Source: JICA Project Team

**Figure 2.3.7 Active Activity: Sports and Play**

- **Trade and service** are gathered on Ruangrat road which is well known as Ranong's trade route but is not a target of the pilot project. There are markets, shop-houses, restaurants, and hotels along the road with various types of users in descending order, employee and migrant worker in tourism and service industry, residents and visitor. The area has a period of usage time from 06.00-22.00 on weekday and weekend.



Source: JICA Project Team

**Figure 2.3.8 Active Activity: Trade and service**

**b) Passive activity**

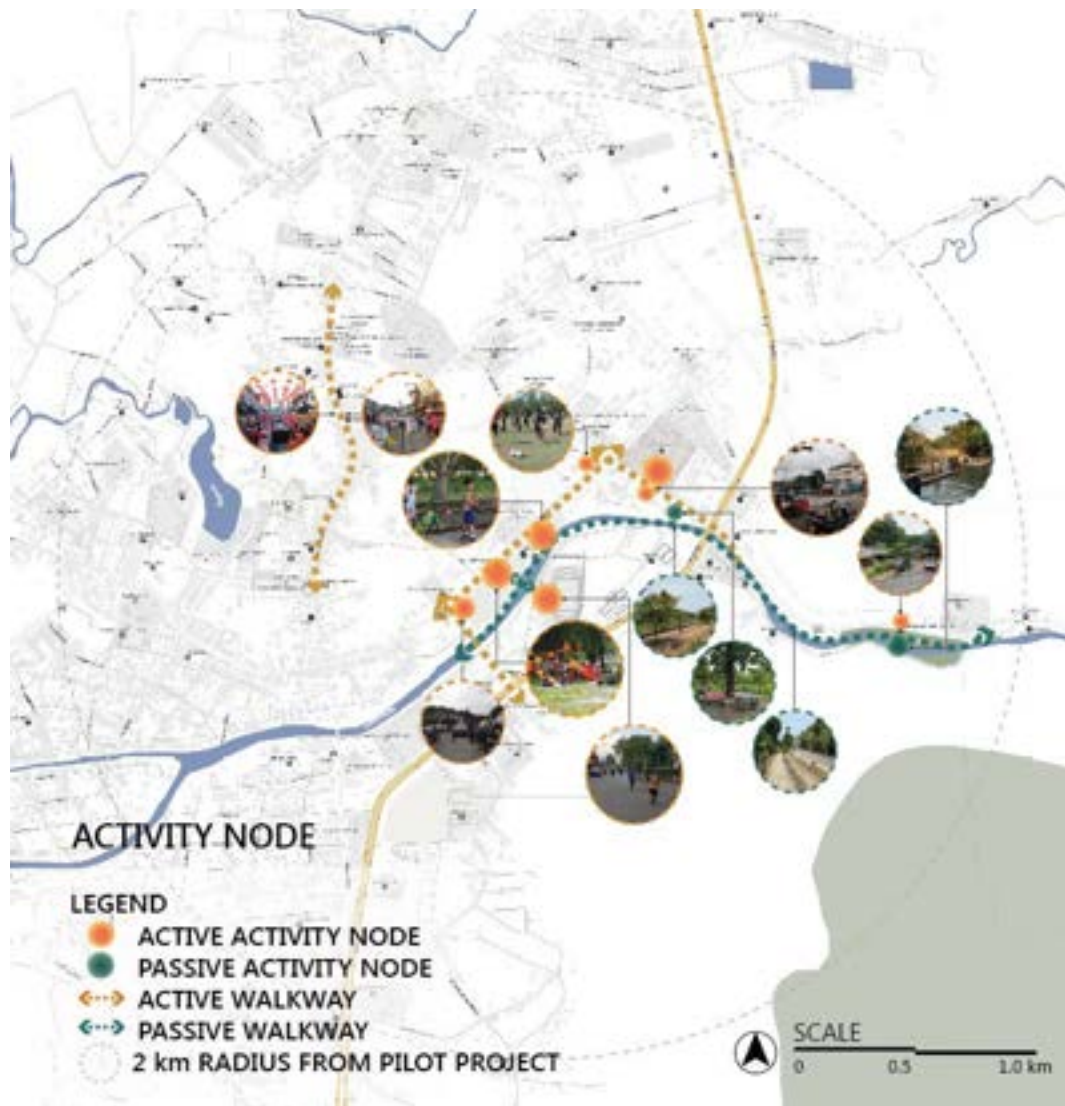
- **Recreation** is gathered in hot spring, health park and canal walkway. Users of this area mostly are residents which are family with a child, employees and visitors. The usage time is from 16.00-18.00 on weekday and weekend.



Source: JICA Project Team

**Figure 2.3.9 Passive Activity: Recreation**

Nodes of activities around the project site are summarized in Figure 2.3.10.



Source: JICA Project Team

**Figure 2.3.10 Activity Nodes in Tessaban Mueang Ranong**

### **SWOT Analysis of the Pilot Project Site**

A SWOT analysis of the existing spatial condition identifies the strengths, weaknesses, opportunities, and threats of the project site, as follows:

#### **(1) Strengths**



Characteristics of the factors that give it an advantage over others.

- Rich natural resources for health and wellness
- Rich cultural assets and tourism resources
- Facility for walkability and cycling

**(2) Weaknesses**

Characteristics of the factors that place a disadvantage relative to others.

- Lack of events and social activities to create city attractiveness
- Lack of people network between places
- Lack of distribution system and market for local products
- Unwell equipped for cycling and walking

**(3) Opportunities**

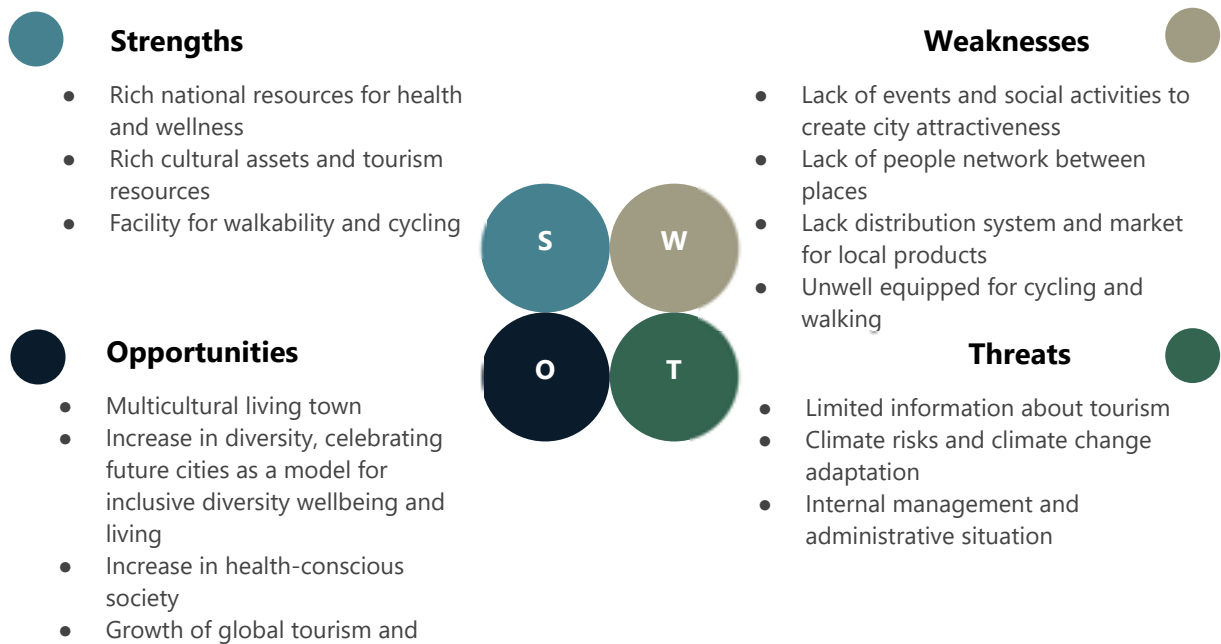
Elements in the environment that the project could exploit to its advantage.

- Multicultural living town
- Increase in diversity, celebrating future cities as a model for inclusive diversity wellbeing and living
- Increase in health-conscious society
- Growth of global tourism and regional tourism

**(4) Threats**

Elements in the environment that could cause trouble for the business or project.

- Limited information about tourism
- Climate risks and climate change adaptation
- Internal management and administrative situation



Source: JICA Project Team

**Figure 2.3.11 SWOT Analysis of the Pilot Project Site**

## 2) User's Needs Analysis

### A) Questionnaire Survey

There were about 114 respondents to the questionnaire given to 200 target people, both residents and visitors from outside the Tessaban. The questionnaire sheets were collected from four areas, i.e., Permphon Road, Kamlangsap Road, canal walkway, and health park (see Figure 2.3.12)



Source: JICA Project Team

Figure 2.3.12 Survey Area

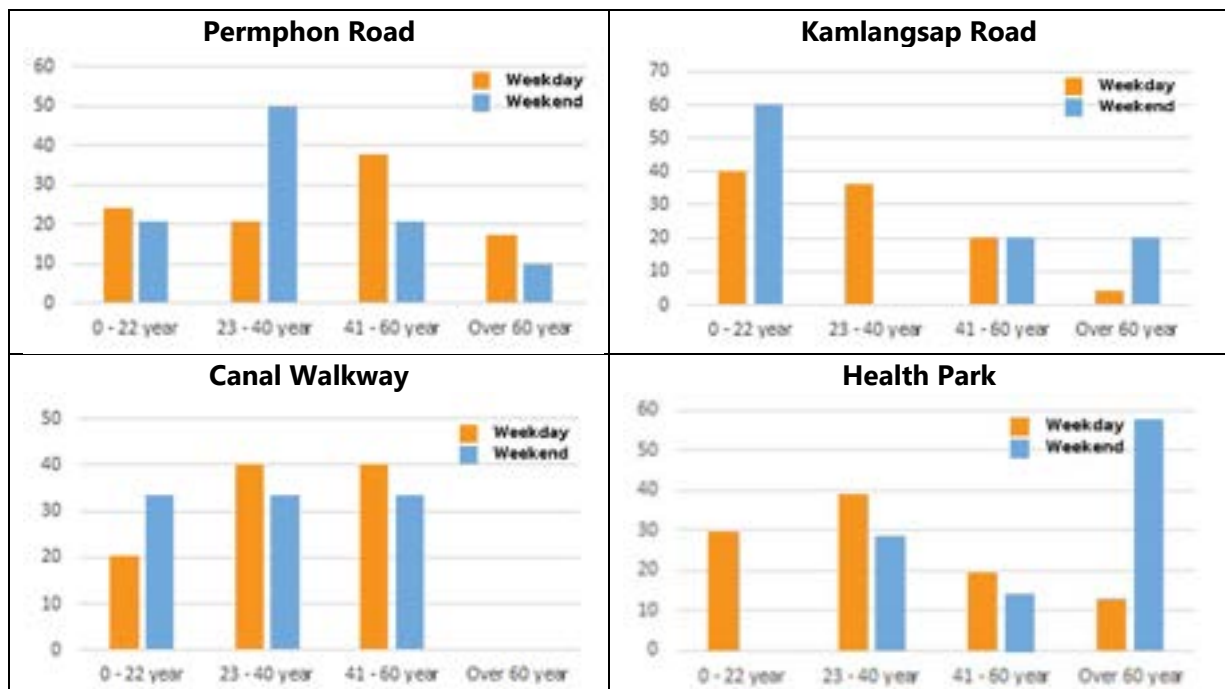
### Demographic Characteristics of Respondents

- **Permphon Road** - Permphon Road is mostly used by adults, employees, and elders (31 years old and older), mostly are the age group of 41-50 years old on the weekday. On weekend, Permphon Road is mostly used by teenagers and adults (18- 40 years old), mostly are the age group of 23-40 years old, with variety of careers. Most of the respondents travel to Permphon Road by cars, followed by motorcycles, walking and bicycles respectively.
- **Kamlangsap Road** - On weekdays, Kamlangsap Road is mainly used by teenagers and adults (18-30 years old), mostly are the 18-22 years old students and employees/government employees who work and live in the Tessaban. On weekend, Kamlangsap Road is mainly used by teenagers at the age group of 18-22 years old.

Most of the respondents travel by motorcycles, followed by cars and walking respectively.

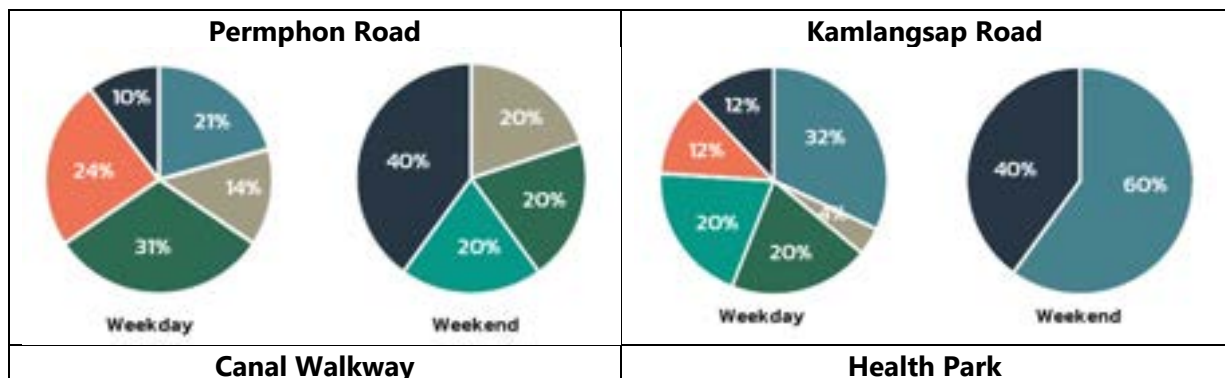
- **Canal Walkway** - Age of the respondents highly diverse covering from 18 to 60 years old. Most of them are employees. Most of the respondents travel by motorcycles, followed by cars and bicycles respectively for both on weekday and weekend.
- **Health Park** - Health Park is mainly used by kids and family. On weekdays, the Health Park mostly used by adults age range between 23-40 years old, mostly are students and freelance while elders more than 60 years old mostly use on weekend. Most of the respondents travel by motorcycles, followed by cars, bicycles and walking respectively.

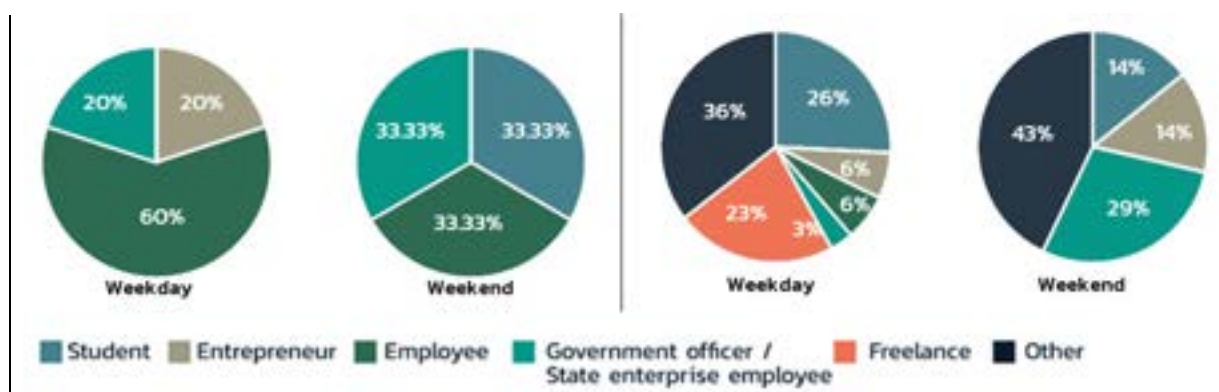
All in all, users of those public spaces differ in each area depending on the attractions nearby and the period. Cars and motorcycles are main transportation mode to reach those public spaces. Age and occupation of respondents are summarized in Figure 2.3.13 and Figure 2.3.14 respectively.



Source: JICA Project Team

**Figure 2.3.13 Number of Weekday and Weekend Users by Age Group**





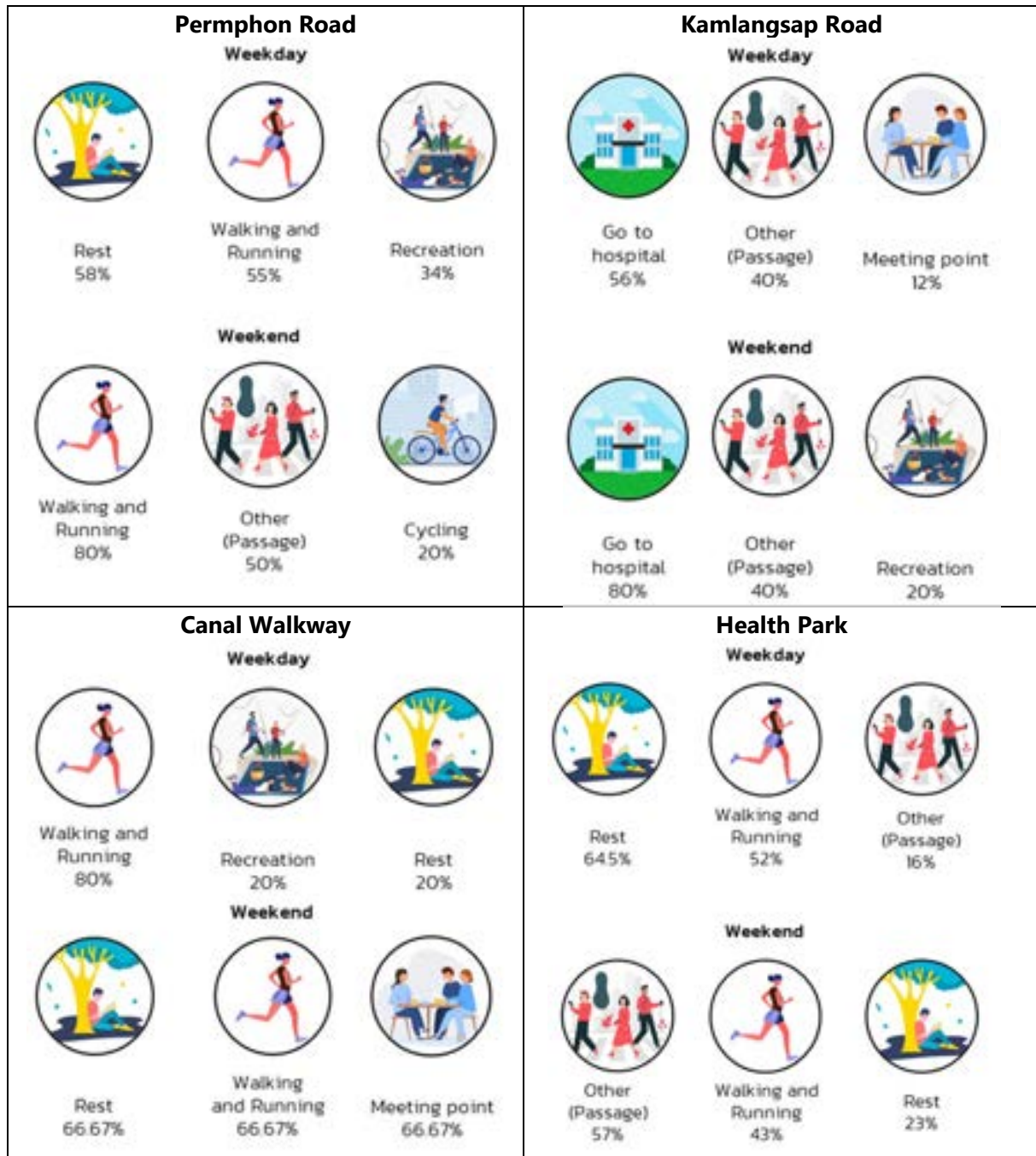
Source: JICA Project Team

**Figure 2.3.14 Occupations of Users**

### Current Usage of the Pilot Project Site

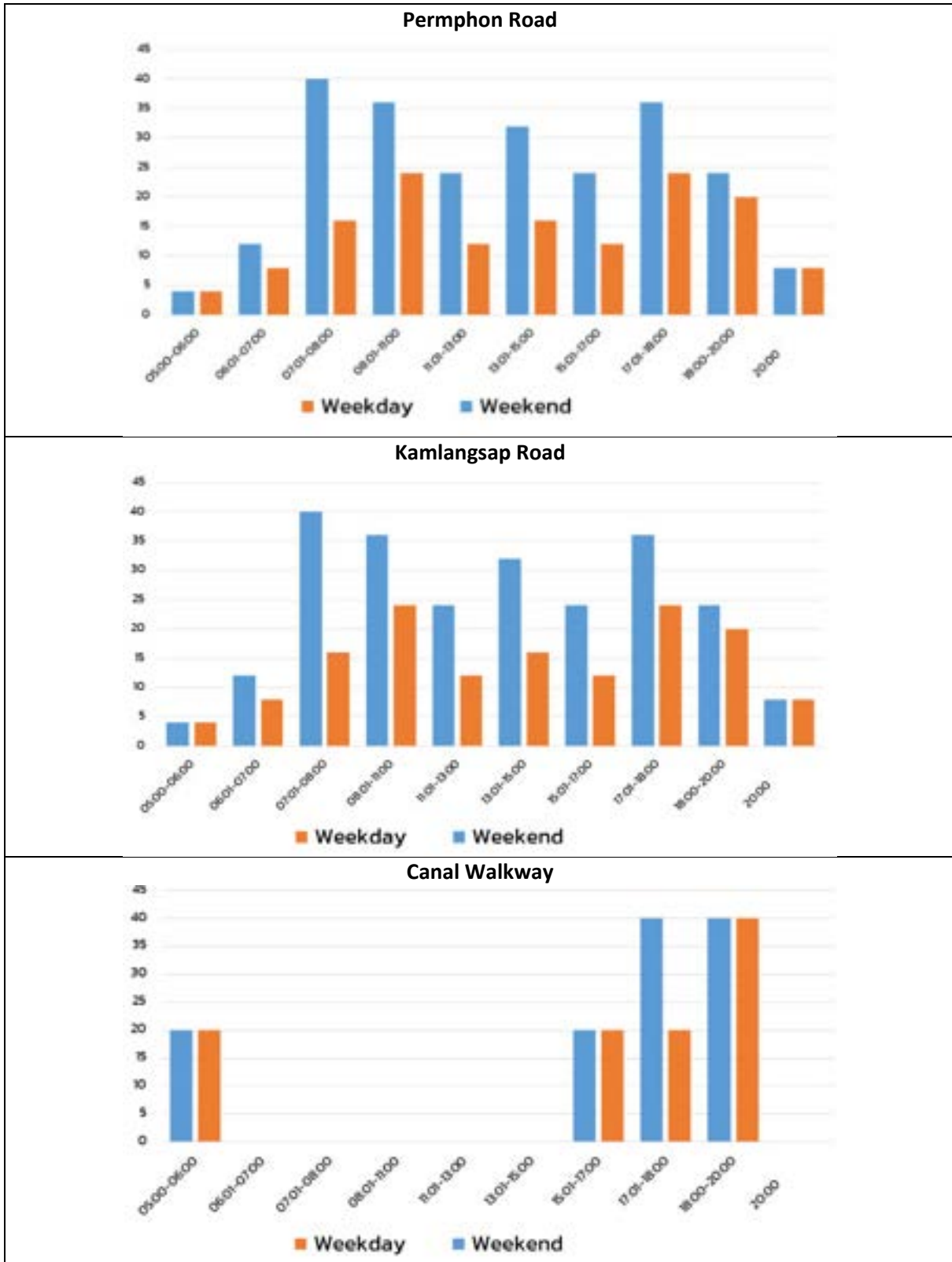
- **Permphon Road** - 85% of the respondents live in Tessaban Mueang Ranong. Most of them spend time along Permphon Road for resting, doing exercise such as walking and running, and other recreation activities on weekdays while they use the area as a passage and for walking, running and cycling on weekends. More than 50% of the respondents use Permphon Road with their families, following by themselves and with friends respectively. Most active time is 8.00-11.00 am and 5.00-6.00 pm during weekday while is 7.00-11.00 am during weekend.
- **Kamlangsap Road** - 67% of the respondents live in Tessaban Mueang Ranong area. Most of their purpose of visit is to go to hospital and use as a passage, both on weekdays and weekends. More than 40% of the respondents use Kamlangsap Road with friends, following by themselves and with family members respectively. This area is active all day, but most active time during weekdays is 8.00-11.00 am and 5.00-6.00 pm, and is 7.00-8.00 am during weekend.
- **Canal Walkway** - 62.5% of the respondents live in Tessaban Mueang Ranong. Most of them spend time along Canal Walkway for resting, doing exercise (such as walking and running) and use as a meeting point on weekends while mostly for doing exercise (such as walking and running) on weekdays. Most of the respondents use Canal Walkway alone or with their friends. Most active time on weekdays is the evening especially during 5-8 pm while most active time on weekend is in the evening specially during 8-11 pm.
- **Health Park** - 68% of the respondents live in Tessaban Mueang Ranong. Most of them spend time in the Health Park for resting and doing exercise (such as walking and running) on weekdays while for doing exercise (such as walking and running) and use as a passage on weekends. Most of the respondents use the Health Park with their families and with friends. Most active time is in the afternoon especially during 3-6 pm.

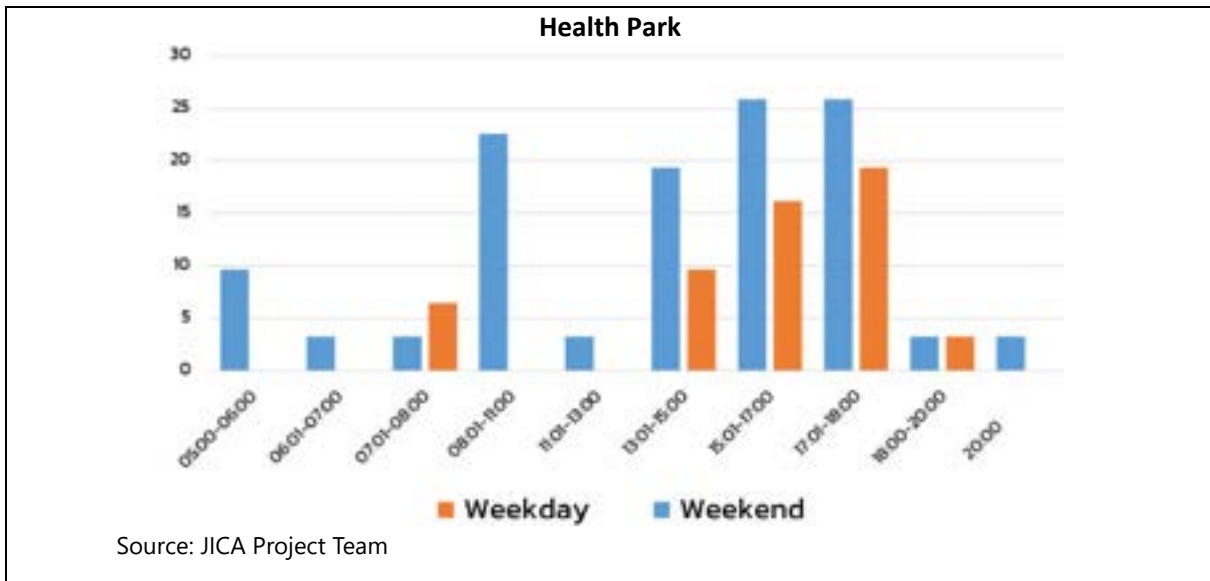




Source: JICA Project Team

**Figure 2.3.15 Weekday and Weekend Activities in the Pilot Project Site**



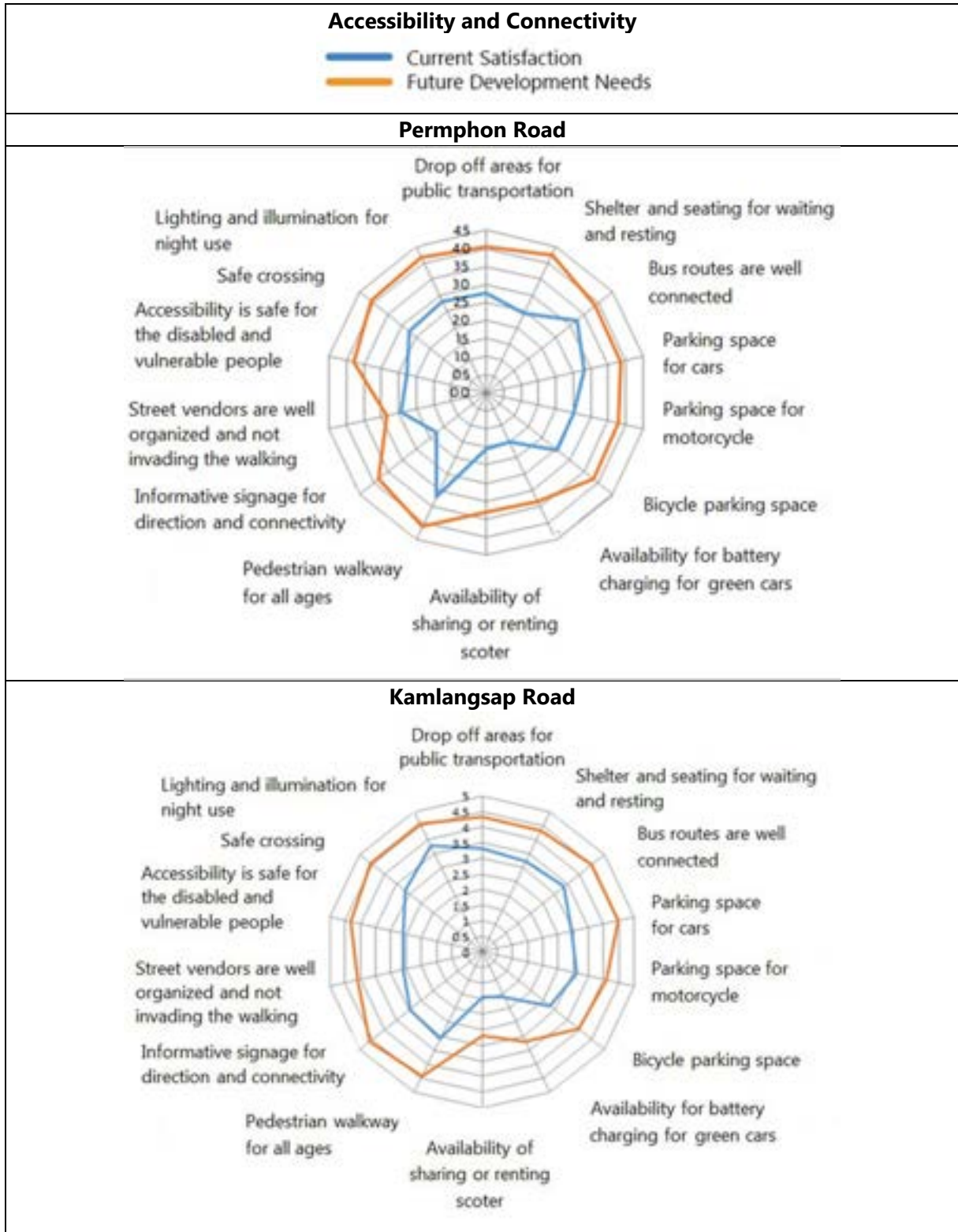


**Figure 2.3.16 Time and Duration of Visit**

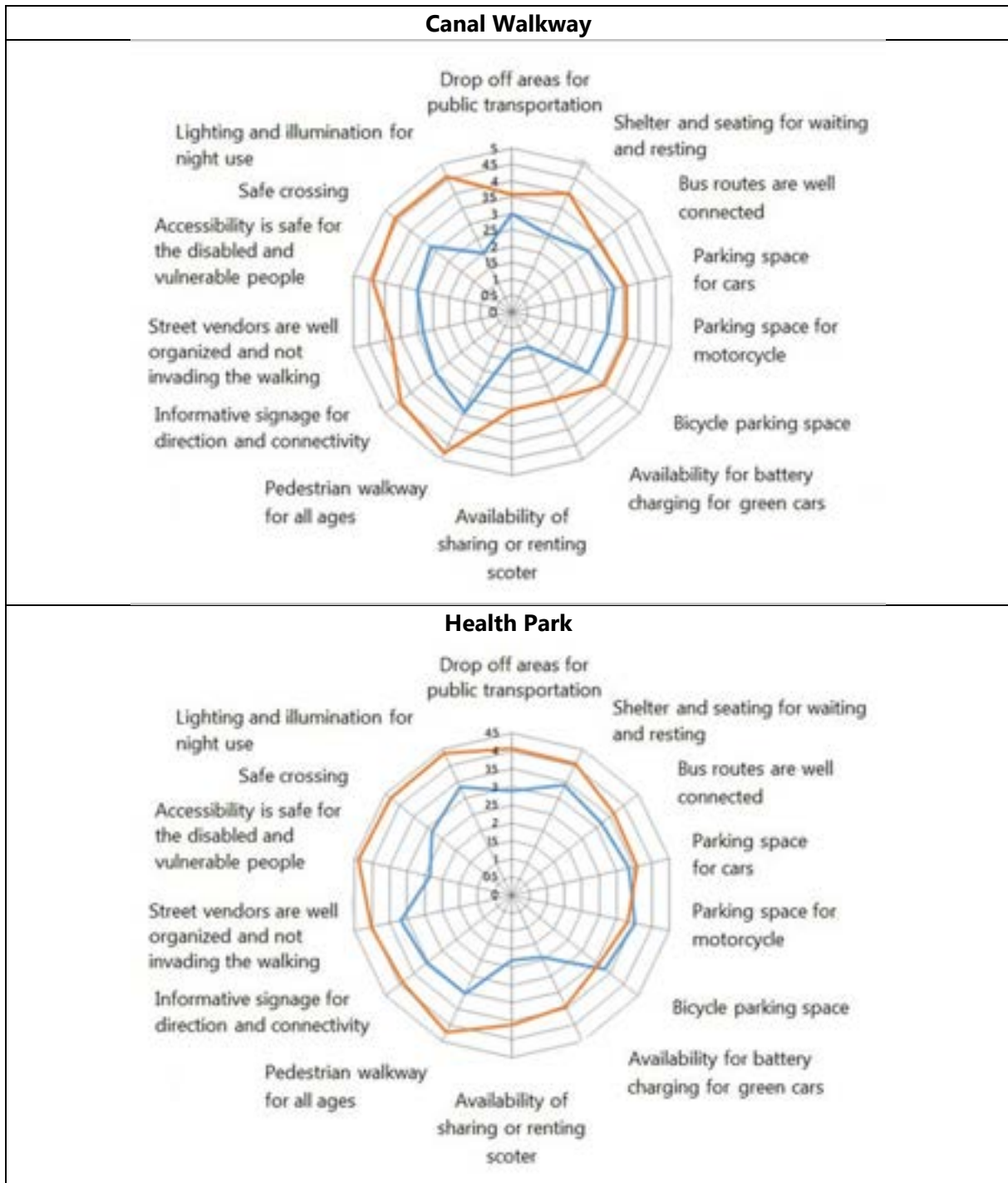
**1) Opinion about current satisfaction and recommendations**

The answers on current satisfaction and future recommendations were analyzed in accordance with the key criteria: accessibility and connectivity, activity, spatiality, aesthetics, and management. Figure 2.3.17 to Figure 2.3.21 show the level of satisfaction and the need of future development for each area.

- **Criteria 1: Accessibility and Connectivity** - The respondents are likely to answer that they are dissatisfied with or neutral for the items listed in the questionnaires. On the other hand, the respondents see that most of the existing facilities are important for the development in the future and should be improved. Key issues that should be highlighted in each area are addressed below.
  - **Permpthon Road** – Pedestrian walkway with resting areas and informative signages is needed. High needs are also seen in lighting and illumination for safety at nighttime.
  - **Kamlangsap Road** – Safety and accessibility for disabled and vulnerable people as well as all ages and nighttime use is needed. Informative signage and car parking are also be highlighted.
  - **Canal Walkway** – Pedestrian walkway that is accessible and usable for all ages is required. Safety for crossing and nighttime use should also be highlighted.
  - **Health Park** – Safe accessibility for disabled and vulnerable people are highly needed. Safety for crossing and nighttime use should also be highlighted.





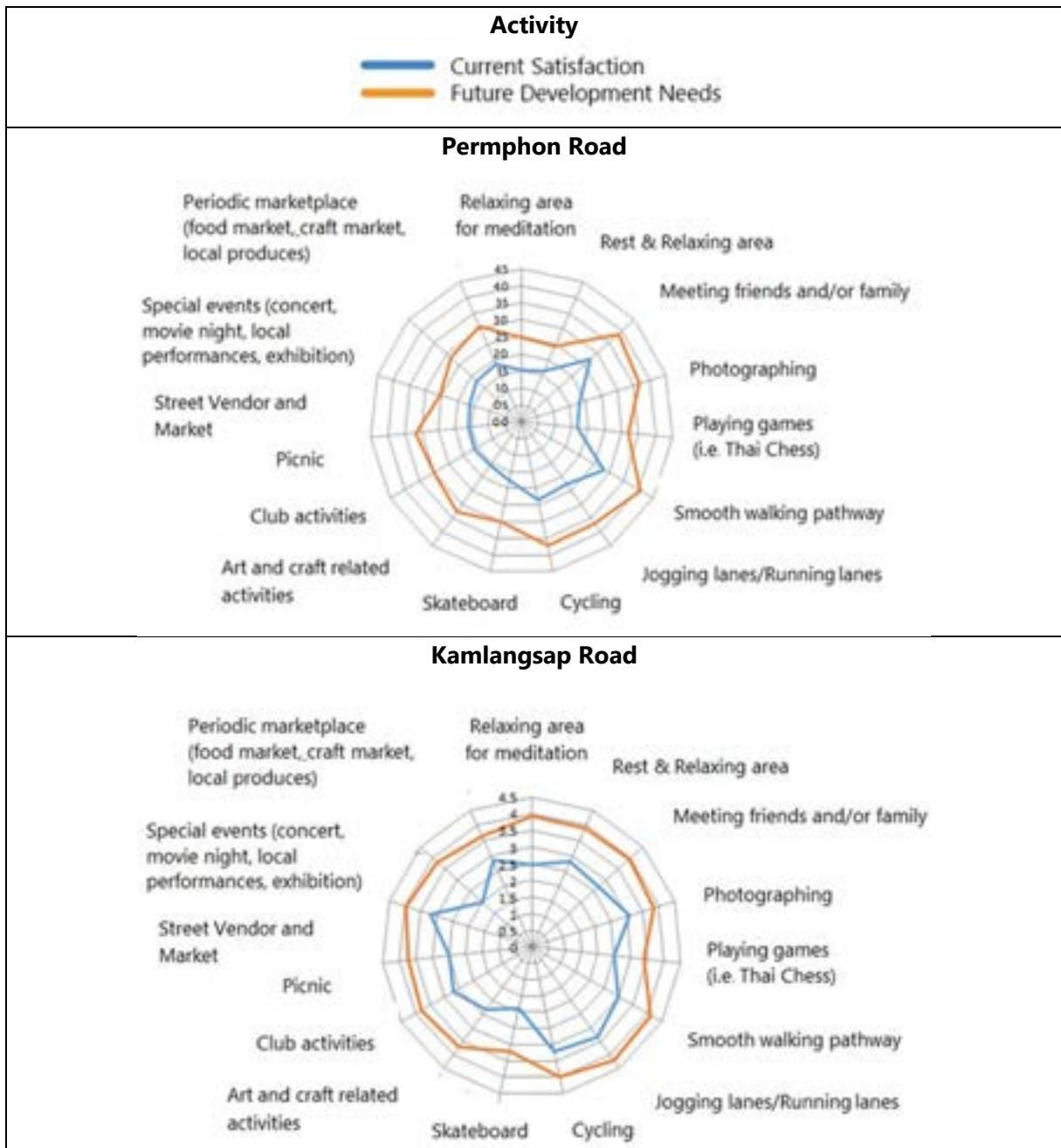


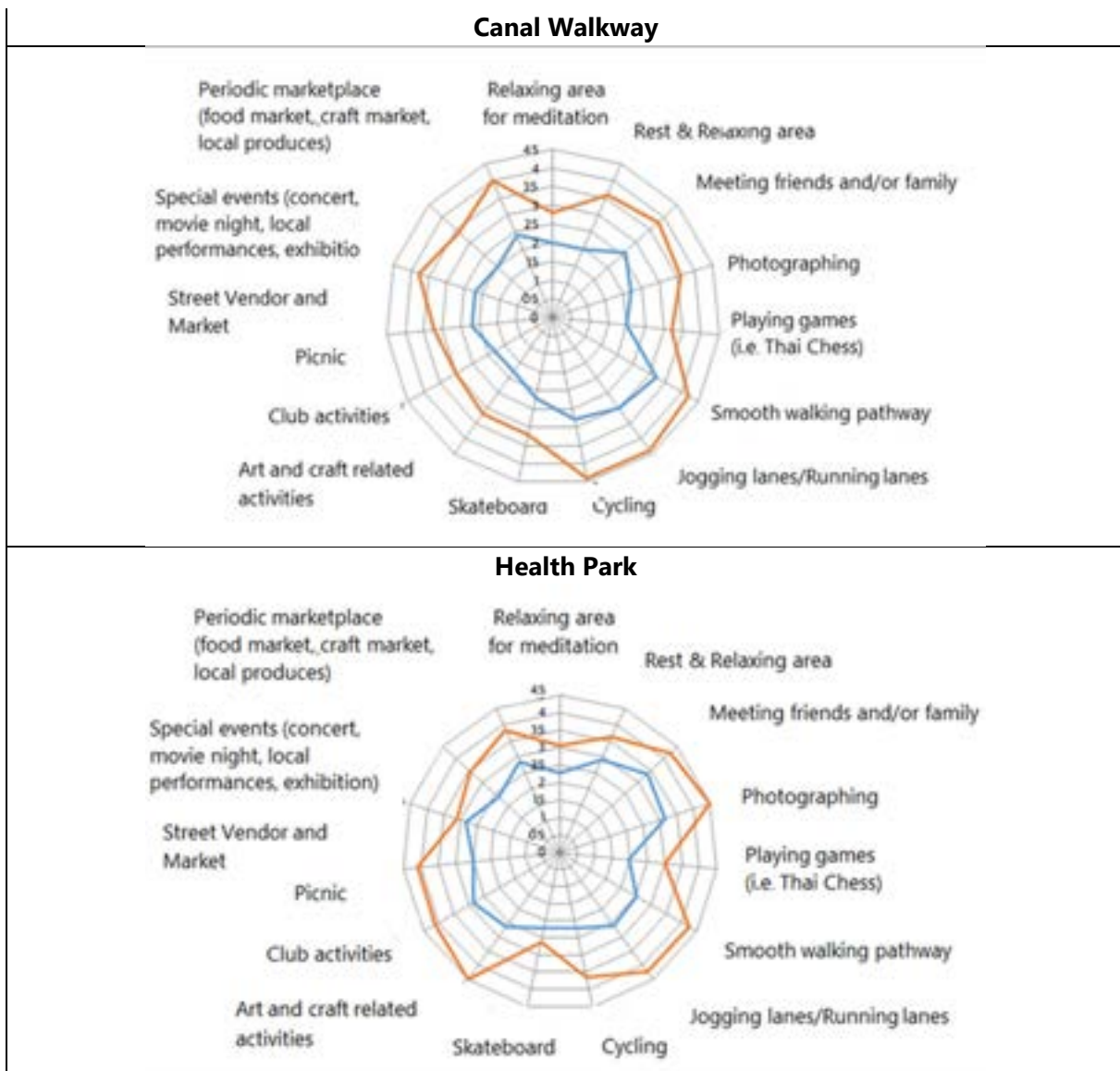
Source: JICA Project Team

**Figure 2.3.17 Satisfaction with and Need for Criteria 1: Accessibility and Connectivity**

- **Criteria 2: Activity** – There are limited activities for public spaces in Tessaban Mueang Ranong due to lack of facilities and designs that are not appropriate for multi-activities in one certain area particularly on the pedestrian walkway. Thereby, most of the respondents are not satisfied with or neutral for the current activities and they expect to have more spaces for variety of activities in the future. Key issues that should be highlighted in each area are addressed below.
  - **Permphon Road** – High needs are seen in smooth walking pathway.

- **Kamlangsap Road** – There should be some occasional events or temporary market such as local food market, handmade market as well as passive activities such as picnic or meditation. High needs are seen in smooth walking pathway and jogging/running lanes.
- **Canal Walkway** – Spaces for walking, jogging or cycling are needed.
- **Health Park** – Enjoyable activities while walking such as photographing and art and craft related activities should be promoted. Sports or active activities like skateboard, walking, running, or photographing are needed. Meeting area is also required.

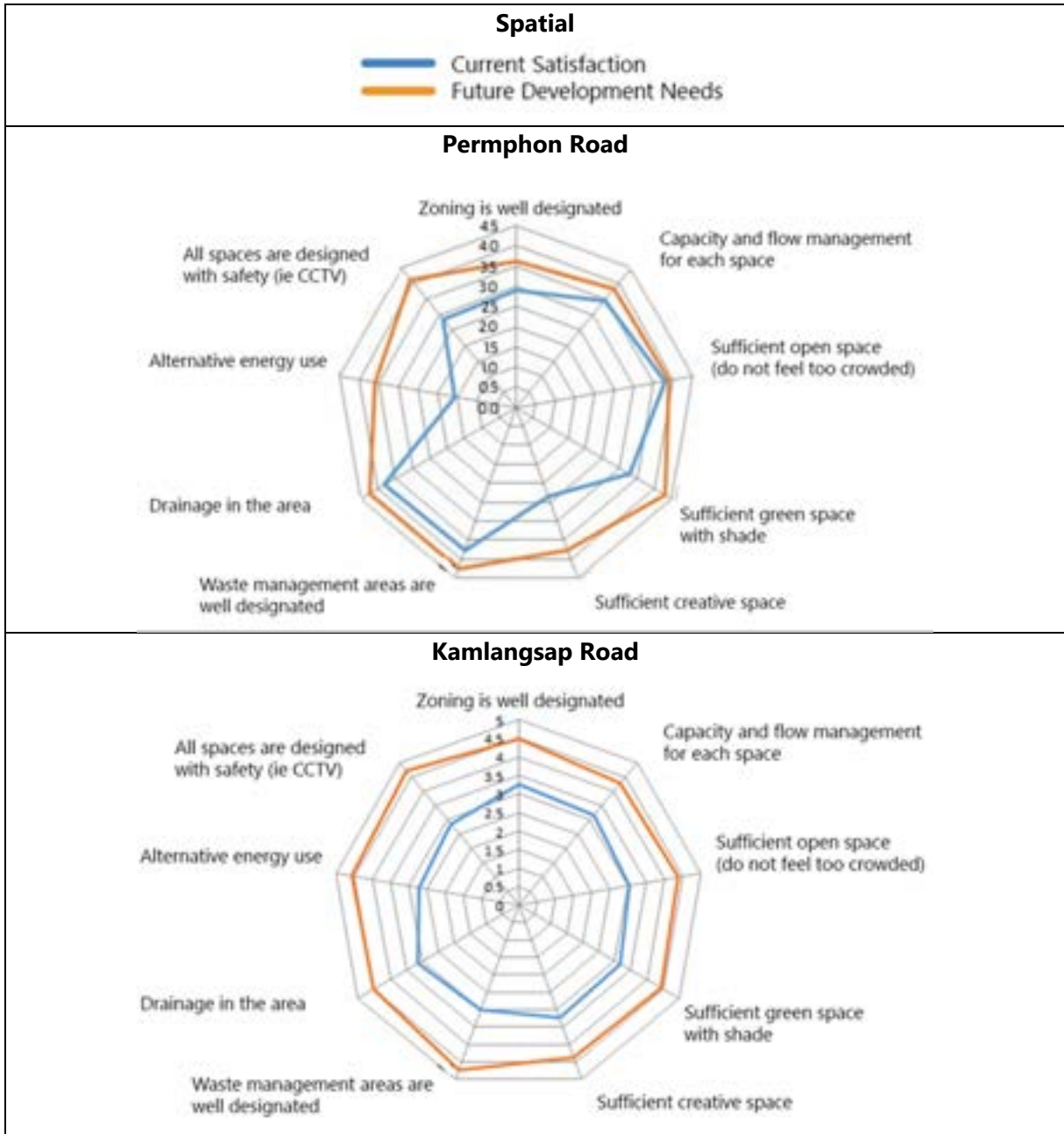


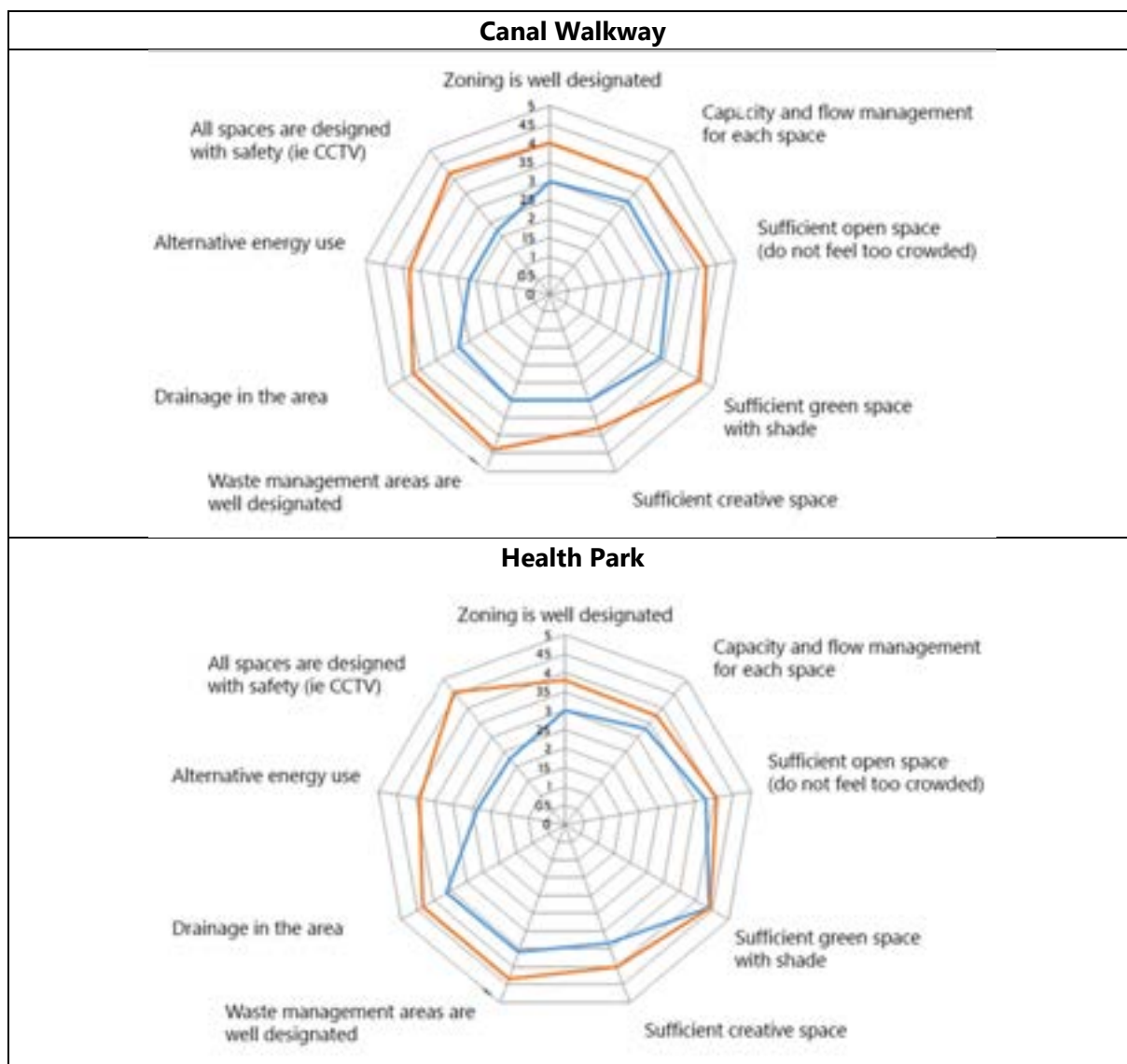


Source: JICA Project Team

**Figure 2.3.18 Satisfaction with and Need for Criteria 2: Activity**

- **Criteria 3: Spatiality** – In term of the spatial aspects in the areas, majority of the respondents are concerned on safety especially lack of CCTVs in all areas. It is clearly seen that the alternative energy consumptions are completely lacking in the site. Key issues that should be highlighted in each area are addressed below.
  - **Permpthon Road** – Sufficient green space with shade is required. High needs are also seen in using alternative energy.
  - **Kamlangsap Road** – Safety and effective waste management are required. High needs are also seen in using alternative energy.
  - **Canal Walkway** – The area requires safety and sufficient greene space with shading to cover both sunlight and rainfall. High needs are also seen in waste management.
  - **Health Park** – Safety is needed.



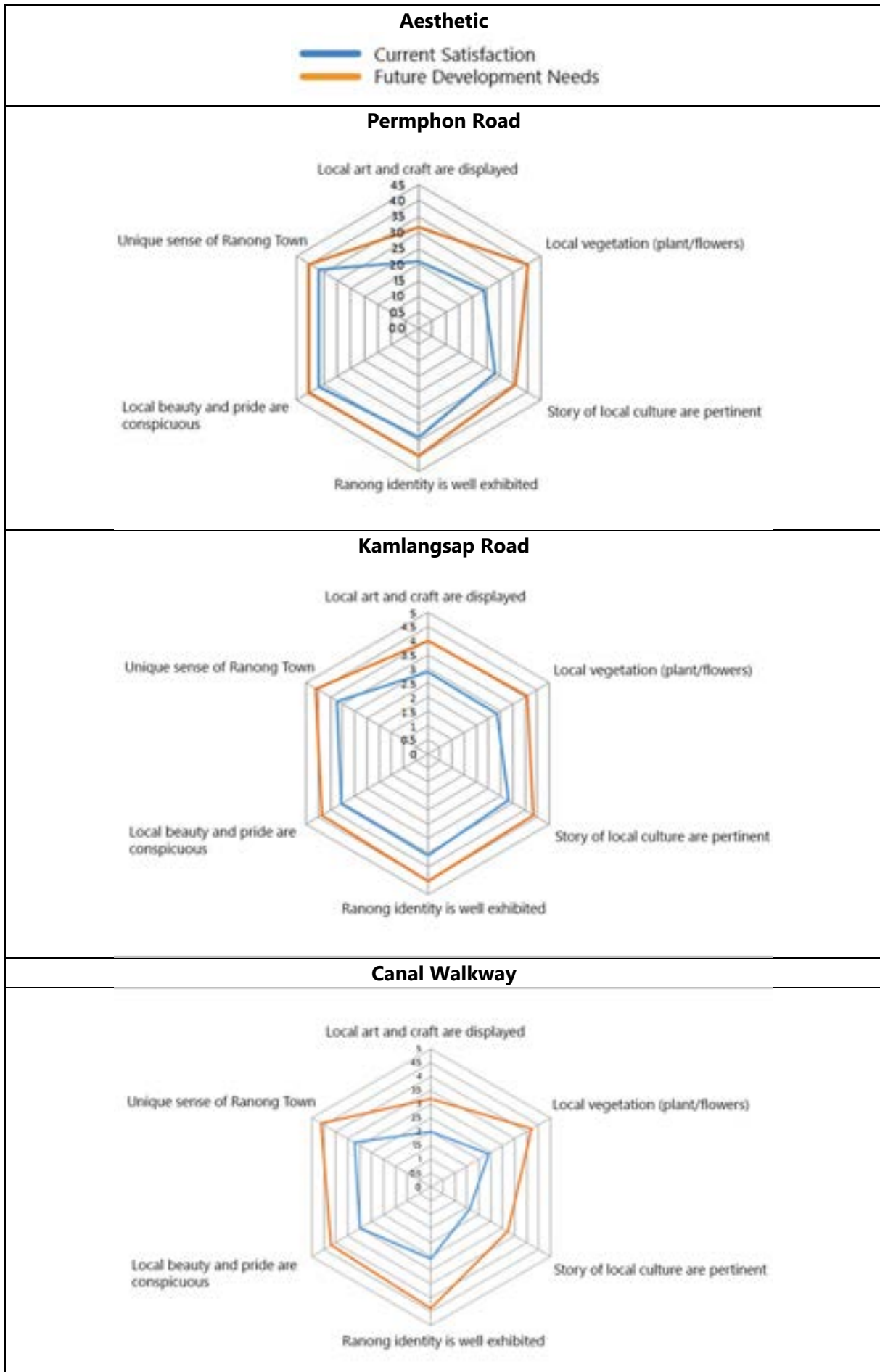


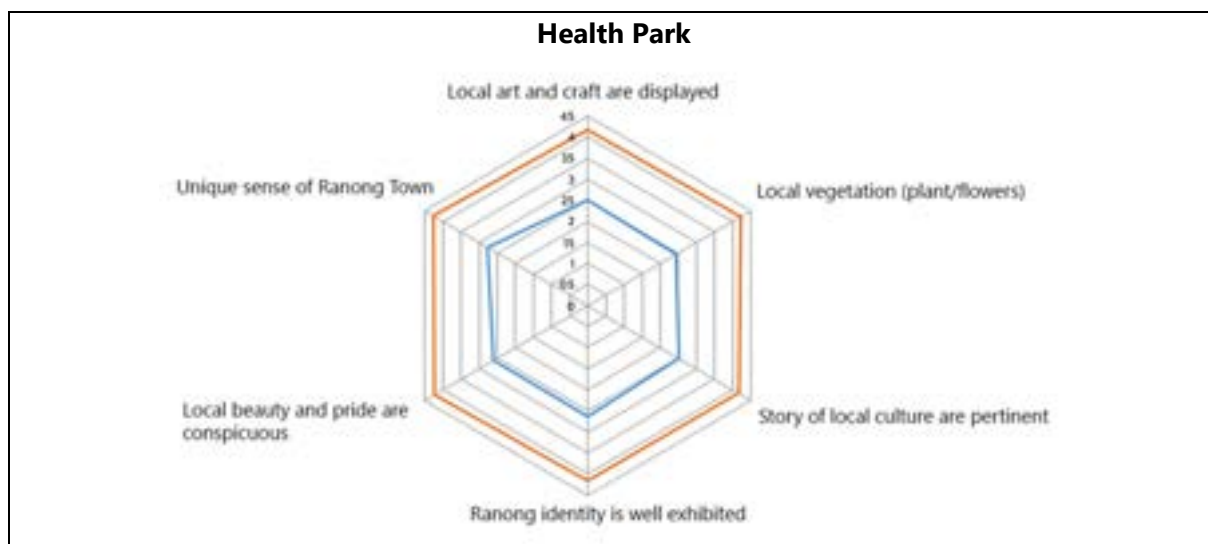
Source: JICA Project Team

**Figure 2.3.19 Satisfaction with and Need for Criteria 3: Spatiality**

- **Criteria 4: Aesthetics** – The respondents seem to be satisfied with the aesthetics and beautification of Ranong in term of local pride, unique sense of the town, identity, and culture except from local art and local vegetations. They value the important of future development of those elements. Key issues that should be highlighted in each area were addressed below.
  - **Permpchon Road** – Ranong identity and uniqueness, especially local vegetation should be developed.
  - **Kamlangsap Road** – Ranong’s identity and uniqueness should be developed.
  - **Canal Walkway** – The uniqueness and local vegetation should be improved to support the identity of Ranong
  - **Health Park** – The park should be developed in all dimensions for aesthetic equally.





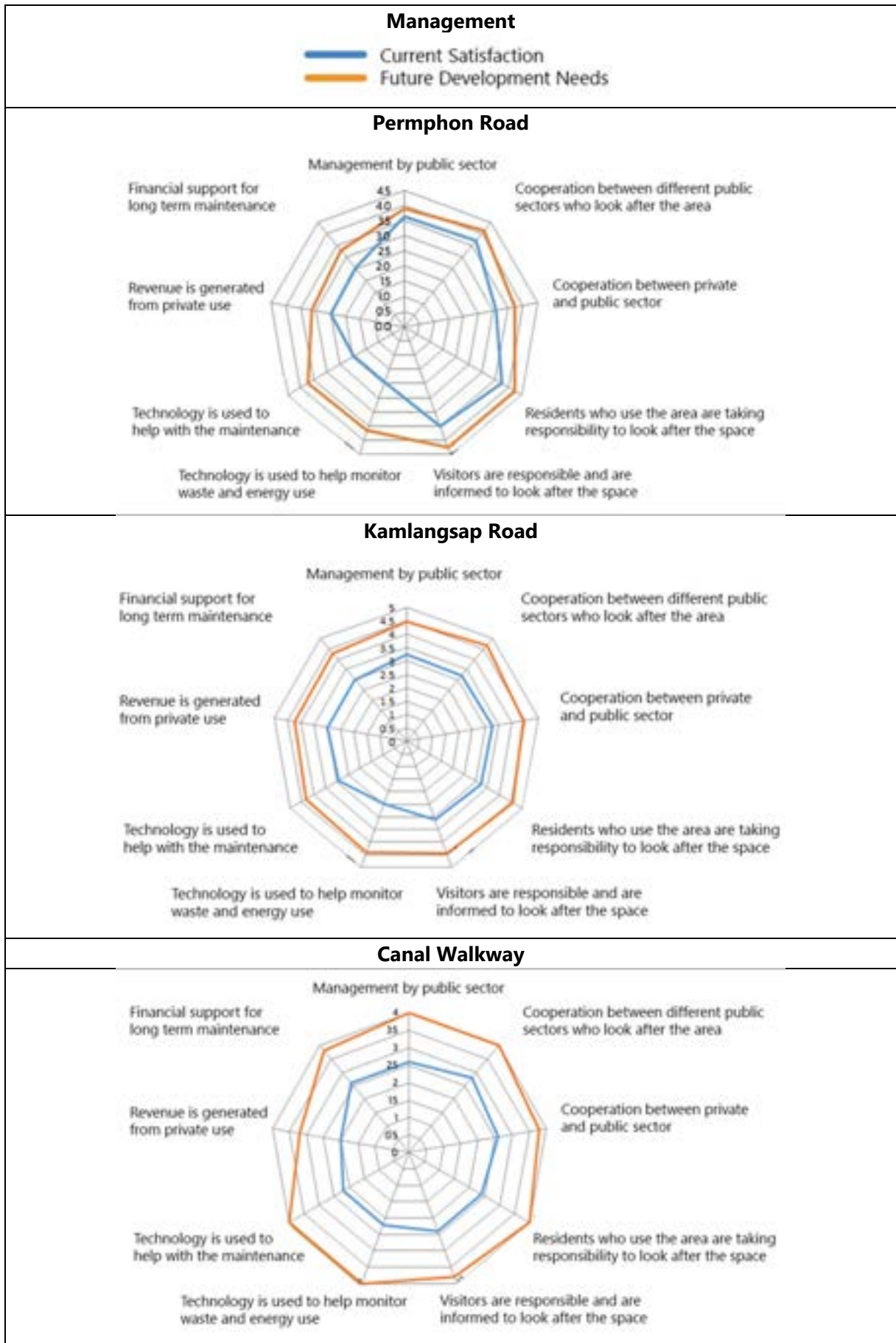


Source: JICA Project Team

Figure 2.3.20 Satisfaction with and Need for Criteria 4: Aesthetics

- **Criteria 5: Management** – Technology seems to be rarely used for the monitoring on the use and management of waste or energy. Furthermore, the respondents found out that there is lack in revenue generated from private use. Key issues that should be highlighted in each area are addressed below.
  - **Permpthon Road** – Involvement of residents and visitors in the area management is needed. Technology should be integrated for management of solid waste and energy.
  - **Kamlangsap Road** – The interorganizational collaboration and integration of technology for waste and energy management are needed.
  - **Canal Walkway** - The interorganizational and multisectoral collaboration and integration of technology for waste and energy management are needed.
  - **Health Park** – The interorganizational collaboration for public space management is needed. High needs are also seen in using technology for waste management and energy use.







Source: JICA Project Team

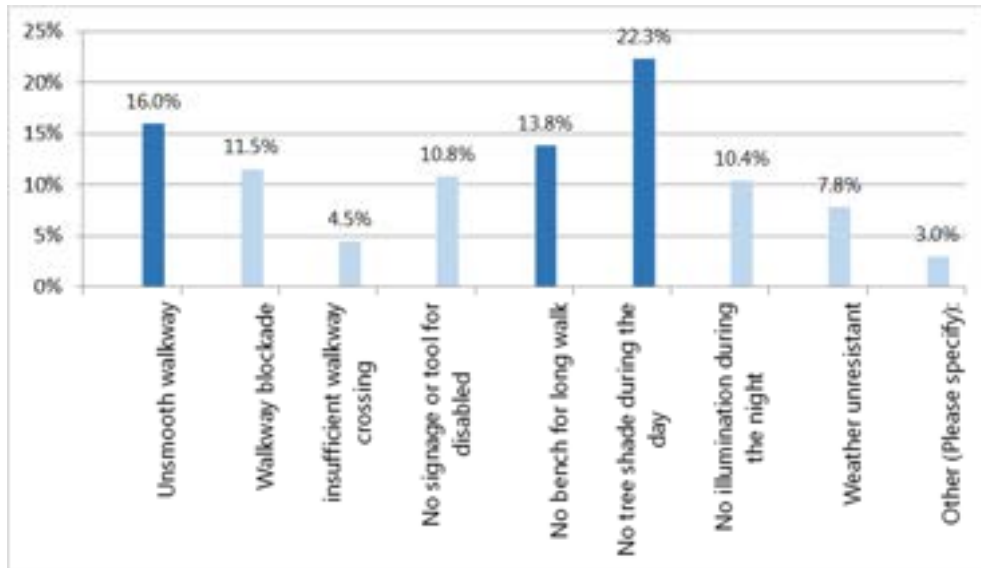
**Figure 2.3.21 Satisfaction with and Need for Criteria 5: Management**

- **Future user group and activities**

Users are likely to rely on the activities and attractions of the certain places.

- **Permphon Road** - Permphon Road area is surrounded by government offices and public use areas such as municipal stadiums. Future user group of this area will be the same as current users include families, employees from nearby offices, and entrepreneurs. The activities in the area are recreation activities, walking, and running.
- **Kamlangsap Road** - Ranong Hospital, dormitories, and Pho Ta Khing community are located along Kamlangsap Road. Future user groups of this area will be employees, service sectors such as vendors, motorcycle-taxi, and students. This area is used as a public transportation node and meeting point. Moreover, Kamlangsap Road connected from Phetkasem Road, the main access to Tessaban Mueang Ranong, should be designed as the landmark of the city.
- **Canal Walkway** - The canal walkway is an area under the development project of the DPT. This area has the potential to be the Tessaban Mueang Ranong's main recreation area and the linkage of the city's main public spaces including Ranong provincial stadium, city plaza, or a health park. Of this area will be employees, government officers, and students.
- **Health Park** - Health Park is an area that connects to canal walkway and city plaza. Future user groups are kids and family, government officers, and employees

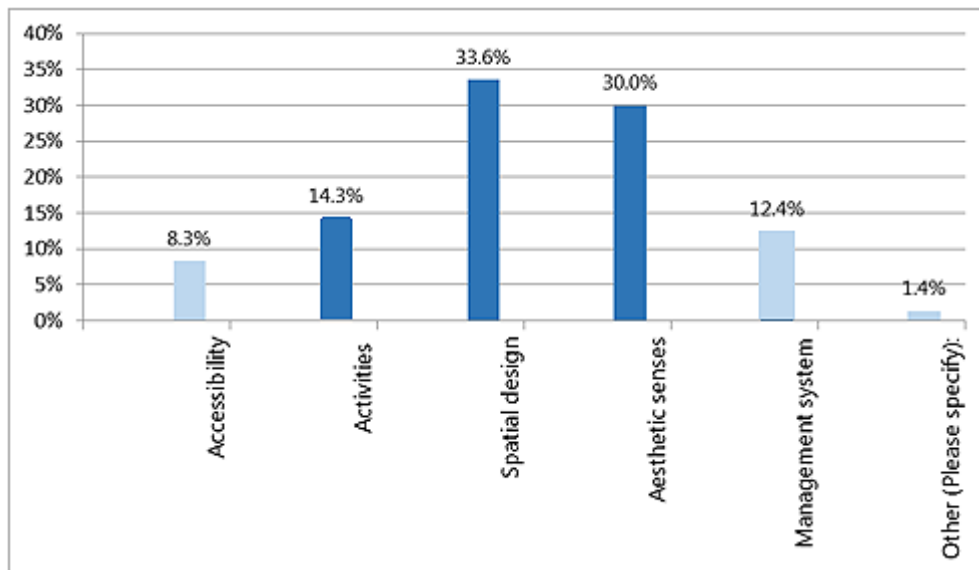
According to the results of the questionnaire survey, the problem that obstructs most of walking activities in Tessaban Mueang Ranong is a lack of shade along the walkway such as trees and roofs. Moreover, poor quality of walkways and unsmooth pavement and a lack of street furniture on the walkway, for example, bench and rest area cause low demand for walking.



Source: JICA Project Team

**Figure 2.3.22 Obstacles to Walking**

Interestingly, as shown in Figure 2.3.23, the most motivation for walking is the spatial design (33.6%). The second is the aesthetics of the design (30.0%), and the third is activities along the pedestrian walkway (14.3%).



Source: JICA Project Team

**Figure 2.3.23 Motivations for Walking**

97% of the respondents regard Ranong as a healthy city. Besides, the respondents also think that Tessaban Mueang Ranong is suitable for development as ecotourism (21%), cultural and traditional tourism (16%) and health tourism (16%).

**B) Results of In-depth Interviews**

In-depth interviews were conducted with 2 local government officers; mayor of Tessaban Mueang Ranong and Director of public work division of Tessaban Mueang Ranong, and 5 community leaders in different communities which are Bangsan Community, Soi 9

Community, Ranong Land Community, Talad Gao Community, Rong Kluang Community. The interview with the community leaders was set as a group interview. The results of the interviews are described in Table 2.3.3.

**Table 2.3.3 Results of In-depth Interviews**

<b>Tessaban Officer 1</b>	<b>Tessaban Officer 2</b>	<b>Community Leaders</b>
<b>Q: Identity of Ranong as a person who plays a role in city development</b>		<b>Q: Identity of Ranong as local people</b>
Ranong is a tropical city with heavy rain. A future project of the municipality has to consider the climate of Ranong. History of Ranong related to the first governor of Ranong, Chao Phraya Damrong-Sujarit-Mahisorn-Pakdee (Cor Su Jiang), and King Rama V, should be used as the identity of the city.	Green and resourceful city as well as the healthy lifestyle of people and activities that reflect the city characteristic are the identity of Ranong	The calm and peaceful place that suitable to stay and live is an identity of Ranong. In addition, strong community and neighborhood make the lives in Ranong convenient.
<b>Q. Municipal projects, future projects and visions</b>		<b>Q. The factor that attracts people to do activities in public space</b>
Tessaban Mueang Ranong has the following projects to be implemented in the future. <ul style="list-style-type: none"> <li>- The development of Permphon road walkway</li> <li>- The development of the Khlong Hat Som Phant canal walkway</li> <li>- Raksawarin Area Development</li> <li>- Ranong Old Town Master Plan (Unofficial)</li> </ul> All the above projects can enhance the activities and economy of Tessaban Mueang Ranong. Moreover, the pilot project will be an important part to connect between this high potential project together.	<ul style="list-style-type: none"> <li>- Promoting urban development for health and tourism responds to National strategies.</li> <li>- Promote the development of public areas and green areas to meet the needs of all user groups to have good health and lower hospital expenses in the future.</li> <li>- Promote the process of public participation in the city management to create understanding and cooperation from the people. And publicize through various channels at the community level for access.</li> </ul>	<ul style="list-style-type: none"> <li>- Good public spaces which are safe, convenient and provide public services such as toilet and waste management.</li> <li>- Vibrant and diversity of activities</li> <li>- Public Spaces as a meeting point for local people</li> </ul>
<b>Q. Trends of tourism development and related projects of Ranong</b>		<b>Q. The problems in using Ranong public areas</b>
Health tourism and tourism routes that connect landmarks of the city can promote the tourism activities of the city. The	Ranong has resources and potential that is suitable for developing into a health tourism city. Urban development that has	Problems are seen in low-quality pavement and walkway, vendor stall blocking traffic, and lack of

<b>Tessaban Officer 1</b>	<b>Tessaban Officer 2</b>	<b>Community Leaders</b>
Walkway is the key to promote tourism activities and tourist attractions of Ranong.	potential and attracts tourists will be the main factor to enhance the economy of the city	lighting and public services in public spaces
<b>Q. Obstacles in city development</b>		<b>Q. What should the development of Ranong have to consider?</b>
Encouragement of the projects that can promote urban development is difficult due to structural constraints and public understanding. The Project that has already plan does not reflect the identity of Ranong.	The limitations of the government restrictions and cooperation are the obstacles in developing the city. Lack of understanding in development projects from the private and public sectors should also be compensated.	<ul style="list-style-type: none"> <li>- Role of Ranong in the tourism economy</li> <li>- Tourism Routes</li> <li>- Health Tourism</li> <li>- Waste and environmental management to support future development</li> </ul>

Source: JICA Project Team

### C) Results of Focus Group Meetings

The 18 persons from 14 institutions were divided into three (3) groups mentioned above, and then regrouped into the following two groups to perform focus group meetings:

- Group 1 (Stakeholder with high influence and high interest): ten (10) Tessaban officers including the mayor
- Group 2&3 (Stakeholder with high influence and low interest / low influence and high interest):
  - Representative of Ranong Chamber of Commerce and representative of Ranong Physically Handicapped Association
  - 6 community leaders from Rong Klong Community, Soi 9 community, Ranong Land Community, Bang San Phattana Community, Talad Gao Community, and Pho Ta Khing Community.

The presentation was made by the local consultant to roughly show the ideas of the development plan of the project site analyzed from the results of surveys. The development plan consists of pedestrian and crossway, transportation and songteaw stop, vendors, facility, and management. After the presentation, two (2) question items; important things for the future development and opinions on the development plan were discussed in the focus group meeting. The opinions from each group are summarized in Table 2.3.4.

**Table 2.3.4 Results of Focus Group Meetings**

<b>Group 1</b>	<b>Group 2</b>
<b>What is important for Ranong Future development?</b>	
<b>Identity</b> Ranong is a tropical city with heavy rain. A future project of the municipality has to consider the climate of Ranong. History of Ranong related to multiculturalism	<b>Identity</b> Slow-life city with friendly people, the history related to multiculturalism (Thai/Chinese-Peranakan/Myanmar), and emerging city

Group 1	Group 2
(Thai/Chinese Peranakan/Myanmar), green and resourceful city also should be highlighted.	(green and resourceful) are the identities of Ranong.
<p><b>Society and Economy</b></p> <p>The interviewee is concerned about COVID-19 because it probably changes people's lifestyles.</p>	<p><b>Society and Economy</b></p> <p>Collaboration with parties to stimulate a sustainable economy in terms of border trade and tourism, and strong community and neighborhood should be highlighted.</p> <p><b>Tourism</b></p> <p>New style of tourism not only in town (e.g., fish market tour like Tsukiji market in Japan), and special hotel supporting health tourism are necessary for the future development.</p>
<p><b>What is your opinion about our development plan and ideas to develop a master plan in the future?</b></p>	
<p><b>Pedestrian walkway and Crossway</b></p> <ul style="list-style-type: none"> <li>- Collaboration with projects to create seamless experiences to Raksawarin.</li> <li>- Expand pedestrians if possible.</li> <li>- Creating shade while walking by planting big trees along the road might affect electric poles and antennas. Need to discuss with related organizations.</li> <li>- Specific species of tree with small root systems which do not destroy the ground or buildings.</li> <li>- People can get more knowledge about the city while walking.</li> </ul>	<p><b>Pedestrian and Crossway</b></p> <ul style="list-style-type: none"> <li>- After 18.00 the road and pedestrian feel unsafe, no light or activity. It is necessary to collaborate with communities to create activities.</li> <li>- Creating shade while walking by planting big trees along the road might affect electric poles and antennas. Need to discuss with related organizations.</li> <li>- Plant Local applicable trees that can make money for local people after cutting.</li> <li>- Specific species of tree that suit the environment. (e.g., Hopea odorata (Ta-Khian) / Dipterocarpus alatus (yang na) /Swietenia mahagoni)</li> <li>- Concern about universal design and safety. (i.e. light/CCTV)</li> <li>- Well-designed zoning for crossway and emergency cars.</li> <li>- Visible crosswalk for all.</li> </ul>
<p><b>Transportation and Songteaw Stop</b></p> <ul style="list-style-type: none"> <li>- Design guideline for minibus stop in Sino Portuguese style.</li> <li>- Add more tourist information.</li> </ul>	<p><b>Transportation and Songteaw Stop</b></p> <ul style="list-style-type: none"> <li>- Provide travel routes to attractions.</li> <li>- Strict legislation to control minibus drivers to drive carefully and stop at minibus stop.</li> </ul>
<p><b>Vendors</b></p> <ul style="list-style-type: none"> <li>- Organize a cluster of vendors, not allowed to be on a pedestrian walkway.</li> </ul>	<p><b>Vendors</b></p> <ul style="list-style-type: none"> <li>- Redesign vendors to be more beautiful and functional</li> <li>- The seller should be people from the community.</li> </ul>
<p><b>Facility and Management</b></p> <ul style="list-style-type: none"> <li>- Well waste management including garbage points with cleanness.</li> <li>- Provide parking in spots, not allowed to park on the side of roads.</li> <li>- Provide a wire ground system for creating visual to the gateway.</li> </ul>	<p><b>Facility and Management</b></p> <ul style="list-style-type: none"> <li>- Well water and waste management.</li> <li>- Responsibility to look after the space.</li> <li>- Provide parking in spots, not allowed to park on the side of roads.</li> </ul>

<b>Group 1</b>	<b>Group 2</b>
- Improve hospitality standard and more efficiently accessible for emergency cars.	

Source: JICA Project Team

### 3) Conclusion

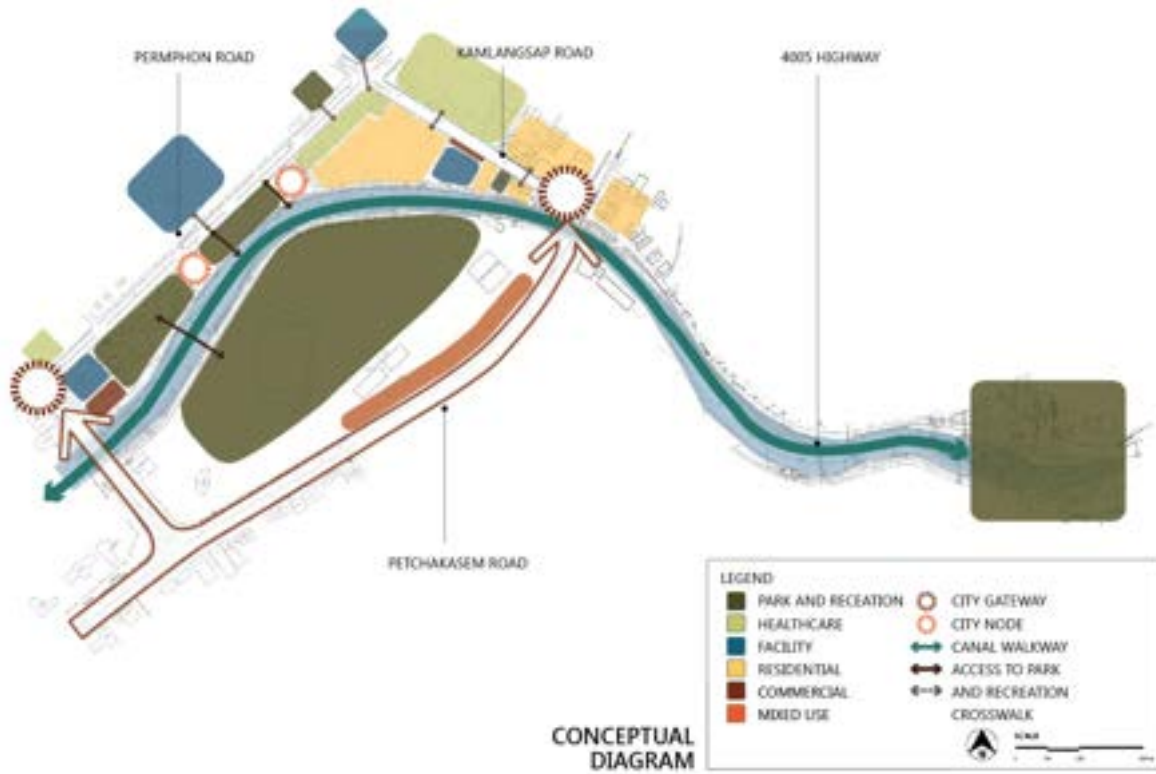
The in-depth interview and focus group meeting revealed that people and stakeholder groups in Tessaban Mueang Ranong know the importance of a walkable city. They consider not just the physical development for walkable city but also possibility to promote economic development and management of Tessaban Mueang Ranong by enhancing walkability. Viewpoints and uses for each area by different user groups are reflected to master plan development.

According to the site analysis and users' needs analysis, five (5) design elements for the site are developed; (1) Walkway connecting, (2) Public transport connecting, (3) Activities along the walkway, (4) Public Space, and (5) Landmark and Sense of place. The master plan is formulated with focuses on these elements. The contents of the master plan are summarized in the following sections.

#### 2.3.5 Master Plan on Health Park Renovation with Walkable City Network

As mentioned above, the master plan was formulated to connect all projects around the pilot project site. The focus of the pilot project is Kamlangsap Road, which connects to Raksawarin hot spring. The master plan was formulated under the concept of 'More connected - More active – More walkable' which focuses on street design in various areas of the city to provide a better sense of place, speed, and sensorial experience of various streets contexts. Linkage between places and recreation nodes creates good use of spaces and relationship of activities with more efficient pedestrian access for all.





Source: JICA Project Team

**Figure 2.3.24 Conceptual Diagram for the Pilot Project**



Source: JICA Project Team

**Figure 2.3.25 Master Plan on Health Park Renovation with Walkable City Network**

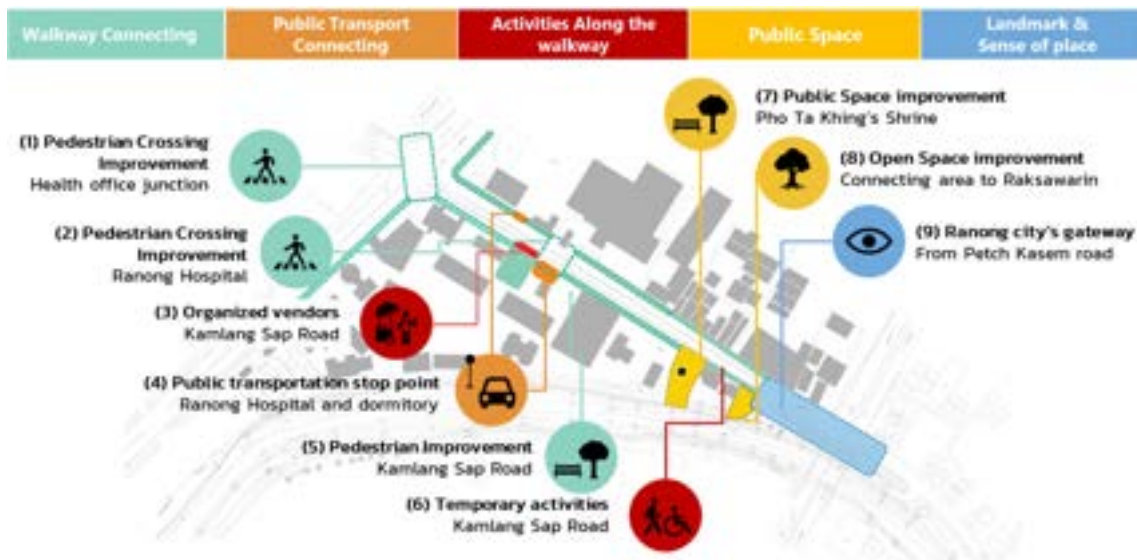
The master plan is divided into the following three (3) zones:

- Zone 1: Area in front of Ranong Hospital
- Zone 2: Pho Ta Khing's Shrine
- Zone 3: Area connecting to Raksawarin and Petch Kasem road

For these zones, there are nine (9) sub-projects (design areas) that were designed to be implemented on Kamlangsap Road;

- (1) Pedestrian crossing improvement at Health office junction
- (2) Pedestrian crossing improvement in front of Ranong Hospital
- (3) Organization of street vendors opposite Ranong Hospital
- (4) Public transportation stop point
- (5) Pedestrian walkway improvement along Kamlangsap Road
- (6) Temporary activities along Kamlangsap Road in front of Pho Ta Khing's Shrine
- (7) Public space improvement at Pho Ta Khing's Shrine
- (8) Improvement of open space connecting area to Raksawarin
- (9) Open view from Petch Kasem Road

These design areas were categorized into five (5) design elements that were developed based on the site analysis and users' needs analysis: (1) Walkway connecting, (2) Public transport connecting, (3) Activities along the walkway, (4) Public Space, and (5) Landmark and Sense of place, as shown in Figure 2.3.26.



Source: JICA Project Team

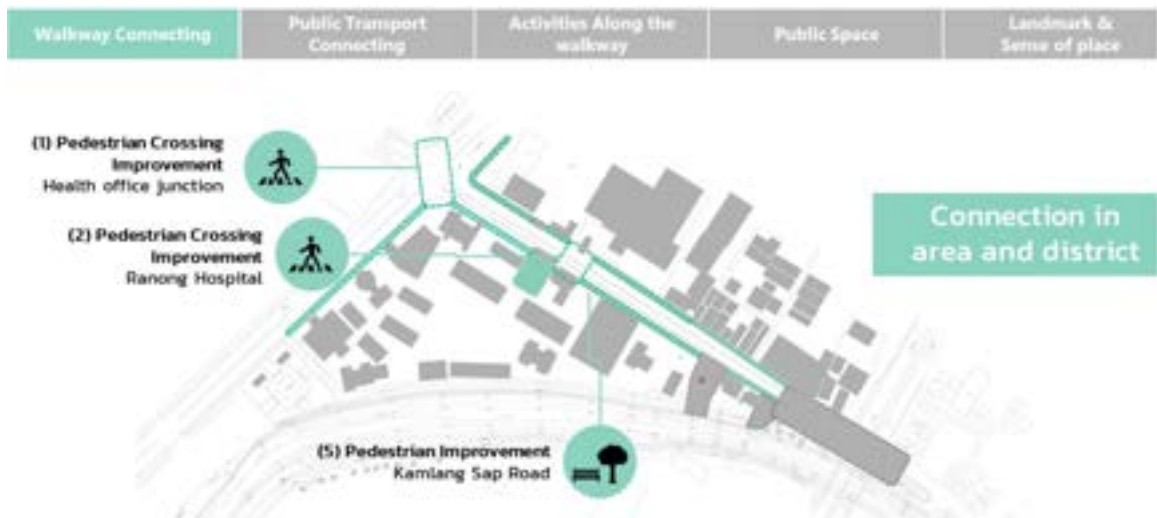
Figure 2.3.26 Design Elements of the Pilot Project

## 1) Design Elements

### ● Design element 1: Connecting Walkway

To connect between the city and the district, this design element covers three design areas: (1) Pedestrian crossing improvement at Health office junction, (2) Pedestrian crossing improvement in front of Ranong Hospital, and (5) Pedestrian walkway improvement along

Kamlangsap Road.



Source: JICA Project Team

**Figure 2.3.27 Design Element 1: Connecting Walkway**

### **Pedestrian crossing improvement at Health office junction (1)**

Health office junction is a large junction in the city and is also used by local people and visitors most of the time in daytime. Development of this area has the following components for crossway improvement.

- Emphasize the city's intersection by letting local artists paint the crosswalk with colors or patterns that represent Ranong.
- Create ramps to connect sidewalks and crossings.
- Create traffic calming to warn before crossing.
- Create a signage showing city route information.



Source: JICA Project Team

**Figure 2.3.28 Perspective of Health Office Junction (1)**

### **Pedestrian crossing improvement in front of Ranong Hospital (2)**

The crossway in front of Ranong hospital is used by local people especially from patients throughout the province all time during daytime. This area is also one of the biggest workplaces in the city. Development of this area has the following components for crossway improvement.

- Make the crossing clearly visible by painting.
- Use technology to management i.e. Traffic Calming.
- Install street lighting.
- Build ramps to connect sidewalks and crossings for everyone.



Source: JICA Project Team

**Figure 2.3.29 Perspective of Ranong Hospital Crossway in the Daytime (2)**



Source: JICA Project Team

**Figure 2.3.30 Perspective of Ranong Hospital Crossway at Nighttime (2)**

### **Pedestrian walkway improvement along Kamlangsap Road (5)**

Kamlangsap Road is one of the bustling roads in the city. The pedestrian walkway along Kamlangsap Road is used by local people. Some parts of the road are somewhat narrow and invaded by vendors and motorcycles. There are the following components for pedestrian improvement.



- Extend the sidewalk.
- Parking for motorcycles and bicycles at certain parts of the road.
- Install lighting on the sidewalk for safety.
- Install pavement device where people can interact with.
- Add a tree line to provide shade while walking.

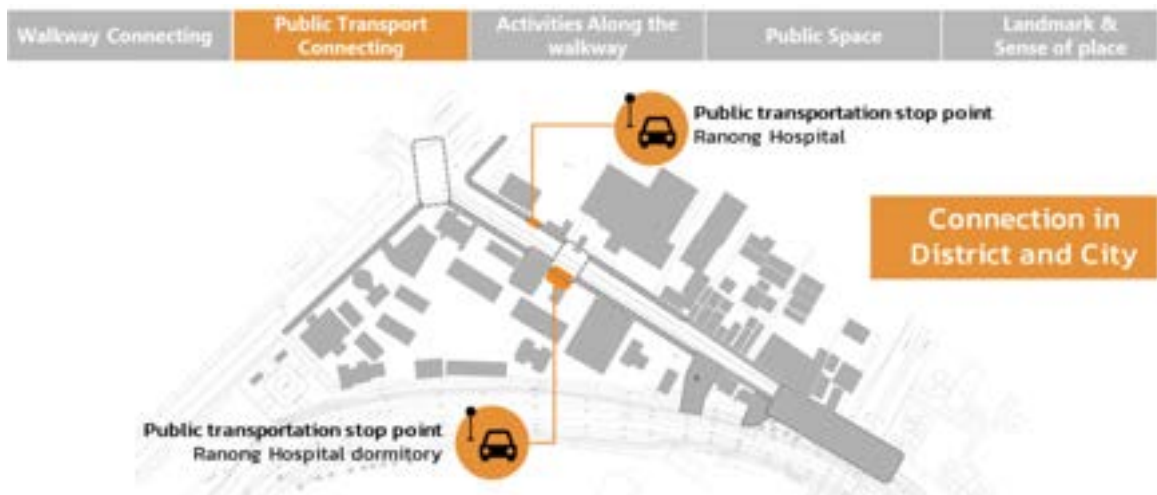


Source: JICA Project Team

**Figure 2.3.31 Perspective of Pedestrian Walkway along Kamlangsap Road (5)**

● **Design element 2: Public Transportation Connection**

To connect between the district and the city, this design element covers one design area;  
(4) Public transportation stop point.



Source: JICA Project Team

**Figure 2.3.32 Design Element 2: Public Transportation Connection**

**Public Transportation Stop Point (4)**

There are two (2) main bus stops on Kamlangsap road. Both are in between Ranong hospital and Ranong hospital dormitory areas. These bus stops are used by local people

especially medical staff and patients all time during daytime. This design area has the following components for public transportation stop point improvement.

- Provide shelter and seat for waiting or resting.
- Organize waiting area by separating zones.
- Install a solar panel at bus stop.
- Install signage showing route information.
- Install wheelchair parking space available for challenged people.

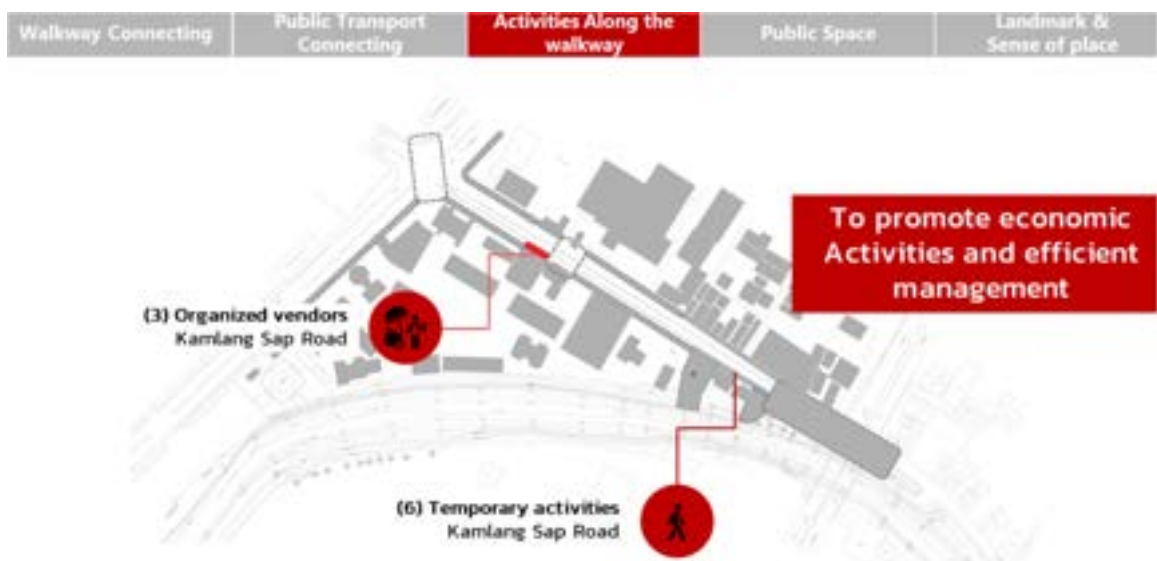


Source: JICA Project Team

**Figure 2.3.33 Perspective of a Public Transportation Stop Point (4)**

● **Design element 3: Activities along the Walkway**

To promote economy, activities and efficient management, this design element covers two design areas: (3) Organization of street vendors opposite Ranong Hospital and (6) Temporary activities along Kamlangsap Road in front of Pho Ta Khing's Shrine.



Source: JICA Project Team

**Figure 2.3.34 Design Element 3: Activities along the Walkway**

### **Organization of street vendors opposite Ranong Hospital (3)**

Street vendors are not welcome on the pedestrian walkway. Yet, they are undeniably one of the factors that drive economy in the city. These street vendors are used by local people especially by the medical staff and visitors throughout the day and early at night. This design area has the following components for organizing street vendors.

- Organize vendors by separating zones to make the pedestrian more walkable and cleaner.
- Provide area and waste management space for vendors in front of hospital dormitory.



Source: JICA Project Team

**Figure 2.3.35 Perspective of Street Vendors opposite Ranong Hospital (3)**

### **Temporary activities along Kamlangsap Road in front of Pho Ta Khing's Shrine (6)**

This area is a part of Pho Ta Khing's Shrine which is a public space for the community. The pedestrian walkway connects to the way to Raksawarin hot spring. At present, the pedestrian walkway of this area is rather solitary most of the time. This design area has the following components for pedestrian improvement by creating more activities.

- Encourage temporary activities to promote urban interaction and promote physical activity during festivals or other events in the surrounding area.
- Install pavement device where people can interact with.
- Install lighting.





Source: JICA Project Team

**Figure 2.3.36 Perspective of Pedestrian Walkway along Kamlangsap Road in front of Pho Ta Khing's Shrine at Daytime (6)**

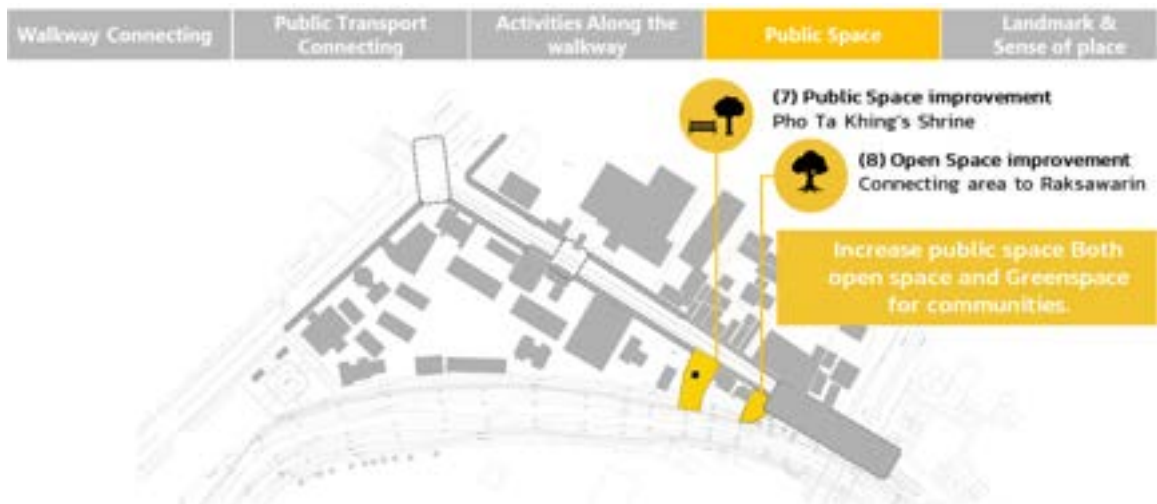


Source: JICA Project Team

**Figure 2.3.37 Perspective of Pedestrian Walkway along Kamlangsap Road in front of Pho Ta Khing's Shrine at Nighttime (6)**

- **Design element 4: Public Space**

To increase public space both open space and green space for communities, this design element covers two design area: (7) Public space improvement at Pho Ta Khing's Shrine and (8) Improvement of open space connecting area to Raksawarin.



Source: JICA Project Team

**Figure 2.3.38 Design Element 4: Public Space**

**Public space improvement at Pho Ta Khing’s Shrine (7)**

Pho Ta Khing’s Shrine is a node of Pho Ta Khing community where local people come for meetings and doing activities. The shrine can connect from the pedestrian walkway to the canal walkway, yet still lacks design and safety at nighttime. This design area has the following components for space improvement.

- Partially open a fence line to link activities between the pedestrian walkways.
- Add trees along the road or within the fence add shade for pedestrians.
- Design to connect from the sidewalk to the canal walkway as well as physical activity and appearance.
- Improve the area to have an open courtyard to accommodate flexible community activities.



Source: JICA Project Team

**Figure 2.3.39 Perspective of Pho Ta Khing’s Shrine at Daytime (7)**



Source: JICA Project Team

**Figure 2.3.40 Perspective of Pho Ta Khing's Shrine at Nighttime (7)**

### **Improvement of open space connecting area to Raksawarin (8)**

This open space is abandoned space next to Pho Ta Khing's Shrine. The area can connect from the pedestrian walkway to the canal walkway, and also link to underpass walkway connecting to Raksawarin hot spring. This design area has the following components for space improvement.

- Create a visual point from the pathway that comes from Raksawarin hot spring.
- Seamlessly adapt to the waterfront corridor.
- To be the area for community focusing on active activities.
- Add elements to create pedestrian friendly.
- Add elements that represent a healthy city, i.e., grow trees and add shade.



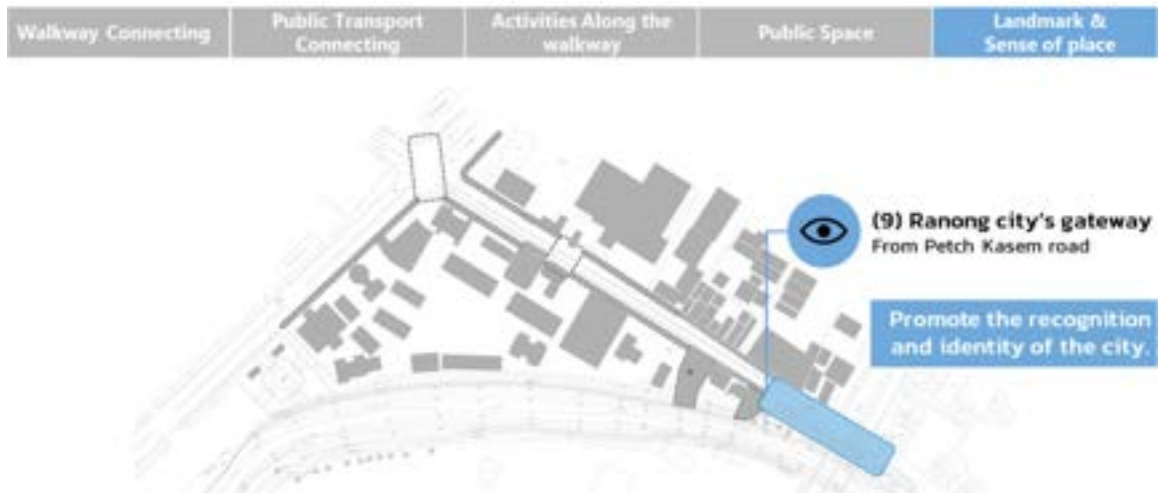
Source: JICA Project Team

**Figure 2.3.41 Perspective of Open Space connecting to Raksawarin (8)**

### ● **Design element 5: Landmark and Sense of Place**

To promote the recognition and identity of the city, this design element covers one design

area, i.e., (9) Open view from Petch Kasem Road.



Source: JICA Project Team

**Figure 2.3.42 Design Element 5: Landmark and Sense of Place**

### **Open view from Petchkasem Road (9)**

Petchkasem Road is used as the main route to reach the city. To develop as a city's gateway, this design area has the following components for viewpoint improvement.

- Plant local trees along the main road as a guide to the gateway.
- Install an efficient visible signage.
- Add temporary street elements or furniture which shows Ranong's identities during events.



Source: JICA Project Team

**Figure 2.3.43 Perspective of Open View from Petchkasem Road (9)**

## **2) Roadmap**

The nine (9) design areas were elaborated in terms of project duration, budget estimates, and relevant organizations (see Table 2.3.5). They were also divided into the following three phases:

- (1) **Short-term projects (flagship projects)** refer to the projects that require

immediate actions for supporting urban development of the city and can be completed within 6 month and supported by JICA's budget. The project will be implemented as a flagship project and Tessaban can continue the project by requesting the budget and collaborating with relevant organizations.

- (2) **Mid-term projects** refer to the projects continuing from the short-term project which are considered in need of development and design of urban public spaces and walkable city. These are the projects that can be completed within 1.5 year.
- (3) **Long-term projects** refer to the projects that improve the quality of life and promote the development of public spaces in the long term. These projects can be completed within 3 years to comprehensively fulfill the master plan.



**Table 2.3.5 Roadmap of the Master Plan on Health Park Renovation with Walkable City Network**

Short-term Projects (JICA PILOT PROJECT)				
Detailed Design and Construction				
Project (area)	Component	Remark	Organization	Budget (THB)
<b>(2) Pedestrian crossing improvement in front of Ranong Hospital</b>	<ul style="list-style-type: none"> <li>- Design and paint the crossroad under a collaboration with local artists.</li> </ul>	<p>The local artists to design the crossroad is being found.</p> <p>There are two options to do a painting.</p> <p>1) The local artist will design and paint by themselves.</p> <p>2) The local artist will design only and let the contractor to paint.</p> <p>All options will be managed by Forum.</p>	Tessaban Mueang Ranong	300,000
<b>(3) Organization of street vendors opposite Ranong Hospital</b>	<ul style="list-style-type: none"> <li>- Design and paint the road as a block to organize the space for street vendors.</li> </ul>	<p>To organize the street vendor, the waste management; a bin, will be designed and located in this area. (See detail below)</p>	Tessaban Mueang Ranong	50,000
<b>(4) Public transportation stop point</b>	<ul style="list-style-type: none"> <li>- Design and paint the bus stop by painting the drop off area with graffiti.</li> <li>- Design and renovate the shelter of bus stop.</li> <li>- Traffic Light and Lighting Installation</li> <li>- Providing the route information and bus stop signage.</li> </ul>	<p>In short-term project, the signage of route will be only provided at the bus stop.</p>	Tessaban Mueang Ranong	100,000
<b>(5) Pedestrian walkway improvement along Kamlangsap Road</b>	<ul style="list-style-type: none"> <li>- Painting a block for parking</li> </ul>	<p>As the space is limited, the parking area will be considered again.</p> <p>The parking space is now considered only in the opposite the hospital.</p> <p>The space in front of hospital will be considered again.</p> <p>Possibly, area in front of Pho Ta Khing Shire can be painted.</p>	<ul style="list-style-type: none"> <li>- Tessaban Mueang Ranong</li> <li>- Ranong Hospital</li> </ul>	45,000
<b>(6) Temporary activities along Kamlangsap Road in front of Pho Ta Khing's Shrine</b>	<ul style="list-style-type: none"> <li>- Painting the street for supporting the temporary activities</li> </ul>	<p>The design will depend on the context of space.</p>	<ul style="list-style-type: none"> <li>- Tessaban Mueang Ranong</li> <li>- Provincial Tourism and Sports Office</li> </ul>	40,000

				- Provincial Business Development Office	
<b>(7) Public space improvement at Pho Ta Khing's Shrine</b>	<ul style="list-style-type: none"> <li>- Landscape design</li> <li>- Improving the hardscape</li> <li>- Planting new grasses</li> <li>- Adding some furniture depending on the context of areas to promote activities in the space.</li> </ul>	No demolition of existing pavement	Tessaban Mueang Ranong	880,000	
<b>Detailed Design for Project (2) (3) (4) (5) (6) (7)</b>					
<b>Total of Detailed Design and Construction</b>					
<b>Waste Management</b>	<ul style="list-style-type: none"> <li>- Purchasing and designing separated bins.</li> <li>- Designing a bin signage</li> </ul>	The waste management will cover all master plan sites. The bin will be suitably located along the street of the site of master plan; especially at street vendor area and Pho Ta Khing Area.	Tessaban Mueang Ranong	17,000	
<b>Detailed Design</b>					
<b>(8) Improvement of Street Pavement at Kamlangsap Road</b>	<ul style="list-style-type: none"> <li>- Providing Detail Design for improving the pavement on Kamlangsap Road.</li> </ul>	<ul style="list-style-type: none"> <li>- Covering areas (3) (4) (5) (6) (9)</li> <li>- Universal Design and Shading will be considered in the Detail Design.</li> </ul>	<ul style="list-style-type: none"> <li>- Tessaban Mueang Ranong</li> <li>- Ranong Hospital</li> <li>- Provincial Tourism and Sports Office</li> <li>- Provincial Business Development Office</li> </ul>	500,000	
<b>Design the signage for information and bus route</b>	In project area of (4) and (9), the signage will be designed for providing information and route of public transport	Preparation for mid-term project	Tessaban Mueang Ranong	50,000	
<b>(8) Improvement of open space connecting area to Raksawarin</b>	- Detail Design for Open Space at area (8) connecting to Hot spring	Preparation for mid-term project	<ul style="list-style-type: none"> <li>- Tessaban Mueang Ranong</li> <li>- DPT</li> </ul>	40,000	
<b>(9) Open view From Petch Kasem road</b>	- Detail Design for the gateway improvement with the new pavement and landscape (including trees)	Preparation for mid-term project	<ul style="list-style-type: none"> <li>- Tessaban Mueang Ranong</li> </ul>	50,000	



**Final Report, Vol. 2: Model City Projects**

				- Provincial Cultural Office - Community	2,122,000
<b>Mid-term Projects (EXPECTED FURTHER ACTION)</b>					
Project (area)	Component	Remark	Organization	Budget (THB)	
<b>(0) Improvement of Street Pavement at Kamlangsap Road</b>	Construction of street pavement at Kamlangsap Road by using Detail Design prepared in short-term project.	The Detail Design prepared in short-term project will be used to do a construction.	- Tessaban Mueang Ranong - Ranong Hospital - Provincial Tourism and Sports Office - Provincial Business Development Office	5,000,000	
<b>Installation of signage for information and bus route</b>	Install the signage prepared in short-term project	The signage which is designed in short-term project will be installed.	Tessaban Mueang Ranong	100,000	
<b>(9) Open view From Petch Kasem road</b>	Gateway Renovation by using Detail Design prepared in short-term project	The Detail Design in Phase 1 will be used to renovate the gateway.	- Tessaban Mueang Ranong - Provincial Cultural Office - Community	600,000	
<b>Public Space Management</b>	Collaboration with relevant stakeholders to maintain the project. The operation and management community can be set up to take care of the constructions in the master plan.		Tessaban Mueang Ranong	N/A	
					5,700,000
<b>Long-term Projects (EXPECTED TO COMPLETE THE PROJECT IN MASTER PLAN)</b>					
Project (area)	Component	Remark	Organization	Budget (THB)	
<b>(1) Pedestrian crossing improvement at</b>	Design and paint the crossroad		Tessaban Mueang Ranong	1,500,000 (DD=150,000 (CON=1,350,000 )	

<b>Health office junction</b>				
<b>(8) Improvement of open space connecting area to Raksawarin</b>	Construction of Open Space at area (8) connecting to Hot Spring by using Detail Design prepared in short-term project.	The Detail Design prepared in short-term project will be used to do a construction.	- Tessaban Mueang Ranong - DPT	200,000
<b>(9) Open view From Petch Kasem road</b>	- Purchasing and installing lighting and interactive arts.	To facilitate the arrangement of local festivals and events by providing the decoration related to Ranong identity.	- Tessaban Mueang Ranong - Provincial Cultural Office - Community	5,000,000
<b>Total Budget for Long-term Projects</b>				<b>5,700,000</b>
<b>Total Budget of the Master Plan</b>				<b>14,522,000</b>

Source: JICA Project Team

### **2.3.6 Selection of Implementation Elements of JICA's Pilot Project (Phase 2)**

Focusing on connectivity and integration with surrounding areas, as well as promotion of use, the pilot project site, which is surrounded by Kamlangsap Road, Permphon Road, and Hat Som Paen Canal was selected, and nine (9) areas were designed as described in the previous section. The core of the programmatic design of each area is to emphasize the city's main crosswalk by painting colors or patterns on the crosswalk with traffic calming for safety and organizing zones for parking and vendors as well as to encourage temporary activities to promote urban interactions and promote physical activities during festivals or other events in the surrounding area. The following criteria was set to select the implementation elements of JICA's pilot project (Phase 2):

- The selected projects will be of benefit to the local communities.
- The selected projects can be replicated in other areas and concrete.
- Timeline of the selected projects including construction fit with the project's period.
- The costs lie within the budget of JICA.
- The selected projects will give opportunities for Tassaban to gain the potential budget support or further investments from relevant organizations.

The master plan on Health Park Renovation with Walkable City Network and the proposed projects were presented to the PPT to get a consensus on the elements to be implemented as JICA's pilot projects. As a result, in the third PPT meeting (PPT3), it was agreed that the pilot project works on the proposed short-term projects, which were categorized into three zones and assigned different levels of implementation, as follows:

#### **(1) Projects for Detailed Design and Construction**

- Zone 1: Area in front of Ranong Hospital includes 4 design areas which are (2) Pedestrian crossing improvement in front of Ranong Hospital, (3) Organization of vendors opposite Ranong Hospital, (4) Public transportation stop point, Ranong Hospital and Dormitory, and (5) (5) Pedestrian walkway improvement along Kamlangsap Road
- Zone 2: Pho Ta Khing's Shrine includes 2 design areas which are (6) Temporary activities along Kamlangsap Road in front of Pho Ta Khing's Shrine, and (7) Public space improvement at Pho Ta Khing's Shrine

#### **(2) Projects for Detailed Design only**

- Zone 3: Area connecting to Raksawarin and Petch Kasem road includes 2 design areas which are (8) Improvement of open space connecting area to Raksawarin and (9) Open view from Petch Kasem road
- Kamlangsap road Improvement and information signages which is the road that cover all the area of Zone 1, Zone 2 and Zone 3.



Source: JICA Project Team

**Figure 2.3.44 Location of Projects for Detailed Design and/or Construction**

Level of implementation of each zone is summarized in Table 2.3.6.

**Table 2.3.6 List of Pilot Projects (Phase 2)**

Project List	Detailed Design and Construction	Detailed Design only
<b>Zone 1: Area in front of Ranong Hospital</b>		
(2) Pedestrian crossing improvement in front of Ranong Hospital		
(3) Organization of street vendors opposite Ranong Hospital		
(4) Public transportation stop point		
(5) Pedestrian walkway improvement along Kamlangsap Road		
<b>Zone 2: Pho Ta Khing's Shrine</b>		
(6) Temporary activities along Kamlangsap Road in front of Pho Ta Khing's Shrine		
(7) Public space improvement at Pho Ta Khing's Shrine		
<b>Zone 3: Area connecting to Raksawarin and Petch Kasem road</b>		
(8) Improvement of open space connecting area to Raksawarin		
(9) Open view from Petch Kasem road		
<b>Kamlangsap Road Improvement and Information Signage</b>		

Source: JICA Project Team

From the next section, the details and outputs of the improvement of Zone 1-3 and Kamlangsap Road are elaborated and described.

### 2.3.7 Projects for Detailed Design and Construction

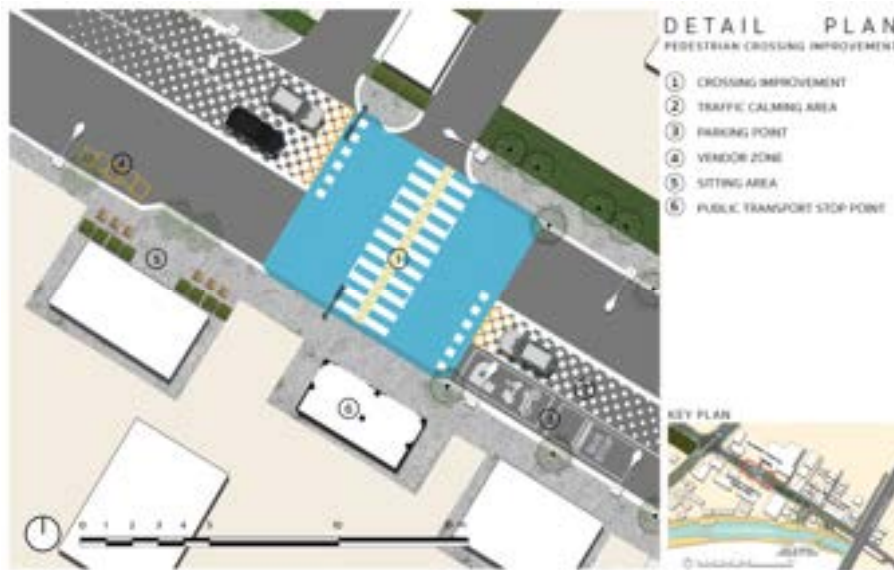
#### 1) Improvement of Zone 1: Area in front of Ranong Hospital

##### a) Outline

This zone is the area in front of Ranong Hospital and is mostly used by local people especially from patients and medical personnel throughout the province all day. This zone is also one of the biggest workplaces in the city. However, although it's one of the city centers yet there is still lack of safety in crossing, walking and connection between activities. Therefore, the design and construction focused on safety with more efficient crossing and pedestrian access for all and relationship of activities.

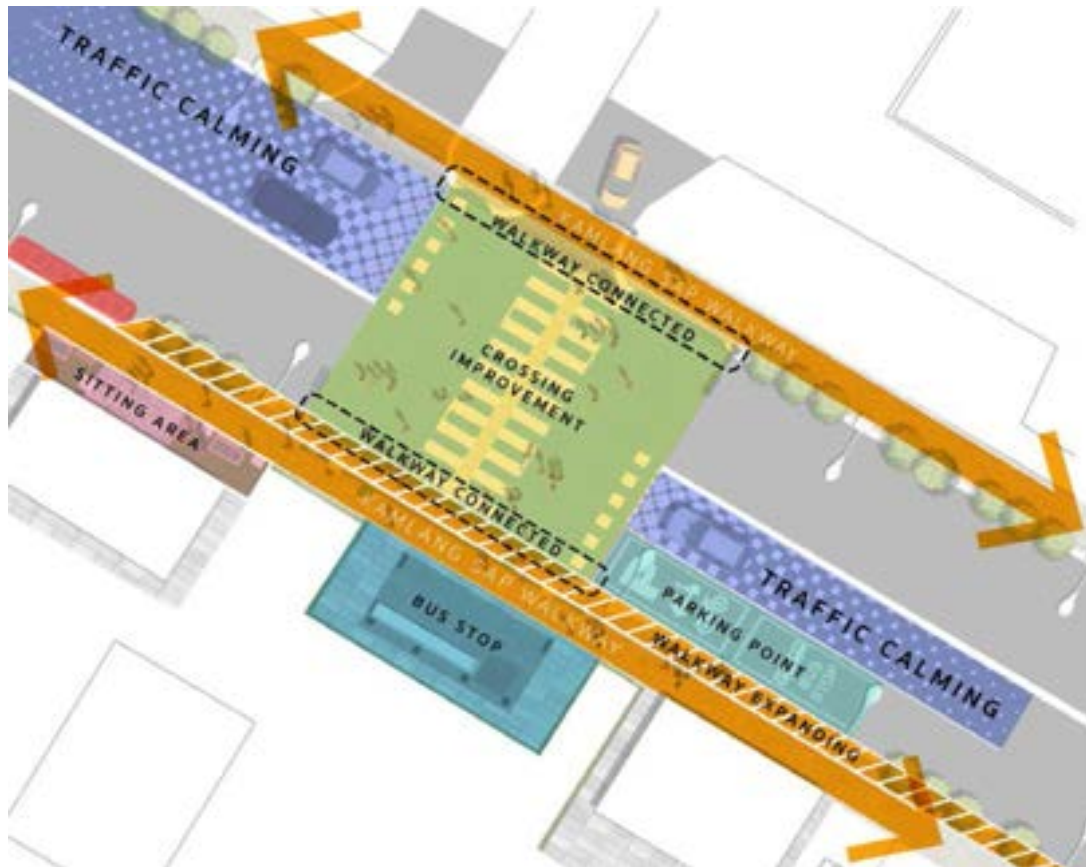
##### b) Detailed Design

Figure 2.3.45 shows the detailed plan of the improvement of Zone 1, which covers four (4) design areas: (2) Pedestrian Crossing Improvement, Ranong Hospital, (3) Organized vendors, Kamlangsap Road, (4) Public transportation stop point, Ranong Hospital and Dormitory, and (5) Pedestrian Improvement (Temporary parking). Detailed design for Zone 1 was prepared based on the concept shown in Figure 2.3.46, focusing on safety with more efficient crossing and pedestrian access for all as well as relationship of activities.



Source: JICA Project Team

**Figure 2.3.45 Detailed Plan for Area in front of Ranong Hospital**



Source: JICA Project Team

**Figure 2.3.46 Programmatic Design of Area in front of Ranong Hospital**

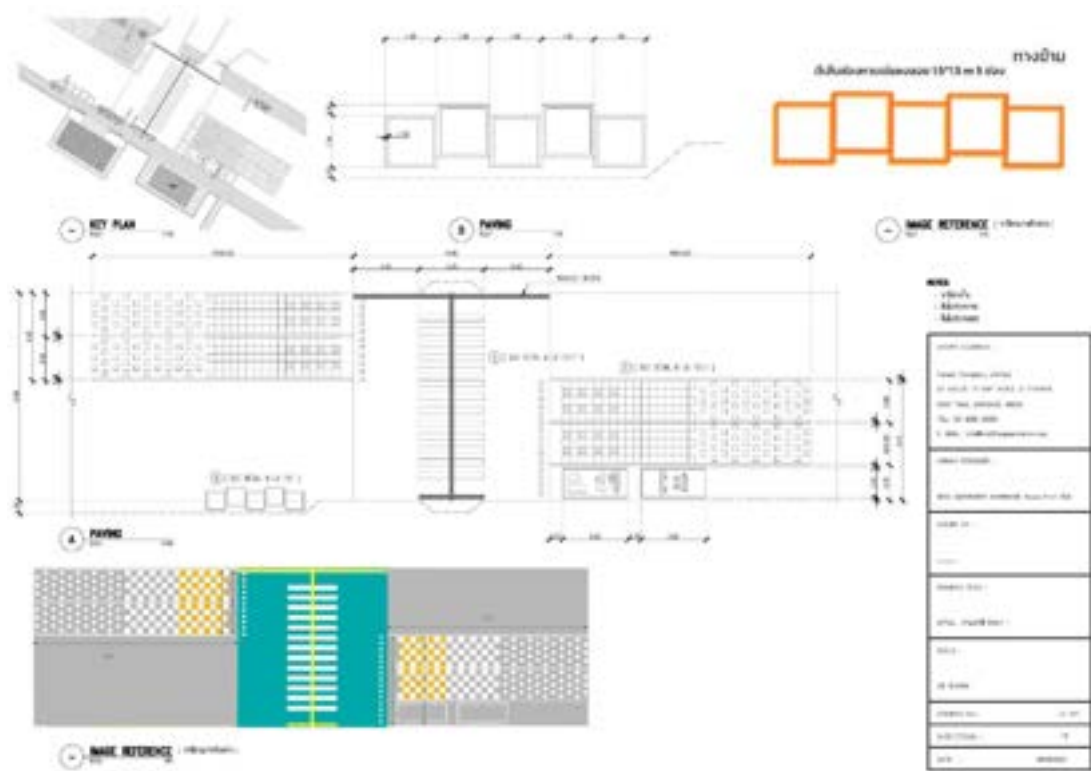
Pedestrian crossing was designed to be expanded and be seen clearly by painting. The painting will provide safety for pedestrians to safely cross the road because it will calm the traffic on the road and warn drivers to be more careful and reduce their speeds when entering the area. At the bus stop area, the bus station is provided for passenger pick-up and drop-off area. The paint signs for bus stop and temporary parking were prepared in the detail design. In addition, the temporary parking. There is also painting prepared for organizing street vendors by painting vender zone to make its organized and to keep those vendors out of the sidewalk. In term of the atmosphere of the area, the vertical gardens on Ranong hospital dormitory fences were designed along with the street furniture which are movable wooden pallet seat to support activities such as resting or eating in the area. People can also use those seats as a meeting point or eating the food bought from the street vendors. The physical improvements for this zone are summarized as below.

### **Road marking and painting**

The following road marking and painting are provided to promote safety, comfort, and convenience in this area.

- Road marking and painting for crosswalk and both lanes (traffic calming) to be seen clearly at day and night for more safety.
- Road marking and painting for parking zone for visitors to park their vehicle temporary: five (5) boxes (1.5\*1.5 meters)

- Road marking and painting for bus zone for buses to stop for picking up and dropping off passengers safely and effectively.
- Road marking and painting for vendor zone to organize and keep the vendor off sidewalk.



Source: JICA Project Team

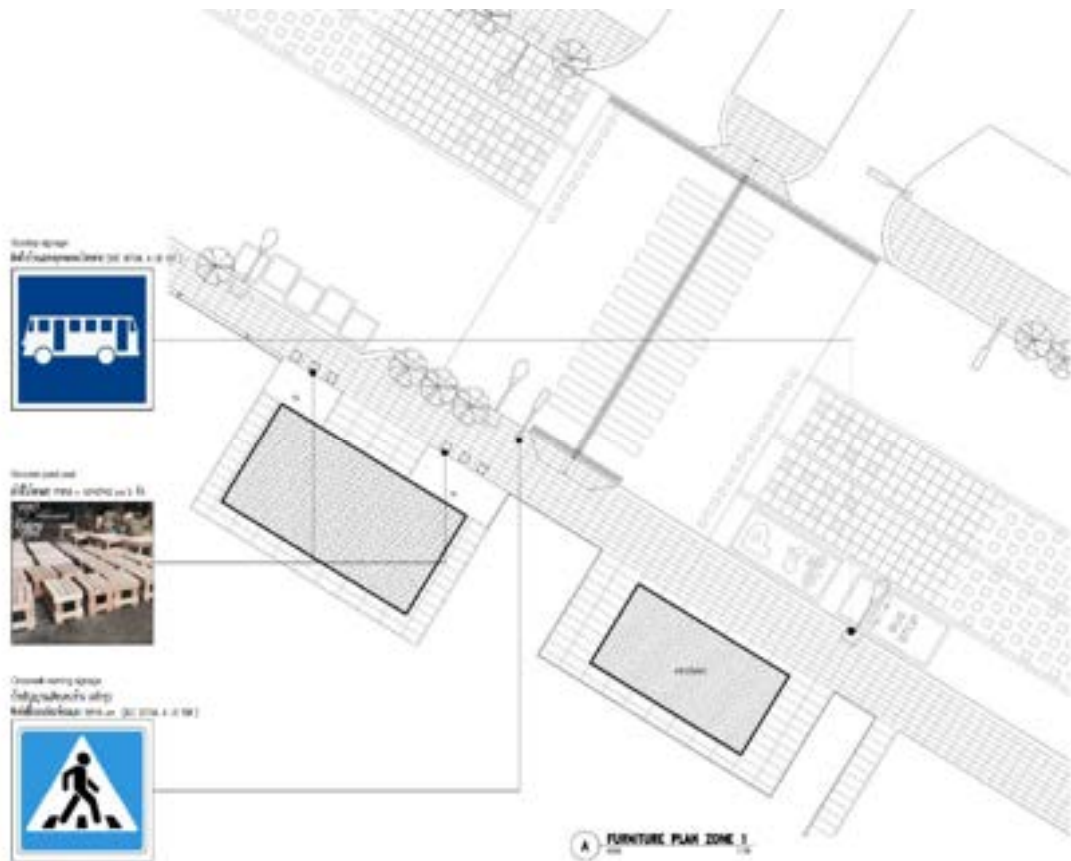
**Figure 2.3.47 Painting Plan for Zone 1: Area in front of Ranong Hospital**

### Installation of signage and furniture

The following signage and furniture are installed at the locations shown in Figure 2.3.48.

- Install 1 set of crosswalk warning signage made of galvanized sheet with reflective sticker on the light pole before the crosswalk, for warning drivers to be more careful.
- Install 1 set of bus stop signage made of galvanized sheet with reflective sticker on the light pole before bus stop area to make it more visible.
- Install 6 sets of wooden pallet temporary seats for people to sit while walking and as a meeting point and gathering area by interacting with vendors.





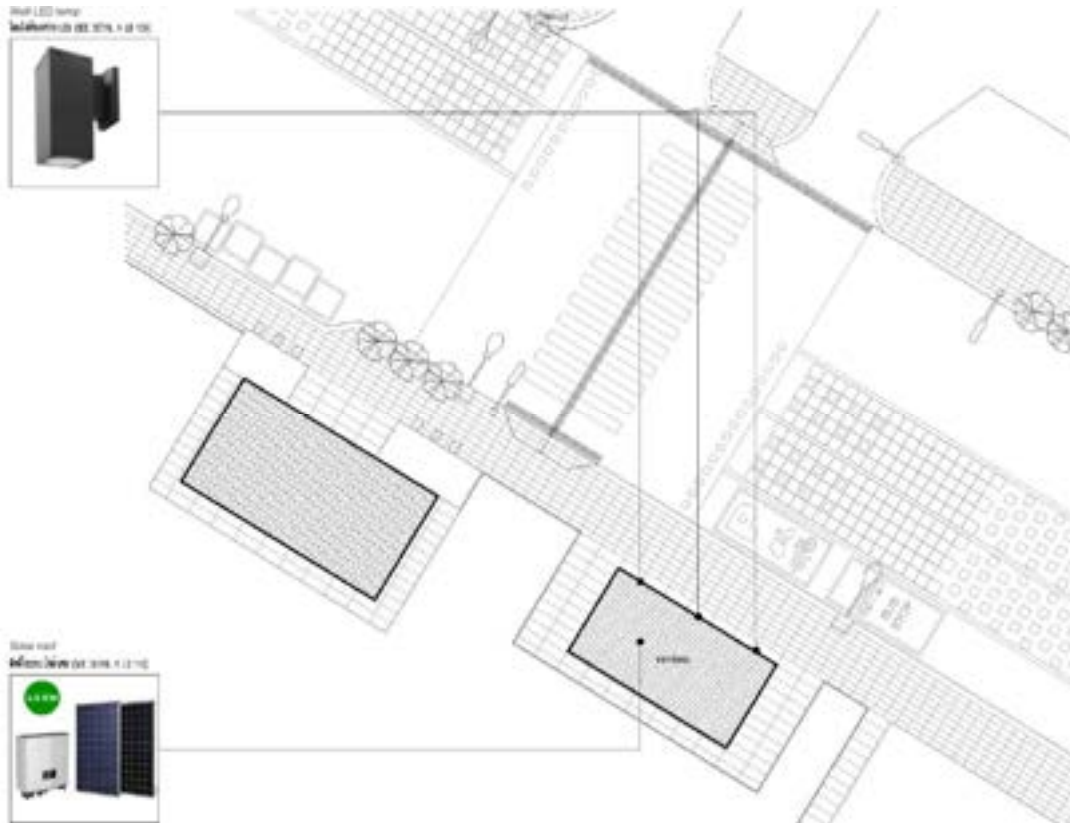
Source: JICA Project Team

**Figure 2.3.48 Signage and Furniture Plan for Zone 1: Area in front of Ranong Hospital**

### **Installation of electrical system**

The following lighting system was installed at the locations shown in Figure 2.3.49.

- Install 1 set of solar roof system on bus stop area's rooftop for saving more energy.
- Install 3 sets of wall cool white LED lamps on bus stop's column for more safety at night. Use renewable energy from solar roof system.



Source: JICA Project Team

**Figure 2.3.49 Electrical System Plan for Zone 1: Area in front of Ranong Hospital**

### **Improvement of landscape**

The following plants were placed along the hospital dormitory's fence for a better walking environment.

- Ornamental plants
- 10 sets of Rangoon creepers with pot
- 10 sets of Cats claw creepers with pot
- 10 sets of Javanese treebine with pot



Source: JICA Project Team

**Figure 2.3.50 Landscape Plan for Zone 1: Area in front of Ranong Hospital**

**c) Construction**

Before starting construction, both for Zone 1 and Zone 2, BOQ and the safety plan which meets JICA’s criteria were prepared. Also, a MOU for the Detailed Design and Construction of Kamlangsap Road Area under the Health Park Renovation with Walkable City Network Project was signed on 25 February 2021 to ensure the role sharing between JICA and Tessaban Mueang Ranong. Key contents under this MOU are summarized as follows:

- JICA Project Team is responsible for overall implementation of Detailed Design and Construction of Kamlangsap Road area including areas in front of Ranong hospital and Pho Ta-Khing Shrine area based on the consensus from Tessaban Mueang Ranong.
- Tessaban Mueang Ranong supports the Detailed Design and Construction of Kamlangsap Road areas, including prior field inspection, construction supervision and inspection after the completion of the construction. Tessaban is also responsible for operation and management of the Kamlangsap Road and Pho Ta Khing Shrine after the completion of the construction.





Source: JICA Project Team





**Figure 2.3.51 MOU Signing between JICA Project Team and Tessaban Mueang**



The design and construction of Zone 1 focuses on safety with more efficient crossing and pedestrian access for all and relationship of activities. Based on the detailed design described above, construction was started on 1 March 2021. The construction had been inspected and reported every two weeks by designated safety managers to confirm biweekly progress of the construction activities and safety risks associated with them, and share risks, issues or problems of the construction activities. Details of the construction is summarized in the table below.


**Table 2.3.7 Construction of Zone 1**

Task	Construction Detail	Photo of the Construction
<b>(2) Pedestrian crossing improvement in front of Ranong Hospital</b>		
Painting	Thermoplastic color was painted for crossing and lanes for clearly visible crossing and traffic calming	
Signage	Braille blocks were installed on crossing and galvanized sheet with reflective sticker for crosswalk warning signage for more safety	



Task	Construction Detail	Photo of the Construction
<b>(3) Organization of street vendors opposite Ranong Hospital</b>		
Painting	Thermoplastic color was painted for vendor zone to separate the zone and pedestrian	
Furniture	Wooden pallet temporary seats were installed for people to sit while waiting for food or eating.	
<b>(4) Public transportation stop point</b>		
Painting	Thermoplastic color was painted for bus zone to separate the zone and pedestrian walkway.	
Electrical system	Ultra-premium color was painted for shelter and roof shield for sitting and resting effectively	

Task	Construction Detail	Photo of the Construction
	LED wall lamps were installed for more safety at night	
	Solar panels were installed on the roof for generating electricity for lighting at the shelter.	
Signage	Galvanized sheet with reflective sticker for bus stop signage was installed for the representing stop point.	
Landscape	Ornamental plants were hung on the hospital dormitory's fence for better walking environment.	
<b>(5) Pedestrian walkway improvement along Kamlangsap Road</b>		

Task	Construction Detail	Photo of the Construction
This zone is related to the public transportation stop point. Dividing the parking area into zone to prevent vehicles from encroaching on pedestrian walkway and crosswalk	Thermoplastic color was painted for separating the parking zone and pedestrian walkway.	

Source: JICA Project Team

After the construction was completed on 9 May 2021, an online and joint final inspection was held on 20 May 2021 by the JICA Project Team, the Tessaban, community, and contractor to check the construction work. The project was declared completed according to the detailed design and durable to use. Figure 2.3.52 to Figure 2.3.55 show Zone 1: Area in front of Ranong Hospital before and after improvement.



Source: JICA Project Team

**Figure 2.3.52 Zone 1 Before and After Improvement - 1**



Source: JICA Project Team

**Figure 2.3.53 Zone 1 Before and After Improvement - 2**





Source: JICA Project Team

**Figure 2.3.54 Zone 1 Before and After Improvement - 3**



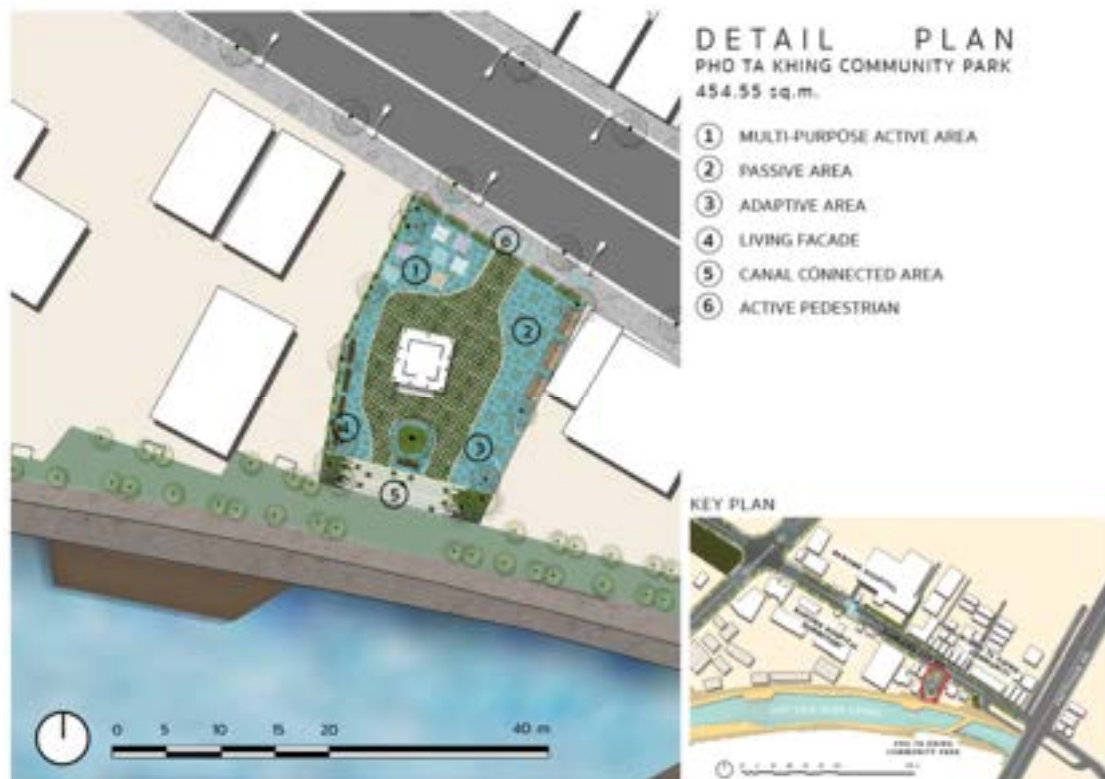
Source: JICA Project Team

**Figure 2.3.55 Zone 1 Before and After Improvement - 4**

## 2) Improvement of Zone 2: Pho Ta Khing's Shrine

### a) Outline

This zone is a node of Pho Ta Khing community, where local people come for meeting and doing activities. Moreover, it can be connected from the pedestrian walkway to the canal walkway. The core of programmatic is to encourage temporary activities to promote urban interaction and promote physical activity during festivals or other events in the surrounding area. Figure 2.3.56 shows the detailed plan of tee improvement of Pho Ta Khing's Shrine area.

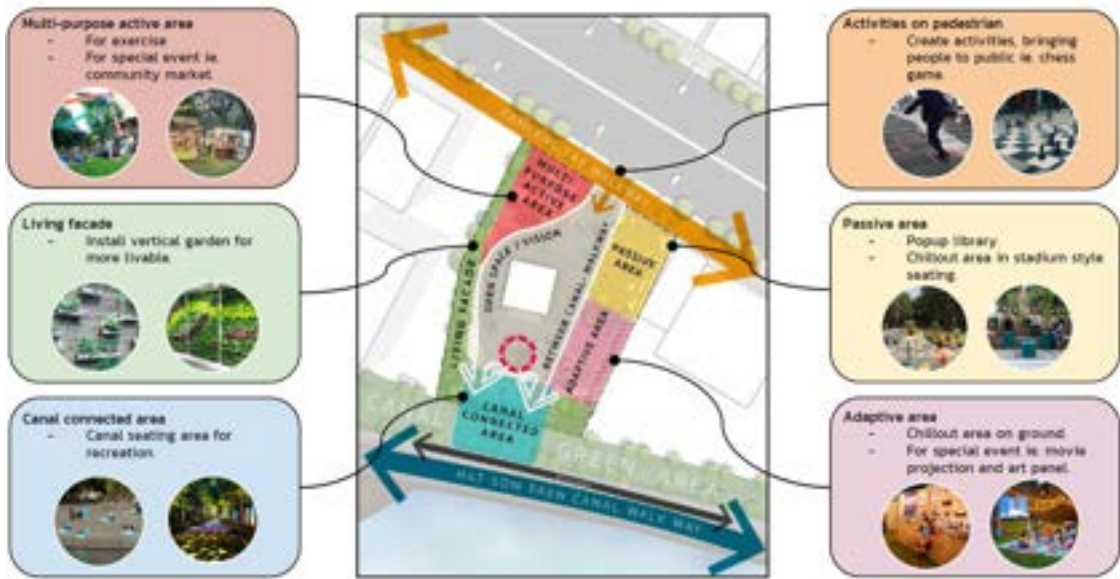


Source: JICA Project Team

**Figure 2.3.56 Detailed Plan for Pho Ta Khing's Shrine Area**

### b) Detailed Design

To cover two (2) design areas; (6) Temporary activities, Kamlangsap Road, and (7) Public Space improvement, the detailed design is prepared based on the concept shown in Figure 2.3.57. The concept focuses on encouraging people to use public space through temporary activities. Therefore, an activity was created on walkway at the entrance of the shrine. Pho Ta Khing Shrine area also was created as a multi-purpose area for community events e.g., community market and outdoor movie projection and common activities both active and passive activities i.e., exercise, resting and meeting point. This area also can be used to connect with the canal seamlessly by providing recreation space with seating area as well as living façade and vertical garden with ornamental plants to make the area more livable.



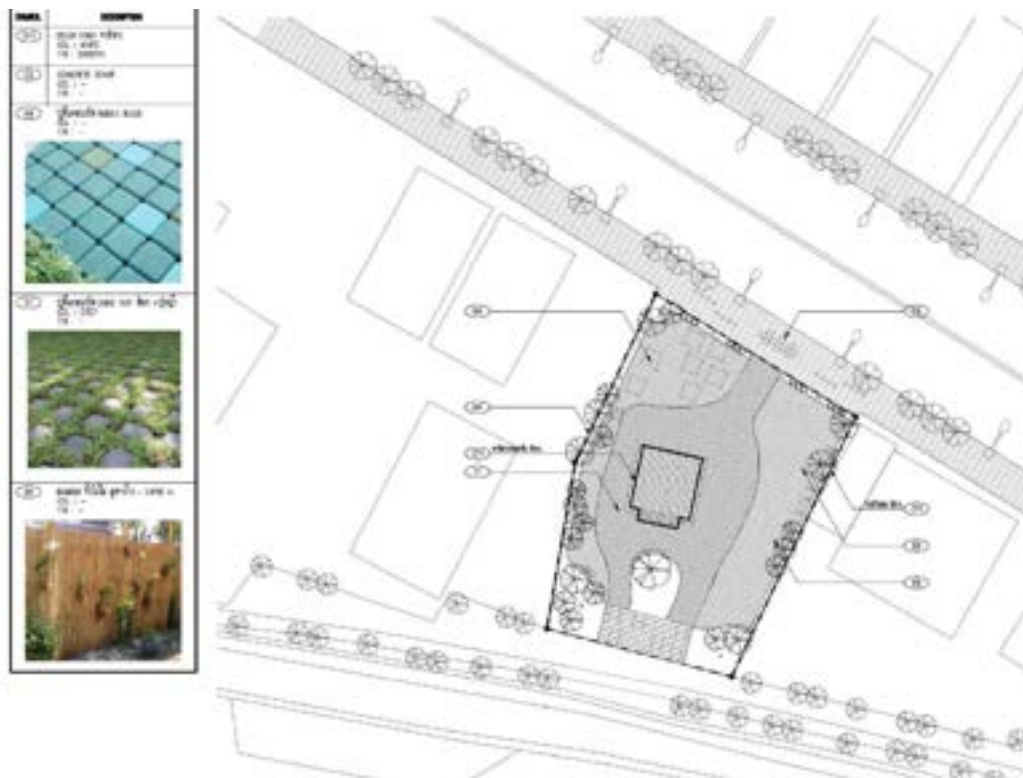
Source: JICA Project Team

**Figure 2.3.57 Programmatic Design of Pho Ta Khing's Shrine Area**

The physical improvement addressed in the detail design of Zone 2 are summarized as follows.

**Pavement**

Paving bubble block and cubic turf paver are used to improve the ground surface of Pho Ta Khing's Shrine for more walkable.

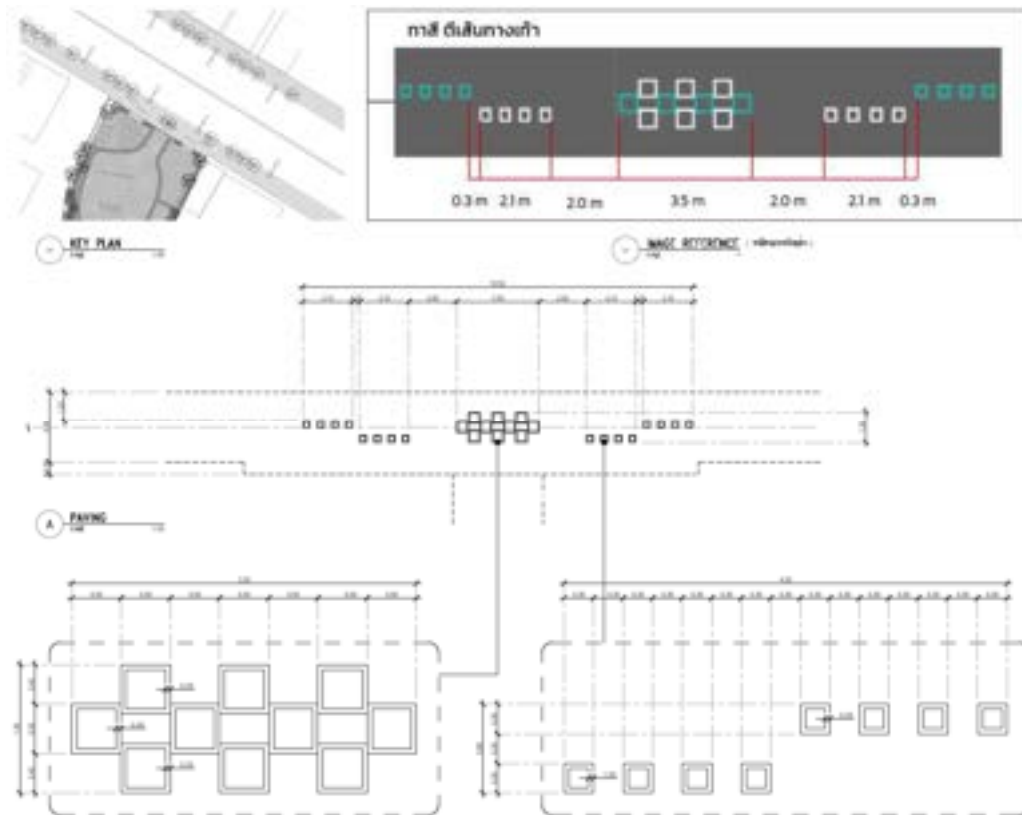


Source: JICA Project Team

**Figure 2.3.58 Pavement Material Plan for Zone 2: Pho Ta Khing's Shrine**

## Painting

At the entrance of Pho Ta Khing's Shrine, walkway is painted as shown in Figure 2.3.59. to promote physical activity (jump games).



Source: JICA Project Team

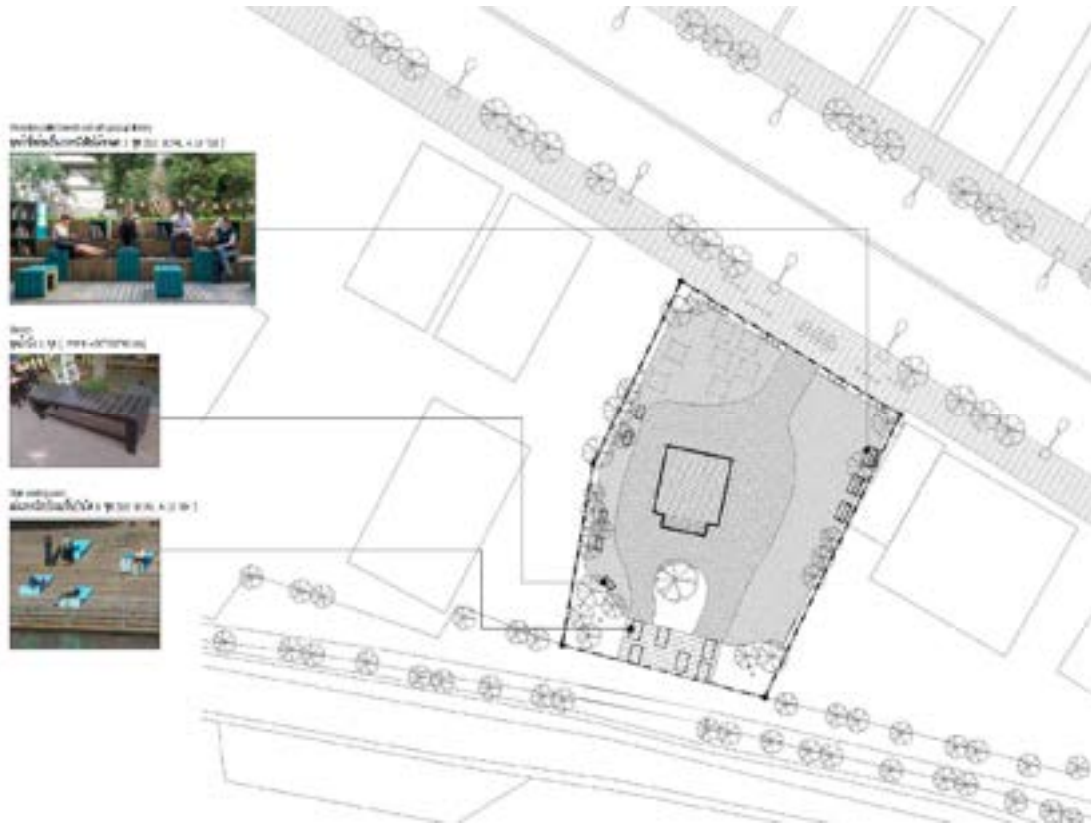
**Figure 2.3.59 Painting Plan for Zone 2: Pho Ta Khing's Shrine**

## Furniture

The following furniture are installed at the locations shown in Figure 2.3.60.

- Street furniture: 5 sets of benches, 3 sets of wooden pallet benches with popup library around the park and 6 sets of stair seating pads at the stair connected to canal walkway to support social activities.
- Movable giant chess at the entrance area to create interactions using street furniture while walking.





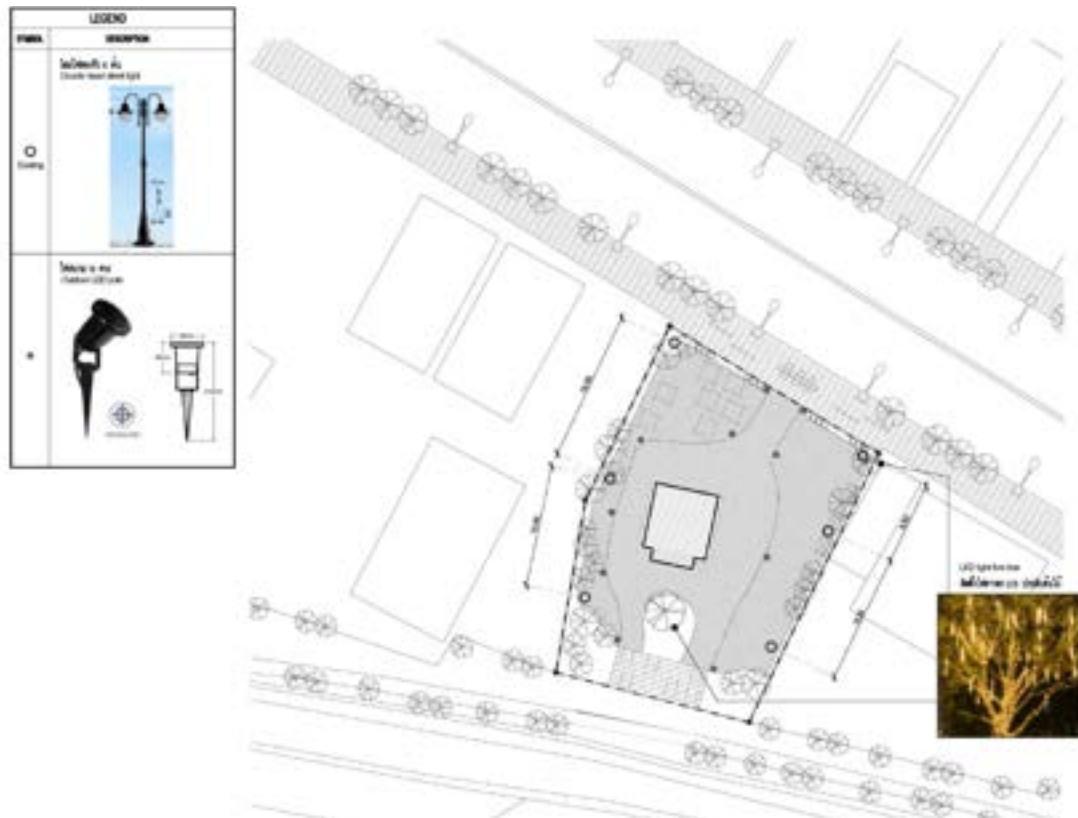
Source: JICA Project Team

**Figure 2.3.60 Furniture Plan for Zone 2: Pho Ta Khing's Shrine**

### **Lighting system**

The following lights were installed for more safety at night and also to prepare for night events.

- 10 sets of outdoor warm light LED poles on the ground around this area.
- 50 sets of warm LED lights for trees at the entrance area and the area connected to canal walkway.



Source: JICA Project Team

**Figure 2.3.61 Lighting System Plan for Zone 2: Pho Ta Khing's Shrine**

### **Landscape**

The following plants are installed or planted to improve the landscape for more livable.

- Bamboo fence with ornamental plants: 10 sets of Javanese treebine with pot, 10 sets of Nephrolepis with pot and 10 sets of Golden pothos with pot on the left side of the park.
- Shrubs: 30 trees of Carmona retusa at the entrance.
- Perennials: 2 trees of Queen's flower and 2 trees of Cinnamon at the area connected to canal walkway.



Source: JICA Project Team




**Figure 2.3.62 Landscaping Plan for Zone 2: Pho Ta Khing's Shrine**


### c) Construction





As mentioned above, also for Zone 2, BOQ and the safety plan which met JICA's criteria were prepared, and MOU was signed before starting construction. The design and construction of Zone 2 focuses on encouraging temporary activities to promote physical activities. Based on the detailed design described above, construction was started on 1<sup>st</sup> March 2021. The construction had been inspected and reported every two weeks by designated safety managers to confirm biweekly progress of the construction activities and safety risks associated with them, and share risks, issues or problems of the construction activities. Details of the construction is summarized in the table below.





**Table 2.3.8 Construction of Zone 2**

Task	Construction Detail	Photo of the Construction
<b>(6) Temporary activities along Kamlangsap Road in front of Pho Ta Khing's Shrine</b>		
Painting	Thermoplastic colors were painted for pedestrian to promote physical activities	
Furniture	The moveable giant chess was placed in the Shrine's area to create interaction between street furniture and people while walking	
<b>(7) Public space improvement at Pho Ta Khing's Shrine</b>		
Painting	Ultra-premium color was painted for the shrine and the wall	 <p style="text-align: center;"><b>Shrine</b></p>

Task	Construction Detail	Photo of the Construction
		 <p><b>Wall</b></p>
Lighting system	Outdoor LED light pole and LED light for trees were installed to create more safety at night also prepare for night events	 <p><b>Outdoor LED light pole</b></p>  <p><b>LED light for trees</b></p>
Foundation	Demolishing, ground leveling, placing bubble block and cubic turf paver for more walkable surface	

<b>Task</b>	<b>Construction Detail</b>	<b>Photo of the Construction</b>
Landscape	Bamboo fence, ornamental plant, shrub plant and perennial plant were installed for more livable	 <p><b>Bamboo fence</b></p>  <p><b>Shrubs</b></p>  <p><b>Perennials</b></p>
Furniture	Benches, wooden pallet bench sets, and stair seating pads were placed for resting	 <p><b>Benches</b></p>



Task	Construction Detail	Photo of the Construction
		 <p><b>Wooden pallet bench sets</b></p>  <p><b>Stair seating pads</b></p>

Source: JICA Project Team

After the construction was completed on 9 May 2021, an online final inspection was held on 20 May 2021 to collaboratively inspect and check the construction work by JICA Project Team, Tessaban, community and contractor. It was resulted that the project is completed according to the detailed design and durable to use. Figure 2.3.63 to Figure 2.3.66 show Zone 2: Pho Ta Khing’s Shrine before and after the improvement.



Source: JICA Project Team

**Figure 2.3.63 Zone 2 Before and After Improvement - 1**



Source: JICA Project Team

**Figure 2.3.64 Zone 2 Before and After Improvement - 2**



Source: JICA Project Team

**Figure 2.3.65 Zone 2 Before and After Improvement - 3**



Source: JICA Project Team

**Figure 2.3.66 Zone 2 Before and After Improvement - 4**

### 2.3.8 Projects for Detailed Design Only

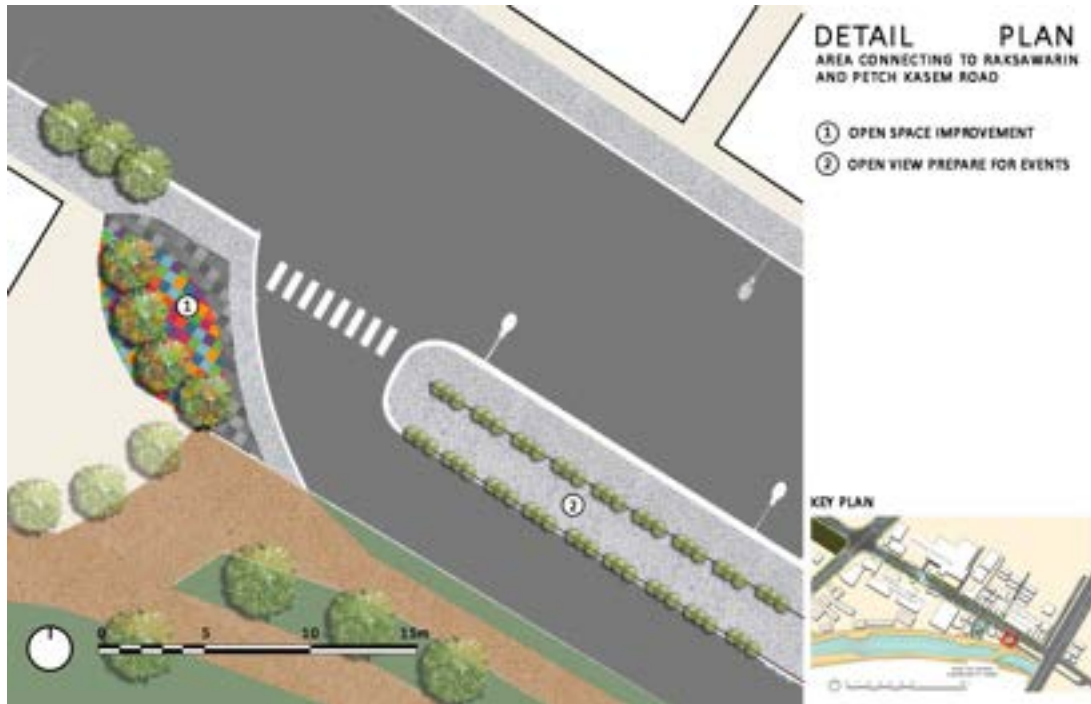
#### 1) Improvement of Zone 3: Area connecting to Raksawarin and Petchkasem road

##### a) Outline

This zone is the area connecting to Raksawarin and Petchkasem road. Even this zone is the open view, yet still abandoned space and lack of connection between activities. According to Tessaban plan, there is a canal walkway project on progress and this area will be connected to the project in the future. Thereby, the design focuses on relationship of activities by preparing space for events and festivals.

There are two (2) projects of zone 3 which are (8) Open Space connecting area to Raksawarin and (9) Ranong city's gateway. This zone mainly designed for being as

connecting zone to Raksawarin hot spring. The detail design includes the pavement, planting, furniture, and construction work. During the event, the Ranong city's gateway area can be decorated with the colorful umbrellas for the attractiveness and representing Ranong's uniqueness in term of the rainiest province in Thailand.



Source: JICA Project Team

**Figure 2.3.67 Detailed Plan for Zone 3: Area connecting Raksawarin and Petchkasem Road**

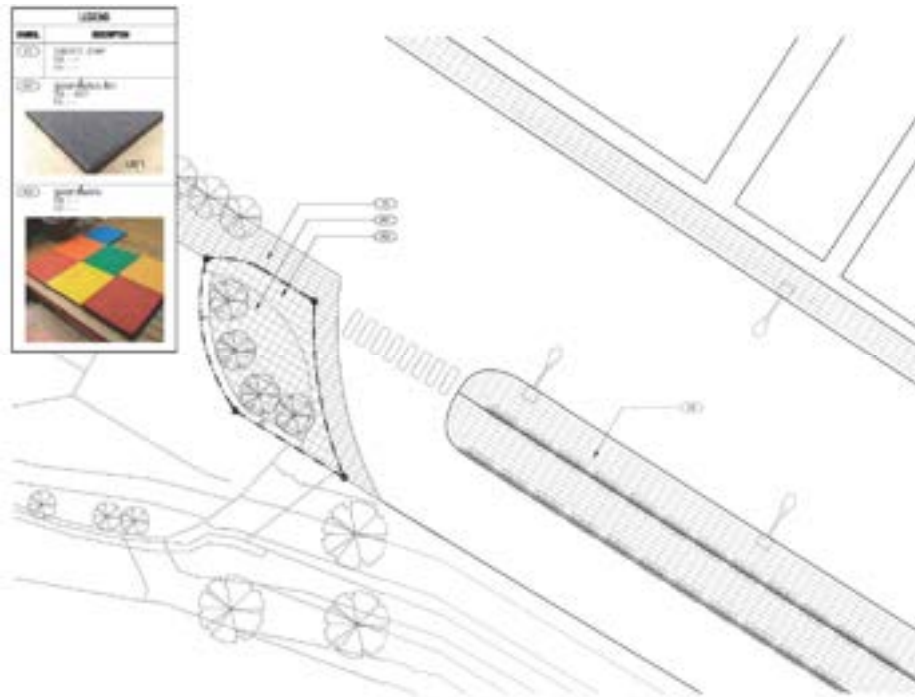
### b) Detailed Design

To cover two (2) design areas mentioned above, detailed design including the following components was prepared. The concept focuses on encouraging people to walk and create a walkable environment by improving the landscape of the walkway and providing the small pocket park to link the two (2) walkway; the canal walkway and Kamlangsap walkway. The abandoned space which belongs to Tessaban is suggested to be developed as a small park for resting and relaxing while walking to Raksawarin hot spring. Furthermore, the developed space can also be used during the events or festivals. It can be seamlessly connected to canal walkway by paving colorful paver surface for the attractiveness and planting the tree with benches as for people to relax. Apart from the space improvement, an open view when entering the Kamlangsap road from Raksawarin hot spring and Petch Kasem road is created by planting trees and provide over railing pot with fragrance plants to create pedestrian friendly with freshness. The main physical improvements mentioned in the detail design are summarized as below.

#### **Pavement**

Colorful EPDM rubber paver is used to improve pavement at the area connecting to canal walkway to create interactions among pedestrians and support physical and social activities.



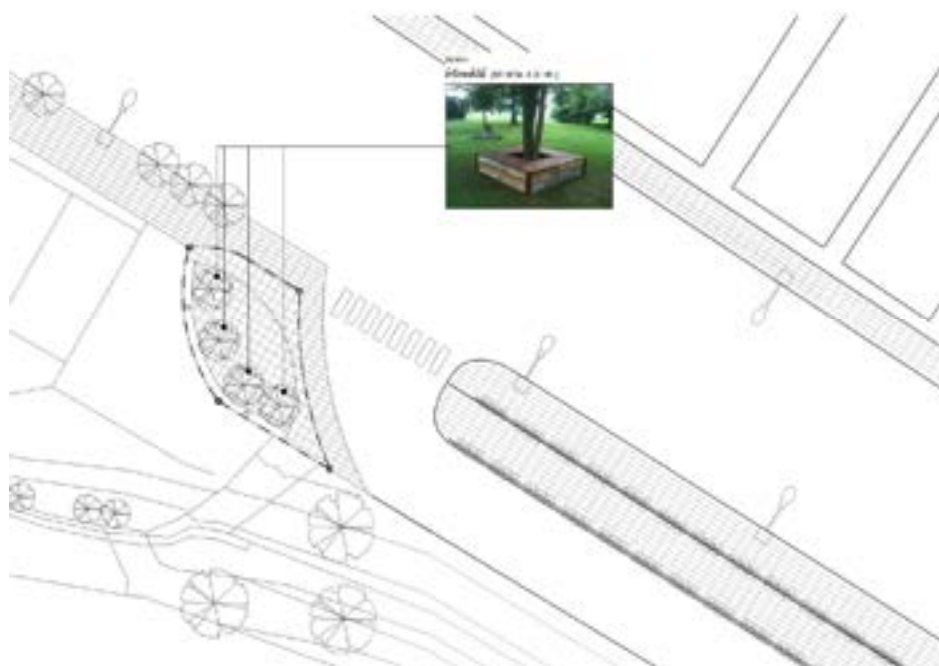


Source: JICA Project Team

**Figure 2.3.68 Pavement Plan for Zone 3: Area connecting Raksawarin and Petchkasem Road**

### Furniture

Four (4) sets of tree benches are installed in the area which can serve as a meeting point and a gathering area.



Source: JICA Project Team

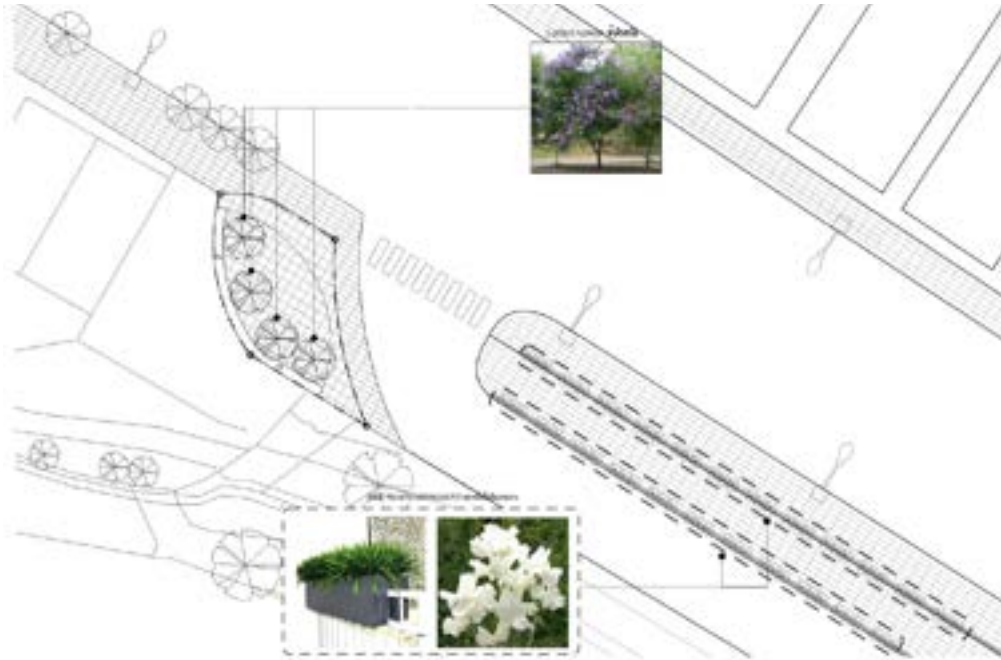
**Figure 2.3.69 Furniture Plan for Zone 3: Area connecting Raksawarin and Petchkasem Road**



## Landscape

The following plants are planted at the locations shown in Figure 2.3.70.

- Ornamentals: 200 sets of Sweetpea flower with over railing pot along the walkway connecting to Raksawarin to increase freshness and livability.
- Perennials: 4 trees of Queen's flower at the area connecting to canal walkway area to provide more shade and enhance livability.



Source: JICA Project Team

**Figure 2.3.70 Landscaping Plan for Zone 3: Area connecting Raksawarin and Petchkasem Road**

### c) Suggestion for Open Space

This zone is prepared to accommodate activities during festivals and events in the city in the future. The street elements that should be installed to create the visual point from Raksawarin and Petchkasem road during special times and make the area more walkable are as follows:

- Temporary street elements for increasing people's interaction.
- Overhead structure such as light arch, ornamental climbing plant arch, or decorative arch that represent Ranong's identity.



Source: JICA Project Team

**Figure 2.3.71 Perspective of Open Space connecting to Raksawarin (8)**

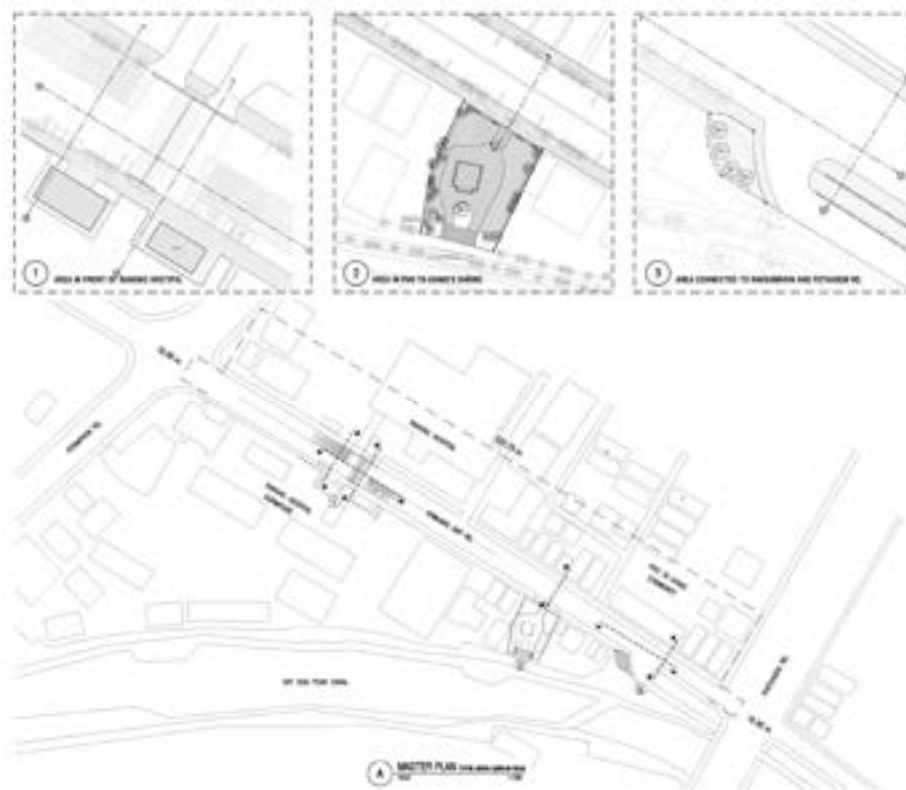
## **2) Improvement of Kamlangsap Road**

### **a) Outline**

Kamlangsap road is one of the important roads in Ranong where Ranong hospital are located. It is also the road connected between Permphon Road and Petchkasem Road. Besides, it connects to Raksawarin and canal walkway which are other public spaces in the city. However, even the road connects to such public spaces, yet there is still lack of walking access because some parts of sidewalk are exceedingly narrow and invaded by elements. Therefore, the design focuses on the street design in various areas of the city to provide a better sense of place, speed, and sensorial experience of various streets contexts. Linkage between places and recreation nodes to create use of spaces and relationship of activities with more efficient pedestrian access for all.

### **b) Detailed Design**

Since Kamlangsap Road covers all three (3) project zones, the design focuses in each zone are differed based on the location and user contexts. Zone 1: area in front of Ranong hospital focuses on the safety especially for crossing and pedestrian accessibility. Zone2: Pho Ta Khing's shrine focuses on encouraging temporary activities to promote urban interaction and promote physical activities. Lastly, Zone 3: Area connecting to Raksawarin and Petchkasem road focuses on relationship of activities through space preparation for events and festivals. The detail designs of each zone were already mentioned above.



Source: JICA Project Team

**Figure 2.3.72 Zoning Plan: Kamlangsap Road Improvement**

For overall design of Kamlangsap road. The detailed design including the following components was prepared. The concept focuses on walkability, connectivity, and integration with surrounding areas. In addition, the detail design for all along Kamlangsap road consists with three (3) main physical improvement which are repaving pedestrian walkway material for more durability, walkway expansion for better accessible and installation of information signages.

The designs of the signages were provided to increase the use of public transport and opportunity for walking or cycling along the connected routes around cities since many attractions are in walking distance. There are 2 designs of information signages which are tourist attraction (Figure 2.3.73) and songteaw route (Figure 2.3.74) preparing for Tessaban to install along the Kamlangsap road in the future. Tourist attraction signage should be installed at every tourist point in the city while songteaw route signage should be installed at every tourist point in the city and every bus stop area.

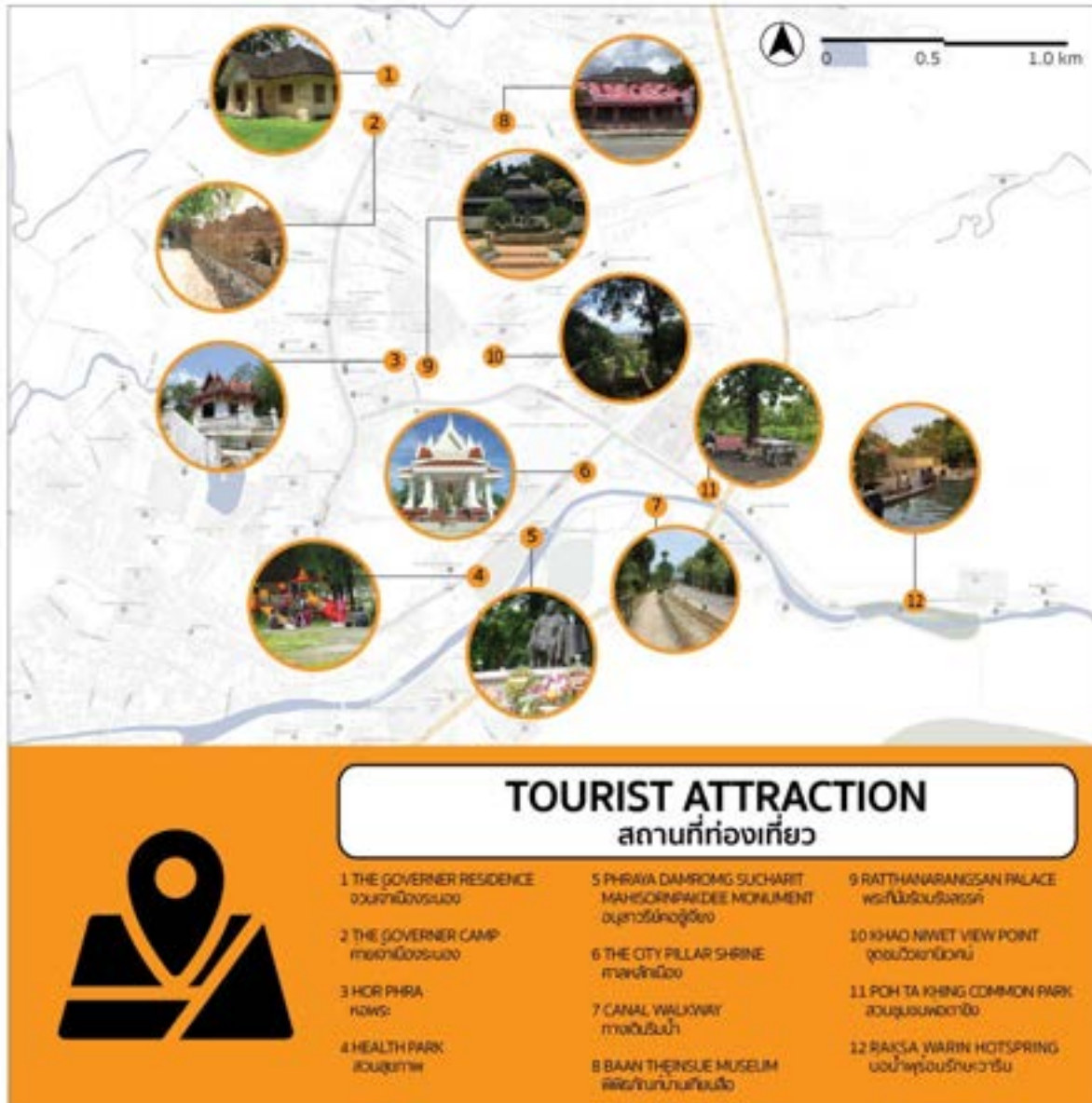
### c) Suggestions

Kamlangsap road improvement plan is prepared as a reference for Tessaban in case they have the plan for road improvement in the future. After the completion of the Kamlangsap road improvement, Tessaban should maintain elements to make them last longer by following the item in the table below. Information signage for tourist attraction (see Figure 2.3.73) and songteaw route (see Figure 2.3.74) are also suggested to be installed at every tourism spot and bus stop area in the city.

**Table 2.3.9 Monitoring the Kamlangsap Road Improvement Plan**

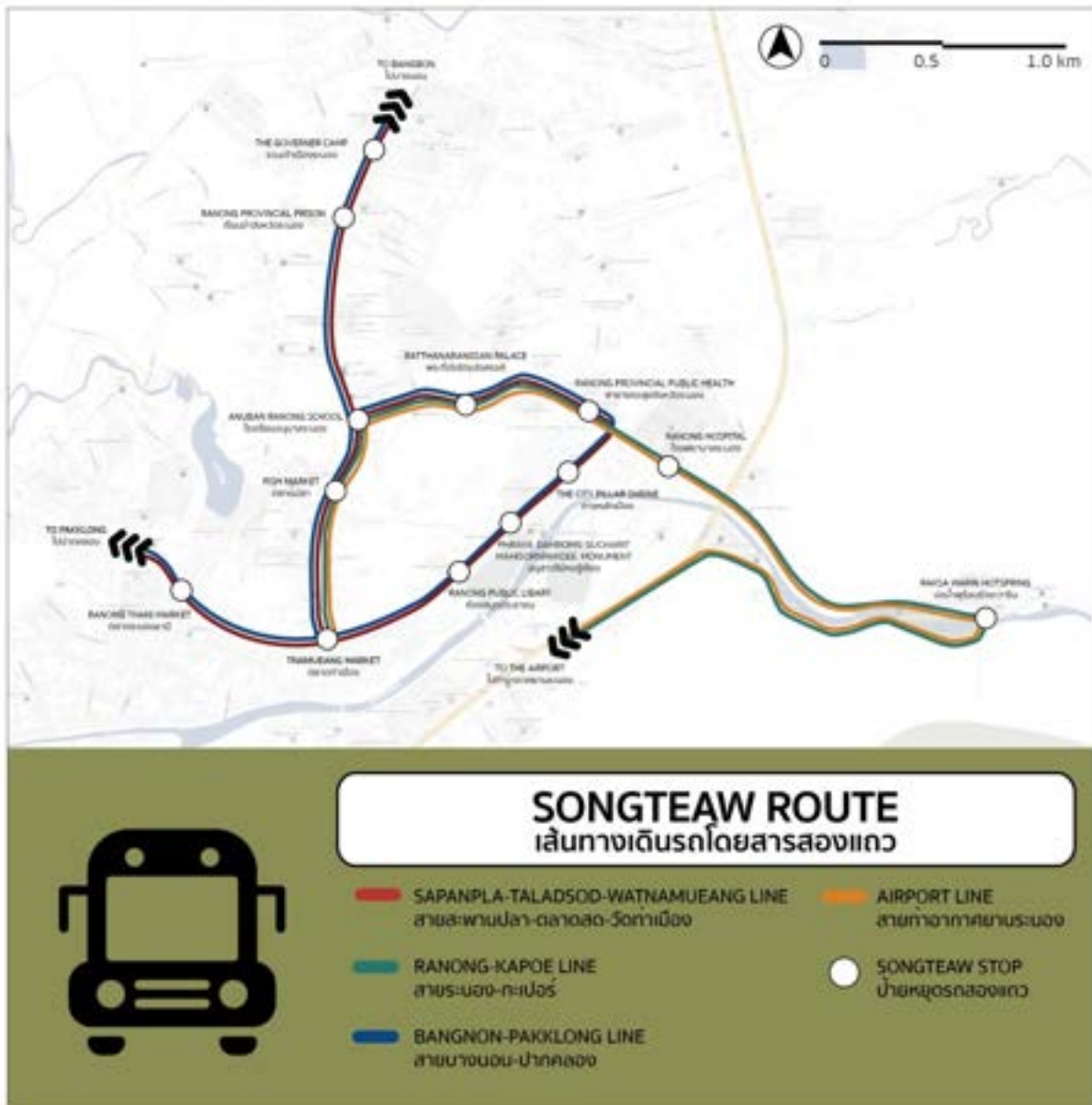
Monitoring Period	Item
Daily	Litter collection and cleaning
Weekly	Pedestrian and Road cleaning
	Information signage inspection and cleaning
Monthly	Information Signage inspection and cleaning
	Street elements inspection and cleaning
Yearly	Repainting surface

Source: JICA Project Team



Source: JICA Project Team

**Figure 2.3.73 Information Signage: Tourist Attraction**



Source: JICA Project Team

**Figure 2.3.74 Information Signage: Songteaw Route**



## 2.4 Operation and Management Plan

### 2.4.1 Operation and Management Framework

Operation and management (O&M) is defined as an administration of managerial practices aimed at ensuring efficiency within an organization to improve effectiveness, profitability, and sustainability. It involves the wise use of resources from staff, materials, equipment, and technology, converting these inputs into efficient and effective outputs on a day-to-day basis and at a strategic level within an organization. O&M guidelines aim to achieve the following goals:

**Better Output** – The operations manager optimizes and improves processes that have a significant impact on the project, product, or service. This usually leads to higher output, lower defect rates, and lower costs.

**Competitive Advantage** – Better output leads to a better product or service over competitors. This allows the city to stand out from the competition, gaining higher potential to have support from both public and private sectors.

**Better Citizen Engagement** – As a combination of the first two, the city should end up improving the bottom line and making better engagement with the citizens and any relevant stakeholders.

#### Structure of O&M Team

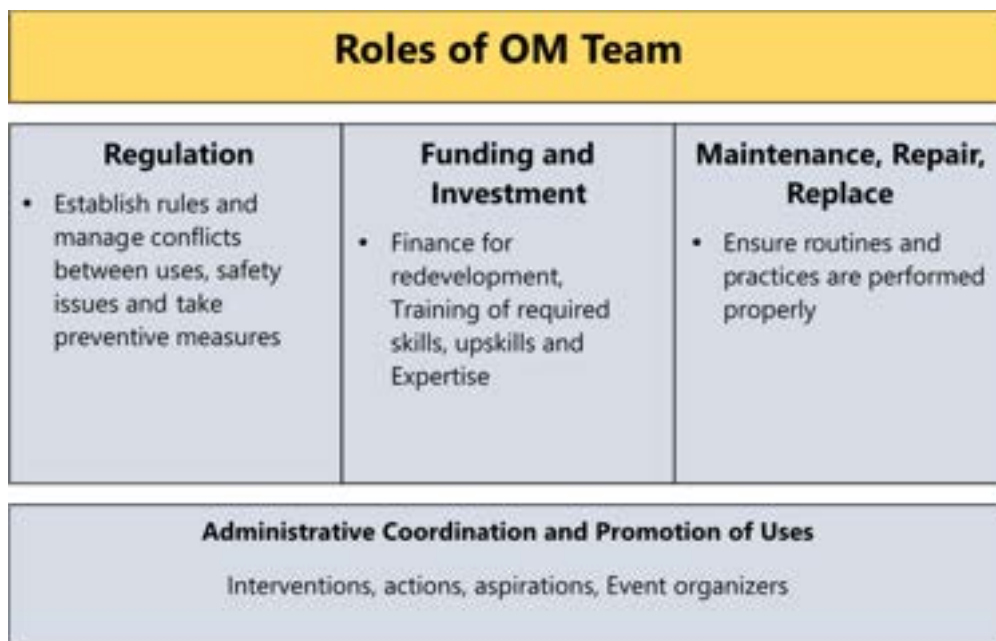
To achieve the above-mentioned goals, an O&M team has to be established with the following two missions: 1) the overall maintenance and care of a building and any built environment, landscape and infrastructure, and 2) administrating the processes to organize social, environmental, and economic activities which can be offered through the facility. This includes the processes of planning, coordinating, purchasing, logistics, scheduling, staffing, and general services – with the goal of maintaining, controlling, and improving organizational activities.



Source: JICA Project Team

**Figure 2.4.1 Framework of O&M Team**

A state-centric viewpoint with support from private and public entities is highly recommended for a Tessaban project. In other words, the main responsibility will remain with the Tessaban supported by 3-5 representatives from the private, public, and civil sectors (Figure 2.4.2). The roles and responsibilities of the O&M Team can be gradually delegated from the Tessaban to other organizations; for example, the Tessaban can outsource some routine maintenance to private groups who can then report back to the O&M Team. Meanwhile, the community or local volunteers can keep an eye on such facilities to prevent misbehaviors and crimes. Therefore, the integrated O&M Team with different sectors will enhance the performance and efficiency of the maintenance toward future sustainability.



Source: JICA Project Team

**Figure 2.4.2 Roles of an O&M Team**

The O&M team is expected to engage in four key roles: regulation, funding and investment, maintenance/repair/replacement (or maintenance plan), and administrative and promotion of uses. The details of each role are summarized below.

**(1) Regulation**

- Establish and set rules to ensure that the site, division of zones, access to the site and the multi-purposes of the site are updated and revised according to the changing needs of the stakeholders.
- Establish safety and risk monitoring plan to ensure that all preventive measures can be put in place timely.
- Establish and implement incentive measures to ensure citizen engagement and to promote responsible behaviors.

**(2) Funding and Investment**

- Seek information and share potential financial sources according to the fiscal year and any special project funding available.



- Establish a task force (when deemed appropriate) to formulate a proposal for partnerships to contribute both “in kind” and “in cash” from private corporations or international funding bodies.
- Secure the budget for lifecycle costs for maintenance.
- Manage any income and revenue gained from any event, any sponsorship to ensure that the income is investing into a wise use.

### **(3) Maintenance, Repair, or Replacement**

- Advise or provide information about maintenance practices to person(s) or organization(s) in charge to ensure that maintenance of the site is performed well.
- Manage the routine maintenance activities such as cleaning up and maintenance of the facilities/equipment to be performed properly.
- Monitor the routine maintenance plan and appraise the performance with alternative solutions (if any)

### **(4) Administration and Promotion of Uses (Events)**

- Coordinate with subgroups to implement events and activities based on the annual events and activities calendar.
- Formulate an annual event calendar with partners.

## **2.4.2 Direction of O&M Plan**

This O&M plan will be used for establishing the O&M team for the pilot project of Ranong. The scope of the pilot project covers the main road leading to the city, under the concept of creating a livable city for healthy people by striving to create a link between the pilot project site and the site of the DPT’s construction project through a small park, the Pho Ta Khing’s Shrine. In addition, the pilot project aims to create a preliminary model of a walkable road that emphasizes safety for pedestrians while creating order for the street-cart shop. The nature of the pilot project site is therefore a public space that combines many elements, from roads, sidewalks, public bus shelters, car parks, a small park that links the road to the public canal, which has been renovated to be a recreation space of the city in the future.

The missions for the management of the pilot project site aim to build a healthy city, a green city and a city that offers convenience, beauty, while satisfying all groups of people of all ages, including those who lack opportunities or are vulnerable to their well-being. It also aims to build a pedestrian-friendly and safe city that will continue to be walkable. With these aspirations and policies, the missions and duties of the O&M team are divided into four main roles and responsibilities according to the elements of management plan.

## **2.4.3 Ranong’s Operation and Management Team (O&M Team)**

The key structure of the O&M team of Ranong was agreed by the PPT where the state agency or the local government organization itself should still be the main agency or the focal point in accordance with the provisions of the law to be responsible for the

management of public areas in their respective jurisdictions. The power of the state or local government should be balanced by creating an O&M team with a fair representation of other public organizations, private sector, and communities who are related to the pilot project. This is to ensure to share responsibilities and balance the opinions toward efficient operations management.

<b>Tessaban</b>	<b>Community (representatives)</b>	<b>Private corporations (representatives)</b>	<b>Public Organisations (representatives)</b>
<ul style="list-style-type: none"> <li>•Mayor</li> <li>•Clerk office</li> <li>•Director of technical planning division</li> <li>•Director of finance division</li> <li>•Director of Public Works Division</li> <li>•Director of Education division</li> <li>•Director of Public Health and Environment Division</li> <li>•Director of Social welfare</li> <li>•Etc.</li> </ul>	<ul style="list-style-type: none"> <li>•Head of Pho Ta Khing Community</li> <li>•Communities nearby Ranong hospital</li> <li>•Cycle group</li> <li>•Group of interests</li> </ul>	<ul style="list-style-type: none"> <li>•Ranong Chamber of Commerce</li> <li>•Bus operator</li> <li>•Motorcycle Taxi Group</li> <li>•Food-carts vendors</li> <li>•Shop Owners along the street</li> <li>•Etc.</li> </ul>	<ul style="list-style-type: none"> <li>•DPT</li> <li>•Ranong hospital</li> <li>•Police officers</li> <li>•Public Agency along the street</li> <li>•TAT</li> <li>•Etc.</li> </ul>

Source: JICA Project Team

**Figure 2.4.3 Proposed Composition of the Ranong O&M Team**

Figure 2.4.3 shows a list of proposed Ranong O&M team members. It is highly recommended that this O&M team should be authorized by the Tessaban to form themselves into a committee. The purpose of an O&M committee is not only to maintain and secure the improved pilot project site and organize events but also promote overall developments in the master plan.

With this structure, the committee is chaired by the mayor while Division of technical planning of Tessaban Mueang Ranong would be a secretariat. The members of committees consist of various organizations from public, private, and citizens, such as the DPT, the TAT, street vendors, and heads of Pho Ta Khing community. As mentioned above, the O&M team has four key roles listed below. The guidelines for these roles are elaborated in the next section.

1. Formulation of rules and regulations;
2. Funding and investment;
3. Preparation of maintenance plan; maintenance, repair, and replacement; and

4. Administration and promotion of uses.

**1) Rules and Regulations**

Considering the spatial aspect, the usage must be in accordance with traffic laws because roads are the main physical element of the pilot project site. Despite the law aims to transfer such authority to local governments in the future, at present it has not been transferred to this authority yet. The duties of setting up rules and regulations are under the authority of the traffic police. Therefore, the rules for the pilot project site cannot be issued by the management team. However, the O&M team can raise awareness for people to follow traffic rules. The design of the road surface has been used to encourage people to be aware of the various points that need to pay attention for the safety of pedestrians when crossing the road. The site also has a parking area for different types of vehicles such as buses, motorcycles and personal cars that still lacks order, even after designing and painting new parking lines. It is still the duty of the O&M team to create awareness for users to follow the rules.

In the case of setting rules, another matter on the roadside to consider is food carts parked in front of the hospital, which are illegal activity. According to the provision of law, officers of the local government organization have the duty to control distribution of goods in public places or roads in their area. One way is to issue local ordinances for the benefit of the people and control the sale of goods in public places or roads.

The discussion with the PPT on the possible enforcement of the law has come to a compromise status. Therefore, the spatial management of this area has to be a matter of deciding whether to continue selling food on the street or to find a new area to create order. While the local government organization has a power to permit the conduct of business on the road or public space, it should be exercised on the basis that the vendors do not cause trouble for users of pedestrian walkways and roads, and with establishment of rules to maintain hygiene and cleanliness.

In addition to the road, the pilot project site also contains other main physical elements such as public bus shelter, the Pho Ta Khing's Shrine and the sidewalk where cleanliness of these premises must also be managed. These are open spaces used by pedestrians to walk through and possibly as recreational activities specifically in the Pho Ta Khing's Shrine area. As a result, the time limit for entry and exit in these areas is not possible, but rules for the use of such areas are still needed to promote safety and non-violating activities for others in the pilot project area.

The rules and regulations for the pilot project site are listed in Table 2.4.1. The social, economic, and environmental purposes such as waste management, clean energy use, prohibition of smoking, promotion of local products are also considered to regulate the users in the pilot project site.

**Table 2.4.1 Rules and Regulations for the Pilot Projects**

Element	Rule and Regulation	Enforcement Method	Responsible Group
Road	No double parking of cars or	Raise	Appoint Street Vendors as

Element	Rule and Regulation	Enforcement Method	Responsible Group
	<p>motorcycles parking for those who use the service or live in the area such as the hospital, government offices, residences, the coffee shops, and the convenience stores.</p> <p>Do not park in the provided space for public buses stop to pick up passengers</p>	awareness	<p>an Ambassador for road and pedestrians path safety, cleanliness, create a unique dialogue guideline for street vendors to say when encounter any incidents, for example:</p> <p>"Help keep Ranong Road Safe and clean, livable city, lovely Ranong people"</p>
Sidewalk	<p>Keep the sidewalk through the area path clean (no litter)</p> <p>Do not park motorcycle taxis waiting for picking up passengers.</p> <p>Do not obstruct pedestrian by parking and selling food on the side of the road.</p> <p>Keep clean when buying food from the carts on the side of the road</p>	<p>Raise awareness</p> <p>By law</p>	<p>O&amp;M Team announces the new crossroad,</p> <p>Informing Hospital staffs to participate in the road safety.</p> <p>Traffic police and Tessaban provide support.</p>
Public bus shelter	<p>No smoking while waiting for the bus</p> <p>Public buses stop to pick up passengers</p>	By law	Tessaban and Traffic police officer enforcing the law and announcing the new built of the bus shelter, asking for collaboration to look after the built.
Crossroad	Slow down the care at least 500 meters or in the visibility distance before heading to the colorful crossroad paint.	Raise awareness	<p>Traffic police officer and a volunteer team to put up a flag 500 meters before the crossroad to initially stimulate the changes of speeding behaviors.</p> <p>Test this activity for a few weeks and re-check if vehicles' speed changes.</p> <p>Hospital staff, vendors and community members can provide feedback from their observation and suggest any additional solutions to improve walkable city and road safety.</p>
The courtyard area and the	Walking through the shrine of Pho Ta Khing to the canal	Raise Awareness	Head of the community holds an inspection and

Element	Rule and Regulation	Enforcement Method	Responsible Group
space at the Pho Ta Khing's Shrine	walkway – keep clean  No consumption of alcohol  Recreational activities around Pho Ta Khing's Shrine: kids must be supervised at all time  No vandalism  As the space open 24 hours and for event, a letter of permit should be acquired from the O&M team.		showing the completed site to community members.  Tessaban providing supports
Various Movable furniture and chess game  (Bench, book shelf, and chess game)	A letter of permit should be acquired from the O&M team, in the case of moving the furniture to other places.  Reservation should be made for the chess games.	Raise awareness	Announcement posted on Tessaban website and relevant organizations to PR the completion of the site and insist that now the site belongs to Ranong people to look after and use it responsibly.
Other decorations (vertical garden) and miscellaneous items (solar lighting on the lawn, chess)	Keep clean	Raise awareness	Vendors and community members take turn to water the plant (if needed) and report to O&M Team or Tessaban if they are missing or need replacement.

Source: JICA Project Team

### **Further Recommendations on Setting Rules and Regulations**

The O&M team should review the rules and regulations periodically to adjust them and to find new solutions or give advice on major operation in a timely manner. These procedures include:

- Hours of operation: the times that the facility will be open for business. This may differ during critical situations. The O&M team should meet and advise on the most appropriate solution to the situation.
- User categories: the users should be identified to understand the behavior of users and main users. This will lead to the further improvements that are suitable for the key users. Examples of user categories are individual and family members, daily users, guests, participants and spectators, employees, and management.
- Fees and rates: the cost for use of the facility through various memberships, daily fees, admission fees, guest passes, and rentals (in the case of event).

- Reservation procedures and space allocation: methods for scheduling facility usage.
- Outsourced services: examples include camps, merchandise, food service, security, and parking.

## **2) Funding and Investment**

It is necessary to consider lifecycle costs for facilities and equipment developed or improved by the pilot project as such costs will be a key expense for the operation and management. While the majority of the funding for O&M will come from the Tessaban, the Tessaban can manage this cost with O&M team to share some responsibilities or gain some support. The life cycle costs include:

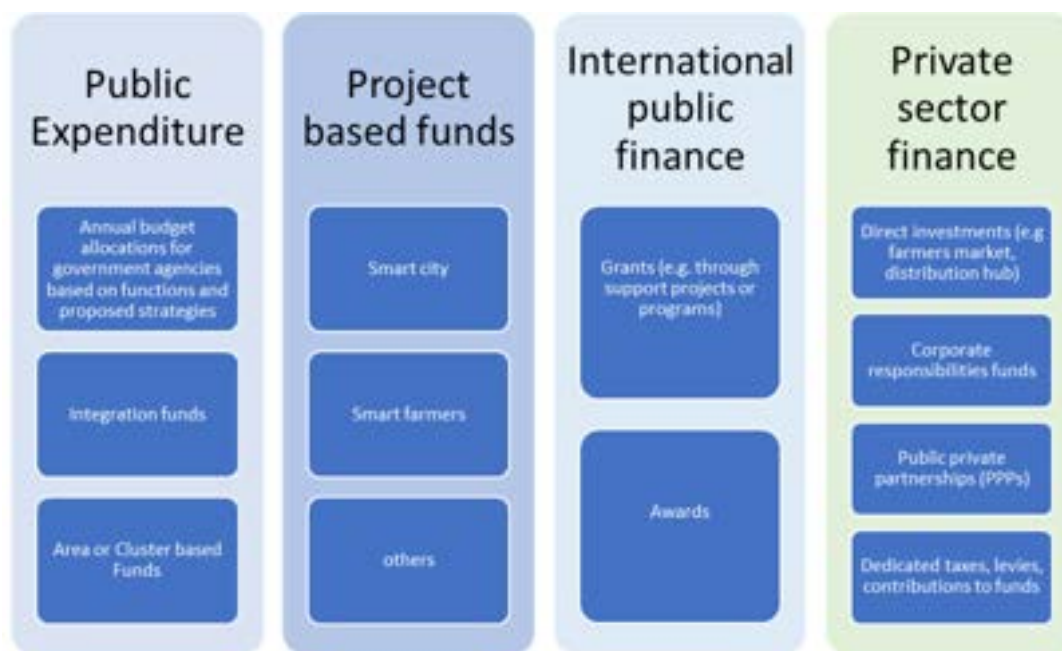
- Purchase costs (how much does a material and an overall asset cost to purchase or constructed?)
- Running costs (what are the operational costs of using an asset, such as the hourly costs of lighting up the park decoration and so on?)
- Maintenance costs (how much does it cost to retain an asset in a fit for purpose condition?).
- Training costs (how much will it cost to train staff in the use of a new maintenance system?).
- Decommissioning and disposal costs (how much will it cost to wind down an asset and to dispose of it bearing in mind operational and environmental issues?).
- Supply chain: the facilities need supplies such as food and drink to be sold to customers as well as services such as utilities. Those businesses or vendors in the park or around the pilot project site which service around facilities will potentially see an increase in the demand for their products as the ripples of economic impact spread wider. This in turn will have an impact on maintenance costing, wear and tear for higher demand and higher number of users.
- Events: some new facilities change the local infrastructure and enable activities that were previously not possible to occur.

Although the major funding is under the Tessaban, there are several other budgeting finances to access, for instance, project-based funds, international public finance, and private sector finance. Such financial sources will significantly support the long-term development of the Tessaban and also bind the relationship between the Tessaban and other financial agencies.

To gain such support, the Tessaban is required to competitively submit a proposal to mobilize financial resources into their sustainable development and management of public spaces. Thus, it is important to map what type and amount of finance is available and which stakeholders could potentially have an interest in funding. To do this, the Tessaban should keep updating potential funding sources of other public and private sectors and learn how to create a fundraising campaign with partners.

In this context, there are four types of potential financial sources to be tapped by the

Tessaban. The details of each source are summarized below.



Source: JICA Project Team

**Figure 2.4.4 Potential Financial Sources**

### (1) Public Budget

The bulk of government expenditure (over 80% between 2009 to 2012) is dedicated through the Annual Budget Expenditure Act and channeled through the Prime Minister’s Office, central fund, and ministries. There are three groups of budgets, namely resources allocated to ministries (based on functions and proposed strategies), budget for policy integration based on the government’s agenda, and budget allocated to area-based integration, for example, groups of cities or regional plans. The budget for policy integration is of particular interest to mainstreaming the master plan into city development policy as it allows the infrastructure parts of local government to work closely with other relevant stakeholders, for example, environmental department, Ministry of Tourism and Sports (MOTS), tourism entities, community development.

### (2) Project-based Fund

Besides the existing public budget, there are public organizations working on a project grant basis. The remaining government budget is composed of funds of state-owned enterprises which operate several issue-based projects on their strategies, for example, smart cities, smart farmers, community-based tourism.

Therefore, project-based funds are the special program set by organizations within a specific period. The objectives, requirements, and details differ year to year. However, project-based funding is an option for the Tessaban which allows them to get some budget to implement projects related to their interested topics. Thus, the Tessaban is required to submit their own project proposals to the organizations’ platforms.

Currently, the National Innovation Agency (NIA) is a public financing source which supports new initiative and specifically support cities’ and communities’ projects. Calls for application



are available on different project focus each year. For instance, the upcoming project-based fund conducted by NIA is called City & Community Innovation Challenge 2022. This project emphasizes new innovations of a city. The details of this grant are summarized in Box 1. Besides this, the Thai Health Promotion Foundation also provides grants to cities to promote public health, as described in Box 2.

### **Box 1 National Innovation Agency (NIA) Grants for Innovation**

**Name of project:** City & Community Innovation Challenge 2022

**Details:** NIA provided an available grant for proposed innovation ideas, offering on an annual basis. Specific grant for 1,500,000 baht is now open for city and community innovation, offered for local government to submit a proposal to enhance art, wellbeing and health of the city and community.

**Application Date:** 1 August 2021 to 30 September 2021

**Consideration date:** October 2021

**Amount of Grant:** provides THB1.5 million to successful applicants.

**Registration:** <https://social.nia.or.th/2021/city65/>



### Box 2 Thai Health Promotion Foundation

**Name of Fund:** Thai Health Promotion Foundation Fund

**Details:** Interested person who are individual/ government agencies/ organization/ community/ clubs can apply for the financial support for the health-related projects that make a health behavioral change and solve the problem in such an area within proposed project's period (10-12 month). There are about 11 health related issues that can be applied for this fund which are alcohol and substance abuse control, tobacco control, road safety and disaster management, drug abuse protection and control, prevention of pre-pregnancy in adolescents, prevention of violence, healthy food promotion, physical activity promotion, healthy community strengthening, mental health promotion/emotional and stress management, and spiritual health pathway promotion.

**Amount of Grant:** Up to THB90,000. The budget does not support for purchasing durable goods, office costs and personal compensation excepting for speaker remuneration. Please note that the Thai Health Promotion Foundation provides an additional support of THB10,000 (only for actual disbursement). This supports the following issues:

- (1) Fee for making non-smoking and non-alcohol signs, project name sign with Thai health promotion foundation logo for up to THB1,000.
- (2) Report and internet fee for preparing interim report through online system for up to THB2,000.
- (3) Travel and accommodation expenditure to attend meetings with the Thai health promotion foundation for up to THB7,000.

**Period:** All year around. New applications start on 30<sup>th</sup> October.

**Application Form:** The application form is available on <https://www.thaihealth.or.th/>

### (3) International Public Finance

In Thailand, the impetus for city planning and strategies is often incubated through international support initiatives that are raising awareness about issues such as climate change risks, old town heritage preservation, creative cities and provide technical assistance to initiate the planning processes. The types of supports will be varied in terms of technical or financial support. Also, some international agencies provide grants through awards to raise the awareness and encourage city development in different topics. Mainly, such international agencies; like UNDP, UCLG, or European Union are focused on sustainable development and SDGs.

This international financial and technical support is similar to JICA's sustainable future initiatives and oftentimes being provided by industrialized nations to developing countries. For example, Thailand also receives international support related to the National Adaptation Planning process which could support climate adaptation and environmental related issues. An effective O&M needs a new skill set related to waste management, energy use, approaching this source of fund and expertise could help the O&M team achieve their goals. Examples of grants from international agencies are summarized in Box 3 and Box 4.

### Box 3 The World Organization of United Cities and Local Governments

**Name of Organization: United Cities and Local Governments**

**Details:** UCLG, as a global network of cities and local, regional, and metropolitan governments and their associations, is committed to representing, defending, and amplifying the voices of local and regional governments to leave no-one and no place behind. Together we are the sentinels of the hopes, dreams, and aspirations held by individuals in communities around the world -- searching for a life in which the ideals of the SDGs are a lived reality.

Through collaboration, dialogue, cooperation, and knowledge-sharing, we as a World Organization walk the walk, working to advance global response and action through groundbreaking commitments and agreements that become common threads that transcend borders and tie communities together, to uplift and empower the local level.

**Note:** Krabi has submitted a case study for the competition and now has been listed as part of this network.

**Sources:** <https://www.uclg.org/en/organisation/about>

### Box 4 SWITCH-Asia Grants Programme

**Name of Organization: Switch Asia funded by European Union**

**Name of project:** "SWITCH-ASIA Grants Programme"

**Details:** SWITCH-ASIA Grants Programme funds project across Asian countries towards sustainable city. The program has started since 2007 aiming to promote the sharing of knowledge and capacity building in local cities. the Grant Scheme will focus in particular on the external dimension of the EU Green Deal and of its focus areas, such as sustainable food-systems and circular economy.

**Application:** Submitting proposal within period. The last call proposal was on 3<sup>rd</sup> of November 2020 with the budget of EUR32,600,000.

**For more information:** [intpa-switch-asia@ec.europa.eu](mailto:intpa-switch-asia@ec.europa.eu)

**Sources:** <https://www.switch-asia.eu/grants-projects/about-grants/>

#### (4) Private Sector Finance

Private sources of revenue can be accessed with clear purposes and clear shared objectives with the targeted corporations. The project cannot be financed solely from public sources. The built facilities need to promote usages and may also create sources of revenue to enhance the sustainable efforts for the facility's maintenance. When we look at the traditional forms of obtaining revenue in business, we typically look at donations of cash, gifts, in-kind contributions, and revenues from fundraising efforts.

Private finance, which is relevant to city development and provides various funding programs, is part of their CSR activities under their respective foundations. In this term, the participation of the private sector in urban development can be promoted through CSR mainly to share the social responsibility among stakeholders. This can be formed as social assistances, safety, social activities, environmental activities, energy activities, health activities or charity which can be realized for wider local communities. Several urban CSR projects in Thailand is in the form of private foundations. The foundation usually designs

issue-based programs for each occasion. The program not only provides grants for project implementation but also for capacity and knowledge building of local governments and stakeholders. Examples of CSR programs are:

- SCG Foundation has carried out Sharing Opportunities Program (Box 5);
- PTT Foundation's "Chum-Chon-Yim-Dai (Smiley Community) (Box 6); and
- Thailand Walking and Cycling Institute Foundation (Box 7).

In many cases, the facility can also earn some revenue for signage and other advertisements within the facility. The facility could be hired for private functions and get back for every ticket sold for events within the facility. Many times, to effectively finance the facilities, there is a need for a better relationship between municipalities and private entrepreneurs. The public sector has the authority to implement project funding through the governing process, while the private sector can contribute financing and management expertise in the facilities.

Even though there are advantages in combining funding and revenue resources, there are two major challenges to facilitate a successful public-private partnership.

- There is a legal risk associated with the project earning revenue and gaining profit.
- There is no clear procedure, and any agreed rules tend to be beached in the past when there was always room for flexibility.

Besides this, it is recommended that the O&M team consider the influence of volunteers such as coffee clubs, dance clubs, and kids clubs. These established voluntary groups already own and control many activities. Rather than public authorities taking additional risks in trying to provide activities themselves, there is some logic in the strategy of incentivizing voluntary groups to open their facilities and organize activities in public spaces for the benefit of the wider community. An obvious example is the use of the facilities for after school clubs and as resources for young people to use during school holidays. It is widely accepted that voluntary groups can be used to help deliver wider government agendas such as health improvement, community cohesion, reduction in delinquency, and improvement in educational attainment. Some of these activities will be included in event calendars and can be used to incorporate O&M objectives.

### Box 5 SCG Foundation

**Name of project:** "Sharing Opportunities, Drawing the Future" Program

**Details:** SCG Foundation promotes and gives opportunities to SCG employees to use their capabilities to contribute to society and bring about various public service activities in collaboration with the community to promote sustainable community development. The program has taken part in strengthening the community in various dimensions, e.g., educational program, environmental stewardship, art and cultural promotion, and community relief in times of crisis like the COVID-19 pandemic in 2020. The SCG employees can form a group of 3 people or more to get the financial support to implement the project.

**Amount of Grant:** each project at a maximum of 50,000 Baht.



### Box 6 PTT Foundation

**Name of project:** "Chum-Chon-Yim-Dai (Smiley Community)

**Details:** The situation of COVID-19 outbreak cause the economic difficulty for communities, #farmers, SME and community enterprises in Thailand. The project was established for helping particularly communities and farmers who are struggling with their product selling and services. PR and marketing via online platform are the main strategies used for promoting the existence of the community products in online markets and linking to the consumer's market. #

**Online Market:** <https://www.thailandpostmart.com/ptt/>

**Shop Registration:** Applicants can register their shops via this link [https://www.thailandpostmart.com/shop\\_register](https://www.thailandpostmart.com/shop_register)

**Shop qualifications:**

- The shop must have standard products or/and receiving awards certified by public and private organization such as FDA
- The shop selling the products that are under the following 5 product types
  - o Processing foods such as rice, chili pastes, processing fruits or snacks
  - o Non-alcohol beverages
  - o Clothing
  - o Souvenirs, decoration products or household goods
  - o Processing herbs such as herb teas, herb balms
- It must be the products from people, community enterprise, SE, SME, OTOP, collaboratives and community groups. The group/enterprise identification documents must be submitted such as the documents showing that manufacturer's name corresponds to the FDA certificate or community enterprise registration document.
- The shop has "e-mail" to register an account for the project
- The product prices that are showed in the website include the delivery fees and operation costs (20-25%)
- The product(s) can be sent via any branches of Thailand Post.
- The shop will received the money within 12-15 operating days after buyers received the product for preventing scam/fraud.
- The shop having online shops/pages eg. Facebook, Line, Line Official, etc. which can be easily accessed by consumers/buyers
- The shop is able to report sale to the PTT each monthly throughout the joining period.



**Box 7 Private funding sources: Thailand Walking and Cycling Institute Foundation**

**Name of project:** "The 7<sup>th</sup> Thailand Bike and Walk Forum; Think Globally, Bike Walk Locally"

**Period:** 9 – 10 March, 2018

**Details:** The first forum is established in 2013 for presenting the research program in local and community that were practically implemented in the areas. In the forum, policy determining, researchers, experts and local practitioners can exchange the knowledge and experiences. Besides, the successful case studies from the other countries can also be presented and shared by the internationally invited speakers from public and private sectors. The average participants are more than 200 people in each forum with more than 100 academic articles that have been presented in the 1<sup>st</sup>–5<sup>th</sup> forum.

**Presentation Topics:** Infrastructure and Physical, Transportation Network, Social Return on Investment (SROI), Bike Tourism Community, Policy and Law, User Behavior and the other related topics.



**3) Maintenance**

Maintenance plan is the establishment of clear guidelines for the maintenance of pilot project. Determining an area maintenance plan is an important aspect for site management. As the maintenance involves various physical elements, it is required to gain the instructions from specific experts. The objectives of maintenance guidance are:

- Advise or provide information about maintenance practices to person(s) or organization(s) in charge to ensure that maintenance of the site is performed well;
- Manage the routine maintenance activities such as cleaning up and maintenance of the facilities/equipment to be performed properly; and
- Monitor the routine maintenance plan and appraise the performance with alternative solutions (if any).

In carrying out maintenance operations, the O&M team is also responsible for doing inventory according to the physical components of the pilot site. It can be used to make a work plan for each inspection and maintenance cycle. Creating a checklist of assets makes it easy to plan in terms of recruitment, funding, and form of maintenance. The following table is an inventory management guideline completed from the pilot project. The O&M team must prepare the details of each part such as the amount of work in accordance with the working capacity and budget allocation. Third parties can be employed if the task is deemed appropriate. In addition, the O&M team is also required to keep tracking of any



damages or losses caused by inappropriate use, which may be used to prepare a repair or replacement plan.

The usage guidance, inventory of quality check, and maintenance guidelines for the pilot project are outlined and elaborated below.

- **Usage Guideline**

**Table 2.4.2 Usage Guidance**

Component	Purpose of Usage	Prohibited Use	Remark
<b>Zone 1: Around Ranong Hospital</b>			
<b>1. Painting</b>			
1.1 Crosswalk	- To assist pedestrians to crossroads for more safety	- Changing part or coloring without allowance is prohibited - Illegal acts, for instance, damaging or stealing, are prohibited	- Any changing for each situation needed to ask the committee - Under the supervision of Tessaban division that takes responsibility
1.2 Parking zone	- To provide visitors a place to park their vehicle temporary	- Changing part or coloring without allowance is prohibited - Illegal acts, for instance, damaging or stealing, are prohibited	- Any changing for each situation needed to ask the committee - Under the supervision of Tessaban division that takes responsibility
1.3 Bus zone	- To increase efficiency of bus stop in terms of picking up and drop off passengers	- Changing part or coloring without allowance is prohibited - Illegal acts, for instance, damaging or stealing, are prohibited	- Any changing for each situation needed to ask the committee - Under the supervision of Tessaban division that takes responsibility
1.4 Vendor zone	- To keep the vendor of sidewalk - To make the vendor area more orderly	- Changing part or coloring without allowance is prohibited - Illegal acts, for instance, damaging or stealing, are prohibited	- Any changing for each situation needed to ask the committee - Under the supervision of Tessaban division that takes responsibility
<b>2. Signage</b>			
2.1 Signage (Bus Stop and Road crossing)	- To communicate with people by information such as traffic sign and information sign	- Destroying signage is prohibited - Illegal acts, for instance, damaging or stealing, are prohibited	- Any changing for each situation needed to ask the committee - Under the supervision of Tessaban division that takes responsibility
<b>3. Furniture</b>			
3.1 Bench	- To support activities such as sit while walking and meeting point	- Destroying furniture is prohibited - Illegal acts, for instance, damaging or stealing, are prohibited	- Any changing for each situation needed to ask the committee - Under the supervision of Tessaban division that takes responsibility
<b>4. Landscape</b>			
4.1 Vertical Garden	- To support activities, such as photography, relaxation, landmark, and gathering area	- Stealing tree pot is prohibited. - Illegal acts, for instance, damaging or stealing, are prohibited	- Any changing for each situation needed to ask the committee

Component	Purpose of Usage	Prohibited Use	Remark
	- To make the area more livable		- Under the supervision of Tessaban division that takes responsibility
<b>5. Infrastructure</b>			
5.1 Lighting (Solar Cell)	- To provide sufficient light for activities surround the area - To improve security and promoting pedestrian safety	- Misusing and Mistype of lighting specifications installation is prohibited - Illegal acts, for instance, damaging or stealing, are prohibited	- Any changing for each situation needed to ask the committee - Under the supervision of Tessaban division that takes responsibility
5.2 Waste sorting garbage	- Keep clean - To improve sanitation behavior - To make the area cleaner attractive	- Dumping or littering on the ground around is prohibited - Illegal acts, for instance, damaging or stealing, are prohibited	- Any changing for each situation needed to ask the committee - Under the supervision of Tessaban division that takes responsibility
<b>Zone 2: Pho Ta Khing</b>			
<b>1, Built</b>			
1.1 Pavement	- To be make the garden more walkable - To encourage people to enjoy outdoor space, such as exercise and do community activities -	- Destroying paver is prohibited - Stealing paver block is prohibited - Illegal acts, for instance, damaging or stealing, are prohibited	- Any changing for each situation needed to ask the committee - Under the supervision of Tessaban division that takes responsibility
1.2 Bamboo fence	- To hang tree pot and make the area more livable	- Destroying the fence is prohibited - Illegal acts, for instance, damaging or stealing, are prohibited	- Any changing for each situation needed to ask the committee - Under the supervision of Tessaban division that takes responsibility
<b>2. Painting</b>			
2.1 Sidewalk	- To promote physical activity while walking, such as jump game	- Changing part or coloring without allowance is prohibited - Illegal acts, for instance, damaging or stealing, are prohibited	- Any changing for each situation needed to ask the committee - Under the supervision of Tessaban division that takes responsibility
2.2 Wall	- To keep it clean or prepared for community activities in the future, such as art wall, wall public theater	- Changing part or coloring without allowance is prohibited - Illegal acts, for instance, damaging or stealing, are prohibited	- Any changing for each situation needed to ask the committee - Under the supervision of Tessaban division that takes responsibility
<b>3. Furniture</b>			
3.1 Bench, Stair seat pad and Bench set with popup library	- To support activities in the garden such as relaxation and picnic	- Destroying furniture is prohibited - Illegal acts, for instance, damaging or stealing, are prohibited	- Any changing for each situation needed to ask the committee - Under the supervision of Tessaban division that takes responsibility
3.2 Giant chess	- To encourage people to enjoy outdoor space	- Stealing chess is prohibited - Illegal acts, for instance, damaging or stealing, are prohibited	- Any changing for each situation needed to ask the committee - Under the supervision of Tessaban division that takes responsibility

Component	Purpose of Usage	Prohibited Use	Remark
<b>4. Landscape</b>			
4.1 Tree	<ul style="list-style-type: none"> <li>- To support activities, such as photography, relaxation, landmark, and gathering area</li> <li>- To make the area more livable</li> </ul>	<ul style="list-style-type: none"> <li>- Stealing tree pot is prohibited</li> <li>- Destroying of tree or lawn is prohibited</li> <li>- Illegal acts, for instance, damaging or stealing, are prohibited</li> </ul>	<ul style="list-style-type: none"> <li>- Any changing for each situation needed to ask the committee</li> <li>- Under the supervision of Tessaban division that takes responsibility</li> </ul>
<b>5. Infrastructure</b>			
5.1 Lighting	<ul style="list-style-type: none"> <li>- To provide sufficient light for using activities at the stage and surround the area</li> <li>- To improve security and promoting pedestrian safety</li> </ul>	<ul style="list-style-type: none"> <li>- Misusing and Mistype of lighting specifications installation is prohibited.</li> <li>- Illegal acts, for instance, damaging or stealing, are prohibited</li> </ul>	<ul style="list-style-type: none"> <li>- Any changing for each situation needed to ask the committee</li> <li>- Under the supervision of Tessaban division that takes responsibility</li> </ul>
5.2 Waste sorting garbage	<ul style="list-style-type: none"> <li>- To improve sanitation behavior</li> <li>- To make the area cleaner attractive</li> </ul>	<ul style="list-style-type: none"> <li>- Dumping or littering on the ground around is prohibited</li> <li>- Illegal acts, for instance, damaging or stealing, are prohibited</li> </ul>	<ul style="list-style-type: none"> <li>- Any changing for each situation needed to ask the committee</li> <li>- Under the supervision of Tessaban division that takes responsibility</li> </ul>

Source: JICA Project Team

- **Quality Check for Construction**

Table 2.4.3 Quality Check for Construction

Component	Quality Checklist	Condition	Timeline	Responsible Org.	Remark
<b>Zone 1: Around Ranong Hospital</b>					
<b>1. Painting</b>					
1.1 Crosswalk	<ul style="list-style-type: none"> <li>- Surface is smooth for walking</li> <li>- Painting is uneven</li> <li>- No crack or any damages</li> </ul>	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	Annually	Division of Public Works, Tessaban Mueang Ranong	N/A
1.2 Parking zone	<ul style="list-style-type: none"> <li>- Painting is uneven</li> <li>- No crack or any damages</li> </ul>	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	Annually	Division of Public Works, Tessaban Mueang Ranong	N/A
1.3 Bus zone	<ul style="list-style-type: none"> <li>- Painting is uneven</li> <li>- No crack or any damages</li> </ul>	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	Annually	Division of Public Works, Tessaban Mueang Ranong	N/A
1.4 Vendor zone	<ul style="list-style-type: none"> <li>- Painting is uneven</li> <li>- No crack or any damages</li> </ul>	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	Annually	Division of Public Works, Tessaban Mueang Ranong	N/A
<b>2. Signage</b>					
2.1 Signage (Bus stop and Road crossing)	<ul style="list-style-type: none"> <li>- Ability for people to see it clearly</li> <li>- No damage</li> <li>- Not lost</li> </ul>	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	Quarterly	Division of Public Works, Tessaban Mueang Ranong	N/A
<b>3. Furniture</b>					
3.1 Bench	<ul style="list-style-type: none"> <li>- Durability and suitability for people to sit</li> <li>- Surface is smooth for sitting</li> </ul>	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	Monthly	Division of Public Works, Tessaban Mueang Ranong	N/A

Component	Quality Checklist	Condition	Timeline	Responsible Org.	Remark
	<ul style="list-style-type: none"> <li>- The setting location does not block the sidewalk</li> <li>- No damage</li> <li>- Not lost</li> </ul>				
<b>4. Landscape</b>					
4. Vertical Garden	<ul style="list-style-type: none"> <li>- Suitable in its size and location</li> <li>- The setting location does not block the sidewalk</li> <li>- No damage</li> <li>- Not lost</li> </ul>	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	Daily	Division of Public Health and Environment, Tessaban Mueang Ranong	N/A
<b>5. Infrastructure</b>					
5.1 Lighting (solar cell)	<ul style="list-style-type: none"> <li>- Install firmly at appropriate place</li> <li>- Can work well</li> <li>- Wiring sealed</li> <li>- No damage</li> <li>- Not lost</li> </ul>	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	Monthly	Division of Public Works, Tessaban Mueang Ranong	N/A
5.2 Waste sorting garbage	<ul style="list-style-type: none"> <li>- Suitable in its size and location</li> <li>- The setting location does not block the sidewalk</li> <li>- No damage</li> <li>- Not lost</li> </ul>	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	Daily	Division of Public Health and Environment, Tessaban Mueang Ranong	N/A
<b>Zone 2: Pho Ta Khing</b>					
<b>1. Built</b>					
1.1 Paver	<ul style="list-style-type: none"> <li>- Surface is smooth for walking</li> <li>- No crack or any damages</li> </ul>	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	Annually	Division of Public Works, Tessaban Mueang Ranong	N/A
1.2 Bamboo fence	<ul style="list-style-type: none"> <li>- Install firmly, not easy to fall down</li> </ul>	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	Annually	Division of Public Works, Tessaban Mueang Ranong	N/A
<b>2. Painting</b>					
2.1 Sidewalk	<ul style="list-style-type: none"> <li>- Painting is uneven</li> <li>- No crack or any damages</li> </ul>	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	Annually	Division of Public Works, Tessaban Mueang Ranong	N/A
2.2 Wall	<ul style="list-style-type: none"> <li>- Painting is uneven</li> <li>- No crack or any damages</li> </ul>	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	Annually	Division of Public Works, Tessaban Mueang Ranong	N/A
<b>3. Furniture</b>					
3.1 Bench, Stair seat pad and Bench set with popup library	<ul style="list-style-type: none"> <li>- Durability and suitability for people to sit</li> <li>- Surface is smooth for sitting</li> <li>- The setting location does not block the sidewalk</li> <li>- No damage</li> <li>- Not lost</li> </ul>	<ul style="list-style-type: none"> <li>• Good</li> <li>• Moderate</li> <li>• Low</li> </ul>	Monthly	Division of Public Works, Tessaban Mueang Ranong	N/A

Component	Quality Checklist	Condition	Timeline	Responsible Org.	Remark
3.2 Giant chess	- Ability to play - No damage - Not lost	• Good • Moderate • Low	Monthly	Division of Public Works, Tessaban Mueang Ranong	N/A
<b>4. Landscape</b>					
4.1 Tree	- Suitable in its size and location - The setting location does not block the sidewalk - No damage - Not lost	• Good • Moderate • Low	Daily	Division of Public Health and Environment, Tessaban Mueang Ranong	N/A
<b>5. Infrastructure</b>					
5.1 Lighting	- Install firmly at appropriate place - Can work well - Wiring sealed - No damage - Not lost	• Good • Moderate • Low	Monthly	Division of Public Works, Tessaban Mueang Ranong	N/A
5.2 Waste sorting	- Suitable in its size and location - The setting location does not block the sidewalk - No damage - Not lost	• Good • Moderate • Low	Daily	Division of Public Health and Environment, Tessaban Mueang Ranong	N/A

Source: JICA Project Team

Remarks: Each item should be quality check by OM team every month with a rating of the conditions and recommendations for action

- Good condition refers to no crack, no damage. The structure can be properly used and no harm for users.
- Moderate condition refers to some cracks and some damage. The structure can be generally used and no harm for users. (This stage should prepare for maintenance).
- Low condition refers to crack and damage that can be harm or possibly harm to users. (This stage should be considered to maintain the quality as soon as possible.)

• **Maintenance Plan**

**Table 2.4.4 Maintenance Plan**

Component	Maintenance	Timeline	Est. Budget	Responsible Org.
<b>Zone 1 Around Ranong Hospital</b>				
<b>1. Painting</b>				
1.1 Crosswalk	- Surface cleaning	Weekly	1,000 Baht	Operate, Maintenance and financial sources by Division of Public Works, Tessaban Mueang Ranong  Monitoring by Community
	- Repainting color	Every 2 years	15,000 Baht	
1.2 Parking zone	- Surface cleaning	Weekly	200 Baht	Operate, Maintenance and financial sources by

Component	Maintenance	Timeline	Est. Budget	Responsible Org.
	- Repainting color	Annually	750 Baht	Division of Public Works, Tessaban Mueang Ranong  Monitoring by Community
1.3 Bus zone	- Surface cleaning	Weekly	200 Baht	Operate, Maintenance and financial sources by Division of Public Works, Tessaban Mueang Ranong  Monitoring by Community
	- Repainting color	Annually	750 Baht	
1.4 Vendor zone	- Surface cleaning	Weekly	200 Baht	Operate, Maintenance and financial sources by Division of Public Works, Tessaban Mueang Ranong  Monitoring by Community
	- Repainting color	Annually	600 Baht	
<b>2. Signage</b>				
2. Signage (Bus stop and road crossing)	- Cleaning and durability checking up	Semi-annually	N/A	Operate, Maintenance and financial sources by Division of Public Works, Tessaban Mueang Ranong  Monitoring by Community
	- Change the light bulb	In case when damage appears	1,950 Baht	
<b>3. Furniture</b>				
3.1 Bench	- -Cleaning and maintenance	Monthly	1,000 Baht	Operate, Maintenance and financial sources by Division of Public Works, Tessaban Mueang Ranong  Monitoring by Community
<b>4. Landscape</b>				
4. Vertical Garden	- Watering	Daily	2,000 Baht	Operate, Maintenance and financial sources by Division of Public Works, Tessaban Mueang Ranong  Monitoring by Community
	- Trimming and decorating tree and remove the leaves on the ground	Weekly		
<b>5. Infrastructure</b>				

<b>Component</b>	<b>Maintenance</b>	<b>Timeline</b>	<b>Est. Budget</b>	<b>Responsible Org.</b>
5.1 Lighting	- Lighting system checking up and maintenance	Monthly	3,000 Baht	Operate, Maintenance and financial sources by Division of Public Works, Tessaban Mueang Ranong
	Change the light bulb	In case when damage appears	900 Baht	Monitoring by Community
5.2 Waste sorting garbage	- Litter Collection	Daily	N/A	Operate, Maintenance and financial sources by Division of Public Health and Environment Tessaban Mueang Ranong
	- Garbage cleaning	Weekly		Monitoring by Community
<b>Zone 2 Pho Ta Khing</b>				
<b>1. Built</b>				
1.1 Paver	- Surface cleaning	Monthly	2,000 Baht	Operate, Maintenance and financial sources by Division of Public Works, Tessaban Mueang Ranong  Monitoring by Community
1.2 Bamboo fence	- Durability checking up	Semi-annually	N/A	Operate, Maintenance and financial sources by Division of Public Works, Tessaban Mueang Ranong  Monitoring by Community
<b>2. Painting</b>				
2.1 Sidewalk	- Surface cleaning	Weekly	200 Baht	Operate, Maintenance and financial sources by Division of Public Works, Tessaban Mueang Ranong
	- Repainting color	Annually	750 Baht	Monitoring by Community
2.2 Wall	- Surface cleaning	Monthly	1,000 Baht	Operate, Maintenance and financial sources by Division of Public Works, Tessaban Mueang Ranong  Monitoring by



Component	Maintenance	Timeline	Est. Budget	Responsible Org.
				Community
<b>3. Furniture</b>				
3.1 Bench, Stair seat pad and Bench set with popup library	- Cleaning and maintenance	Monthly	3,000 Baht	Operate, Maintenance and financial sources by Division of Public Works, Tessaban Mueang Ranong  Monitoring by Community
3.2 Giant chess	- Checking up - Keep it safe after playing	Daily	N/A	Operate, Maintenance and financial sources by Division of Public Health and Environment Tessaban Mueang Ranong  Monitoring by Community
<b>4. Landscape</b>				
4.1 Tree	- Watering	Daily	8,000 Baht	Operate, Maintenance and financial sources by Division of Public Health and Environment Tessaban Mueang Ranong  Monitoring by Community
	- Trimming and decorating tree and remove the leaves on the ground	Weekly		
	- Adding new soil for big trees	Yearly		
<b>5. Infrastructure</b>				
5.1 Lighting	- Lighting system checking up and maintenance	Monthly	5,000 Baht	Operate, Maintenance and financial sources by Division of Public Works, Tessaban Mueang Ranong  Monitoring by Community
	- Change the light bulb	In case when damage appears	900 Baht	
5.2 Waste sorting garbage	- Litter Collection	Daily	N/A	Operate, Maintenance and financial sources by Division of Public Health and Environment Tessaban Mueang Ranong  Monitoring by
	- Garbage cleaning	Weekly		

Component	Maintenance	Timeline	Est. Budget	Responsible Org.
				Community

Remark: Timeline of each component can be adjusted along with quality checklist.

Source: JICA Project Team

- **Recommendations for Maintenance**

#### **Custodial/Housekeeping aspects of routine maintenance**

Another important service in the facility is to ensure that it is clean and functional. This is where custodial and housekeeping services come in. Patrons do not want to come to a facility that is dirty or where simple items are not readily available. As with almost any other service, custodial and housekeeping can be outsourced or kept in-house. The O&M team should make decision whether this service will be in-house which offers more control over keeping the facility clean; however, depending on the size of the facility and the scope of the events, outsourcing may be inevitable. Ultimately, the goal is to provide responsive service to meet the needs of the visitors and the facility, and to enhance the quality of the experience of facility users.

#### **Reports on problems and damages**

All infrastructural problems and damages to facilities and equipment are detrimental to the continued operation of the facility. Shutting down facilities disrupts citizen's use and can be perceived as incompetence on the part of those running the facility. Hence, proper coordination of maintenance and repair is crucial to operation success. In general, all maintenance and repair needs that are discovered by the staff should be communicated to the facility or operations manager responsible for this area and be documented on a maintenance form. In addition to reported maintenance and repair, managing staff should, on a regular basis, conduct an evaluation of all infrastructure and equipment to determine the status of its condition, and organize and coordinate appropriate remedies. Based on the severity of the problem or damage, the remedy will take one of the three ways:

- **Maintenance:** this refers to the work necessary to maintain the facilities and equipment. Maintenance includes periodic or occasional inspection, adjustment, lubrication, cleaning (non-janitorial), painting, replacement of parts, minor repairs, and other actions to prolong service and prevent unscheduled breakdown.
- **Repair:** this refers to restoring damaged or worn-out facilities and equipment, or to a normal operating condition. Repairs are curative, whereas maintenance is preventive. Repairs can be classified as minor or major. Minor repairs are those associated with maintenance activities that do not exceed 1–2 workdays per task. Major repairs are those that exceed 2 workdays per task or are beyond the capability of existing maintenance personnel.
- **Replacement:** this refers to facility and equipment components or systems need to be replaced. It is the exchange or substitution of one fixed asset for another having the capacity to perform the same function. Replacement arises from an asset becoming obsolete, having excessive wear and tear, or being damaged beyond repair.

#### **4) Administration and Promotion of Uses**

Administration and promotion of use aims to perform all the above responsibilities, the administration and promotion of uses (events) can be designed and considered as a supporting mechanism. The following basic roles of administration and promotion of uses are guided as follows:

- **Risk management**

The O&M team should also be proactive in sharing ideas and advice about risk management. Risk management is the process of preventing the possibility of loss from a hazard such as personal injury, property damage, or economic loss. Risk cannot be eliminated from the environment, but with careful planning it can be managed. Appropriate risk management practices are crucial to reduce legal exposure, prevent financial and human loss, protect facility assets, ensure business continuity, and minimize damage to the facility's reputation.

All members of the facility management team—from owners to hourly staff and volunteers—have a duty to act in a prudent manner and a duty of care to provide a reasonably safe environment for users of the facility.

It is important to recognize that from an operational standpoint, the major areas of concern within risk management involve dealing with the following:

- Non-critical injury/illness.
- Critical injury/illness (requiring emergency medical personnel).
- Appropriate use of alarms and warning signals.
- General emergency evacuation procedures.
- Evacuation of physically challenged persons.
- Dealing with: electrical power failure; facility operations management; fire;
- Other natural disasters; Other facility disasters.

- **Annual meeting and plan**

The O&M team should hold usual meeting routine to evaluate the O&M plan and also to formulate activities and events calendar or plan which serves to achieve the set mission. Event planning should incorporate the following concerns (energy and waste management which are outlined in the next section) into the O&M's discussion and provide clear procedures to operate. Also, O&M team should monitor the operation, realize the issues, and find solutions for any problem or concern from the users in order to make a decision for the further improvement.

- **Energy management**

Energy management is not a separate function but rather an activity that spans all aspects of the facility. Some of the traditional energy management measures include investing in energy-efficient equipment. However, electrical consumption control is the responsibility of all involved users of the facility. Examples include lighting in the park being turned off when not in use. Energy costs are among the biggest expenses for the facility. Taking steps to reduce these costs can significantly improve the operation of the facility by increasing

the financial resources available for other areas.

- **Waste management**

Waste management and recycling are one of the most overlooked costs of the facility. While facility's main objective for reducing contribution to the local landfill is to cut costs, the social importance of environmentally friendly operations cannot be understated. Recycling mandates seem to be a trend that is starting to affect every city. The only way to reduce costs related to waste management is to reduce the amount of trash going to landfills, since landfill costs are determined by quantity. Therefore, it is encouraged that the O&M team put forward some mandates on waste management for the facility.

- **Administrative and Event Plan**

Table 2.4.5 provides administrative activities and promotion of use through various proposed events. The purpose of this plan is to develop skills of O&M team, to promote the economic activities, to generate incomes for local people, and to promote the use of pilot project area. To conduct activities smoothly and efficiently, Tessaban can support the operation based on the following actions:

- Prepare a thematic event Terms of Reference (TOR) for an open bidding event.
- Coordinate with subgroups to implement events and activities based on the annual events and activities calendar.
- Formulate an annual event calendar with partners.

**Table 2.4.5 Administrative Activities and Promotion of Events**

Activity or Event Brief	Objective	Responsible Org.	Supporting Org.	Potential Financial Source	Month														
					8	9	10	11	12	1	2	3	4	5	6	7			
<b>Learning, Planning and Monitoring Activities</b>																			
<b>O&amp;M Team Monthly Meeting and Networking</b> The meeting can be held on site. A list of the maintenance (as provided in table 4) will be used to oversee the status and conduct the quality check. The gathering at the park for the meeting can be an opportunity to share ideas and how SFCI should be further implemented. Food and Drink can be hosted by different parties each month. Community can take turn to showcase their products/produce/food/drink.	Review the status of the site maintenance report and approve recommended action sharing plan and integrate efforts to drive SFCI	Tessaban	Community prepares Food and Drink	Tessaban  Private sector to sponsor community to provide local food and drink															
	<b>O&amp;M Team Mid-Year Workshop and Monitoring Progress</b> Tessaban will report on quality check and issues about the site and users. Guest speakers from private, public and communities should be invited to share knowledge: Possible topics: public space management, Energy efficiency management, kids health and how the	Monitor the status and quality of the facility Sharing knowledge to upskill O&M team Review rules and regulations Resolve any conflicts and brainstorm any required rules and regulations, make decisions on ways forward and re-allocating tasks to get the work done.	Tessaban	Community prepares Food and Drink  Other public sector and private sector provides speakers or experts	Tessaban  Private sector to sponsor community to provide local food and drink														

Activity or Event Brief	Objective	Responsible Org.	Supporting Org.	Potential Financial Source	Month														
					8	9	10	11	12	1	2	3	4	5	6	7			
park can help kids grow healthy. Waste management.																			
This gathering is organized as a Luncheon meeting & networking																			
<b>O&amp;M Team Exchange Learning Trip with Other Future Cities:</b> <b>preparing to host Chumphon and other cities in the following year (reciprocal)</b> Plan to host Chumphon O&M Team Prepare site inspection organize a visit and combine O&M team meetings between the two cities. Lunch or Dinner to learn about community products	Update the progress of city development and share O&M experiences	Tessaban	O&M Team	Tessaban Ranong and Tessaban Chumphon															
	Brainstorm the future cities: and share knowledge about how to acquire financial sources.																		
	Conduct a 3 <sup>rd</sup> party quality check of the site																		
	showcase community (coffee, agriculture produces)																		
<b>O&amp;M Team Exchange Learning Trip with Other Future Cities:</b> Contact Chumphon SFCI team to organize a visit and combine O&M team meetings between the two cities.	See above	Tessaban	O&M Team	Tessaban Ranong and Tessaban Chumphon															
<b>Maintenance activities and Event</b>																			
Routine maintenance and quality check (as specified in table 4)	Keep the facility intact	Tessaban	O&M Team	Tessaban															

Activity or Event Brief	Objective	Responsible Org.	Supporting Org.	Potential Financial Source	Month											
					8	9	10	11	12	1	2	3	4	5	6	7
<p><b>Tree Trimming and planting day</b> (<i>can be organized on a regular basis</i>)</p> <p><b>Theme one "Herbs and Health"</b></p> <p><b>Theme two "flowers and the rain"</b></p> <p><b>Theme three "Edible fences"</b></p> <p>Coordinate with sport club, senior club, kids club, youth club at school to gather at the park or the selected site to help trim tree, weeding and plant new trees under the selected themes.</p> <p>Representatives from each club donate plants and give short knowledge about them.</p> <p>School club and senior club draw or paint a signage naming the plants.</p>	<p>Engaging stakeholders and raise awareness of environmental concern</p>	<p>Tessaban</p> <p>Community</p>	<p>Community</p> <p>Private sector and other public sector</p>	<p>Donation of plants by invited sport or recreational clubs</p> <p>All organizations contributing in kind (personnel, time and effort)</p> <p>Private sector sponsor drinks and snacks</p>												
<p><b>Big cleaning day</b></p> <p>(Tessaban has done this in the past and should keep up the good work)</p>	<p>Engaging stakeholders and raise awareness of environmental concern</p>	<p>Tessaban</p>	<p>Tessaban</p> <p>Traffic controller</p> <p>Community</p> <p>O&amp;M Team</p>	<p>Tessaban</p>												
<p><b>Walking street day (car-free day)</b></p> <p>Select an area (small) and announce in advance that on that day that area will be closed and will only allow pedestrians to access the area.</p> <p>Communities, vendor, artists can open a small</p>	<p>Promoting walkable city</p> <p>Keep the street and sidewalk clean up</p>	<p>Community</p> <p>O&amp;M Team</p>	<p>Tessaban</p> <p>Traffic controller</p>	<p>Tessaban</p> <p>Private sectors</p> <p>Communities</p>												



Activity or Event Brief	Objective	Responsible Org.	Supporting Org.	Potential Financial Source	Month													
					8	9	10	11	12	1	2	3	4	5	6	7		
shop with the concept "plastic free"																		
<b>Street -spring clean</b> (Around the street vendor and crossroad around hospital)	Promoting walkable city Keep the street and sidewalk clean up	Public sector Street vendors around the park	Tessaban Traffic controller Community O&M Team	Tessaban														
<b>(Zero) Waste competition</b> Target: street vendors and offer a 1-day workshop on 3R for waste management) and give a certificate to the vendors for the best waste management.	Keep the street clean Promote environmental concern	Tessaban Traffic controller Community O&M Team	Public sector street vendors	Tessaban and private sectors														
<b>Cultural activities and PR Event</b> (details of each event is elaborated in the following section)																		
<b>Fund raising event or CSR</b> (Details are shown as Event Example 1)	To promote the use of the site	O&M Team	Tessaban	Revenue from products sales and donation of 10% from each shop to O&M Team for the management of the site														
<b>Site as an event Venue</b> Letter to invite private sector to propose and organize event and using venue of the pilot project and activities to promote walkable city with a specific theme each year For example "Ranong Cyclist fun day -art and craft in the park" "City Walking Tour: Food Fun Fair activities in the park" "Mini hot spring at POR TA KING: product and	To raise awareness about the multi-functional of the site To access financial source for the O&M activities		Community Private Sector	Donation box can also be open for visitors to the site. Thai Health Promotion Foundation and SCG (CSR project)														

**Final Report, Vol. 2: Model City Projects**

Activity or Event Brief	Objective	Responsible Org.	Supporting Org.	Potential Financial Source	Month													
					8	9	10	11	12	1	2	3	4	5	6	7		
innovation from hot spring showcase"																		
<b>Story of Pho Ta Khing and music in the park</b> (Details are shown as Event Example 2)	To promote the use of the venue	O&M Team Community Tessaban	TAT Schools Senior club	Tessaban TAT														
<b>Bike and Walk Route and Circuit: the hidden tale in Ranong</b> Starting and finishing point at Por Ta King (Details are shown as Event Example 3)	To promote the use of the venue	O&M Team Community Tessaban	TAT Cycling club	Tessaban Thaihealth TAT														
<b>SFCI Champion Award Day</b> (Details are shown as Event Example 4 as a case example of how the event could be organized)	To recognize the contributors and supporters of the O&M and SFCI	O&M Team	Community Public and private sector	Tessaban														

Source: JICA Project Team

### **Event Example 1: Fund-raising event or CSR**

**Project Name:** "Open Space for the Event": POR TA KING as an Event Venue

#### **Objective**

- To promote the use of the site
- To raise awareness about the multi-functional site
- To access funds for O&M activities

#### **Description and planning process**

The O&M team should issue a letter of invitation to prospective event organizers (either public or private organization, or both). The list of potential targets can be provided by local Chamber of Commerce and Tassaban. Letter should be issued by the O&M team to introduce the site and invite them to inspect the site for them to use the site as an event venue. The proposed events and using venue of the pilot project can be divided into 2 categories, which are 1) a specific theme and 2) open themes. The table below provides an initial example of the specific themes and potential targets.

**Table 2.4.6 Themes and Target Organizations**

<b>Theme</b>	<b>Letter Invitation / Confirmation Target</b>
1. "Ranong Cyclist fun day -art and craft in the park"	Bicycle Club Ranong Pracharat RakSamakdee Company
2. "City Walking Tour: Food Fun Fair activities in the park"	Suan Sunandha Rajabhat University, Ranong Campus (Faculty of Tourism)
3. "Mini hot spring at POR TA KING: product and innovation from hot spring showcase"	Tourism Authority of Thailand Pracharat RakSamakdee Company
4 Open thematic events (innovative, creative, and eco-friendly)	Hotels Members of the chamber of commerce Tourism council Hot spring association Schools and Vocational colleges

Source: JICA Project Team

Terms of Reference (TOR) should specify location and regulation of the use with a specific requirement for a volunteer donation or contribution for the maintenance of the site.

Proposal from invited target will be reviewed by the O&M team and grant an approval for the use of the park for suitable events. This advanced booking will enable better management of the promotion of use and the whole event will be fully organized by the targeted organization. The O&M team only monitors and reviews the compliance with the rules and regulations.

#### **Potential Financing Sources:**

Revenue from volunteer donation from the event organizer, product sales, and donation of 10% from each shop to the O&M Team for the management of the site.

Donation boxes can also be open for visitors to the site.



Source: JICA Project Team

**Figure 2.4.5 Pracharat Raksamakee Company Fair in Ranong**

### **Event Example 2: Story of Ranong and Music in the Park**

**Name of Event:** Story of Ranong and Music in the Park

#### **Objectives**

- To provide a space to learn about local history and wisdom
- To create an exchange of understanding about local values and local assets
- To promote quality time and to build family bonding and happiness

#### **Description and Planning Process**

A proposal for the project can be submitted to Thai Health for a seed funding source.

The focus of the event is to promote health and wellbeing of local people through relationship building amongst family members and to learn to appreciate local valuable assets.

- Create a list of potential local storytellers who have been living in Ranong.
- Invite them as a panel to share about their story when they were young how Ranong was like. What was the belief about Por Ta King from their direct experiences?
- Invite musician (a small band or just a guitar) to play some music that relates to life and the city.
- Share some homecooked meals.
- Play games

- Share a list of books which should be read and gradually form Ranong book club to gather every weekend.

O&M Team and the Tessaban should be the main initiator to do PR activities to promote the event in collaboration with Chamber of Commerce and TAT. The ambience will be relaxing in the park and can be organized over the weekend. This event can be organized once a month; book sharing on digital platform can be gradually developed. The image and ambience of event is shown in the figure below.



Source: JICA Project Team

**Figure 2.4.6 Music and Book Club Event in the Park**

**Table 2.4.7 Planning Process**

Task	Responsible Organization
<b>Pre-event planning</b> Proposal preparation Invite storytellers Sponsorship plan Zone /shop designation and setup and	O&M Team Vendor and participating shops/community members Tessaban is a secretariat team

decoration Small stage performance Parking and Traffic flow and controller Special Bicycle zone Permit to use the movable furniture and bookshelf and chess game Environmental concerns and management Safety	
<b>Actual event day</b> Opening and closing Information Centre Stage management (if there is a performance, set timetable and queue) Health and first aid Volunteer safety team	O&M team will allocate each task to a suitable organization and form a community member to be a volunteer Vendor and participating shops/food providers Tessaban will be the coordinating body
<b>Post event</b> Cleaning Rechecking site for damages Evaluation of the site and the event	Vendor and participating shops Community members Tessaban
<b>Potential partner and funding source</b>	Thai Health National Innovation Agency TAT

Source: JICA Project Team

**Event Example 3: Walking Route and Circuit: the hidden tale in Ranong** (Starting and finishing point at Por Ta King)

**Name of Event:** Walking Route and Circuit: the hidden tale in Ranong (Starting and finishing point at Por Ta King)

### **Objective**

- To engage residents in a healthy living promotion/preventive measures
- To promote tourism and walking trail connectivity
- To engage Tessaban with communities (opportunities to have feedbacks)

### **Description and Planning Process**

Contact bicycle club and Tourism Authority of Thailand to propose the ideas. This gathering can be for a small group of people first. A combination of bike and walk will help participants explore the city by foot and will provide more opportunities for people to appreciate walkable city. A combination of bike and walk can be optional, some may prefer to walk only.

The O&M team should draw a possible route to have a starting point and finishing point at Por Ta King, creating a list of different loops for the tour. The walk circuit can be short and could range from 15-30 mins to 1 hour. There is Thailand Walking and Cycling Institute Foundation who could be interested in becoming partner for this initiative. (<http://www.ibikeiwalk.org/aboutus/U7T>) The following images are to provide some inspirations.



**Table 2.4.8 Weekend Event**

<b>Task</b>	<b>Responsible Organization</b>
<b>Pre-event planning</b> Proposal and promotion preparation Invite bicycle club, school, or any sport club Sponsorship plan setup a walking route and decoration along the route Guiding team and map Small stage set up for the start and finishing Parking and Traffic flow and controller Special Bicycle zone Permit to use the movable furniture and bookshelf and chess game Environmental concerns and waste management Safety	O&M Team Vendor (mainly for Drinks) and participating shops Community members (being a walking guide tour) Tessaban is a secretariat team
<b>Actual event day</b> Opening and closing Information Centre Stage management (if there is a performance, set timetable and queue) Health and first aid Volunteer safety and guiding team	O&M team will allocate each task to a suitable organization and form a community member to be a volunteer Vendor and participating shops/food drink providers Tessaban will be the coordinating body
<b>Post event</b> Cleaning Rechecking site for damages Evaluation of the site and the event	Vendor and participating shops Community members Tessaban
<b>Potential partner and funding source</b>	Thailand Walking and Cycling Institute Foundation Thai Health National Innovation Agency TAT

Source: JICA Project Team



Source: JICA Project Team

**Figure 2.4.7 Bike and Walk Event in the Park**



#### **Example 4: Event: SFCI Champion: Congratulations**

**Name of the event:** SFCI Champion: the future is in your hands

**Objectives:**

- To recognize the committed individual who contribute to the success of the SFCI project.
- To embrace a spoke-person as “Ambassador” who has engaged in the entire process of the initiatives
- To celebrate and advocate that the success of the future city depending on “people”

**Description and process of the event**

Nomination of the champions and final selected champions will be contacted to compile a short profile. This profile will be shared on website, SFCI Facebook page and Tessaban’s communication channel. A press release will be provided to the local media network via Tessaban and local stakeholders.

A recorded live presentation of the token of appreciation (award) while meeting champion on a “reality show” mood and tone. The VDO of all champions will be compiled to a short VDO with a short reflection of their involvement with the initiative and their view for the future. This VDO will be used as a testimony of the project.

SFCI Champion is nominated based on the following criteria:

- Understand the concept of SFCI
- Involve extensively in the entire process
- Play a significant leading part regardless of their rankings or positions
- Actively engage in the development of the project

**Profile:** a short profile of the Champion with a quote, addressing how the champion sees the future of the city and the reflection on the initiative

**Symbolic token of appreciation**

A brooch (a pin) and a certificate

The design of the brooch will be in AI format and can be re-produced by the appointed O&M team in the future. The design of the certificate is showed below and can be re-printed in the future.



Source: JICA Project Team

**Figure 2.4.8 SFCI Champion Pins**



Source: JICA Project Team

**Figure 2.4.9 SFCI Champion Certificate**

## **2.5 Lessons Learned**

The Sustainable Walkable City concept is a global goal for cities. The concept promotes the wellbeing of people living in the city by walking to places. It is also an important part for keeping the city to be livable. Bustling conductive sidewalks and spaces encourage people to spend more time outside and having more interactions, which helps economy recovering. And it also answers in terms of saving energy, preserving the environment, and solving traffic problems.

Ranong is one of the cities that is suited to be developed as a walkable city due to its contexts in many dimensions. The pilot project illustrated the walkable route connecting to many attractions located in Tessaban area. Promotion of walking will not only provide good health to people, but also reduce energy consumption and pollution. It is perfectly compatible with the city's vision aiming to be developed toward health tourism city.

Tessaban Mueang Ranong has learned in entire course of SFCI model city project, from the planning processes for formulating the SFC Plan to the process of the pilot project implementation. There are some key successes that Tessaban noticed after the project completion. Firstly, public participation is one of the key successes for the project implementation. All the processes had been done by participations of stakeholders including public, private, and community sectors in the local area. Many of public, private, or community representatives from many organizations were elected to be the PT members and/or PPT members who are the witnesses and collaboratively decide on the direction of Ranong's development under the SFC Plan and selection of the pilot project that are supported from JICA. The ideas gathered from every perspective particularly local people's point of view were significant. It is because Tessaban can truly proceed the project in accordance with the people's demands.

The Tessabans network with many organizations and community people has somehow slowly established through the planning steps. The ideas and plans that were shared by many organizations show their interests in some projects. Therefore, it is a good opportunity for Tessaban to match their interests with those who has the common vision for collaborative project in the future. Another key success that the Tessaban has realized is human resources. It is really an important component to drive and complete one project that represents a concrete output. Tessaban staff and people working in the pilot project have to understand the process and the development goal. The team consisting of active and knowledgeable members will surely archive the development goal. Although the Tessaban has many potential staff and networking, the roles and responsibility of each organization should be cleared to avoid duplicating tasks and workplans.

On the other hand, there were some limitations that Tessaban Mueang Ranong had faced while working for the pilot project. Change of the administration team could cause delays on the project because each team may have the different point of view for the city development. Even though other cities may also face this kind of situation, the clear plans that are suitable for the vision and provincial development directions are definitely able to continue for people's well-being with some adaptations. Moreover, the situation of COVID-19 caused difficulties for meetings and constructions. However, an unexpected

circumstance like COVID-19 provided lessons on how to adapt the existing plan to be able to smoothly deal with that challenge. The city development has been continuously changed from time to time depending on its contexts and situation. It means that Tessabans have to be ready for the changes and adaptations for every kind of obstacles.

Even though Tessaban Mueang Ranong found that its planning processes are quite hard to understand and implement at the beginning, the results and experiences gained from this project are worthy and useful for the Tessaban to initiate the new project by themselves.

### **Way forward**

The O&M will be one of the tools for further development and to implement several projects under the SFC Plan. The O&M team will not only be established for managing and monitoring the pilot project sites on Kamlangsap road to prohibit from unmanaged site, but also helping to promote the usage and finding potential financial sources. Holding an event is one kind of walkability development promotion.

The Tessaban is willing to keep continuing the project toward the sustainable development for the city and ensuring that the project will be appropriately disseminated to the other cities. The pilot project is just an example showing the outcome of the sustainable development formulated from public participation. Since the pilot project in Tessaban Mueang Ranong will connect with the canal walkway and hot spring development project of DPT as well as the Tessaban's road improvement project, this road will definitely become an outstanding walkability route. Other cities that are interested in walkable city can visit Tessaban Mueang Ranong and learn from the Tessaban as a successful case study.

### **3. Monitoring of the First Phase Model Cities**

#### **3.1 Outline of Monitoring Activities**

##### **3.1.1 Overview of SFCI Activities in First Phase Model Cities**

The success of the SFCI depended on its effectiveness in supporting local governments ascertain the positive changes brought about by sustainable urban development. In implementing the SFCI, model cities prepared SFC Plans to drive the development together with multisectoral agencies. Emphasizing a national government-guided and local government-driven mechanism, the SFC Plans connected community-level stakeholders with national-level partners. The plans were prepared to not only meet local demand but also link local initiatives with national development direction.

Through the planning approach under the SFCI, local governments and stakeholders demonstrated their awareness of urban development projects, while relevant agencies realized the needs and issues in local cities. Accordingly, the Tassaban could gain both technical and financial support. Additionally, this process helped the cities and relevant organizations to avoid an unintegrated and fragmented urban development policy.

In the first phase of the SFCI, there were six (6) model cities, comprising of Tassaban Nakhon Chiang Rai, Tassaban Nakhon Khon Kaen, Tassaban Mueang Krabi, Tassaban Mueang Nan, Tassaban Mueang Phanat Nikhom, and Tassaban Nakhon Phitsanulok. The activities of the model cities in the first phase took two (2) years, starting from 2017 to 2018. The key outputs of SFCI in the first phase were the respective SFC Plans of the six cities. SFC Plans aimed to develop necessary collaborations with relevant sectors from both national and local government. To materialize the plans in the short term, they were turned into five-year action plans. Another output was the JICA pilot project, the implementation of which functioned as a showcase to initiate further actions.

The six model tassabans integrated the projects under their respective action plans into their LSDPs. The LSDPs are potential plans reflecting a tassaban's development direction. Projects beyond tassabans' power and authority were mostly proposed for inclusion to the provincial development plans and the provincial cluster plans. To ensure support from other agencies, the Tassabans scheduled projects into several phases and proceeded with the short-term implementation by themselves. Once the projects showed outstanding outcomes, the tassabans planned to pursue financial support from other related organizations.

Through the SFCI, a remarkable outcome was the improved capacity of local governments, especially in planning and preparing concrete plans that were aligned with the national development direction. By implementing the participatory process and conducting meetings under the SFCI, the capacity of local government staff to encourage public participation improved. Even though the six model cities had experiences of public consultations with local communities and the public even before they started SFCI model city project, the SFCI allowed them to involve wide-ranging stakeholders, including the private sector.

Another success is the policy advocacy activities. Particularly, the meetings with related government officials at both central and local levels provided direction and more opportunities for the six tessabans to propose their plans and share their motivations to develop their respective cities. Hence, the tessabans gained useful recommendations while government agencies were able to provide appropriate guidance and support for actual project implementation.

The experiences of local cities in Japan were also essential to motivate the six model tessabans. The ideas from Japan were adjusted to suit the six tessabans' situation, opening a new direction for the cities and giving them a chance to show their creativity.

While six model tessabans gained effective lessons and outcomes from the SFCI, taking into account that the six model tessabans have several constraints in terms of budget, personnel, or regulations, the government should allocate more resources to continually support local cities' urban development by providing guidance on development direction, allocating bigger budgets, and establishing a legal framework for local governments at different levels. In addition, the COVID-19 pandemic has delayed the implementation of several projects. More collaboration in public health is needed to secure people's health and well-being in terms of the physical, emotional, social, spiritual, and intellectual aspects. The advice and direction from government are essential for local governments to adopt a new normal. This not only presents in the daily life but is also reflected in the process of approval, construction, budget allocation, and meetings.

To ensure the continuity of the SFCI, monitoring and evaluating the first phase model cities were taken annually. This chapter thus focuses on the progress of the SFC Plans, the status of pilot project implementation, and the key successes of and challenges faced by the first phase model cities. The SFC Plans reflected the motivation of the six tessabans and the collaboration among relevant agencies to propose the projects to the national or provincial levels. Monitoring the status of pilot projects aimed to examine the impacts of the projects on related stakeholders.

### 3.1.2 Outputs of the First Model Cities

Each of the SFCI model cities produced an SFC Plan and an action plan for the selected SFC program, as well as implemented a pilot project, which are summarized in Table 3.1.1.

**Table 3.1.1 SFC Visions, Strategies, Programs, and Pilot Projects  
of First Phase Model Cities**

Tessaban	SFC Vision and Strategy	SFC Program	Relevance to SFC Concept	JICA Pilot Project
Chiang Rai	<b>Vision: Chiang Rai, City of Happiness for All</b> Strategy 1: Infrastructure System Development for Safety in Life and Property Strategy 2: Generation of New Value by the Interaction of All Ages Strategy 3: Development of Health Service for All Ages	Generation of New Value by the Interaction of All Ages	4,5	The Project for Promoting Interactions among All Ages through Active Learning
Khon Kaen	<b>Vision: Make the City Global, Create</b>	Strategy 4:	3,4,5	Public

	<p><b><u>a Happy Society” and “Smart City”</u></b>  Strategy 1: Enhance “Centricity “in Isan  Strategy 2: Smart and yet Traditional Urban Renewal  Strategy 3: Green and Quality Amenity City  Strategy 4: Beyond car-oriented development  Strategy 5: Sustainable Urban Growth with Nature  Strategy 6: Design for All  Strategy 7: Safe, Secured and Quality Living Environment</p>	Beyond car-oriented development		Transport Promotion
Krabi	<p><b><u>Vision: To make Krabi City as Art and Culture City with Tourism</u></b>  Strategy 1: Conservation &amp; promotion of environmental and tourism resources program  Strategy 2: Conservation &amp; promotion of cultural and tourism resources  Strategy 3: Promotion of Community-based Tourism (CBT)</p>	Enhancement on Dissemination of Andaman Culture	1,2,5	The Project for Improvement of Andaman Cultural Center
Nan	<p><b><u>Vision: Nan, The Happiness and Living Old Town</u></b>  Strategy 1: Revitalization of Value of Nan’s Existing Cultures and Traditions  Strategy 2: Improve the quality of life in Nan’s style  Strategy 3: Improve &amp; Conserve the Quality of Environment</p>	Cross-cutting Project of All 3 Strategies	1,2,3,4,5	Experience Nan Live Museum along the Bicycle Route
Phanat Nikhom	<p><b><u>Vision: Livable City</u></b>  Strategy 1: Strengthen Phanat Nikhom as urban service center  Strategy 2: Improve livability in Multi-generation  Strategy 3: Utilize local resources for uniqueness as Phanat Nikhom</p>	Provision of Urban Services for Various Generation and Their Lives in Comfort	4	Project for Introducing Universal Design in Phanat Nikhom
Phitsanulok	<p><b><u>Vision: Central City with nice landscape, Happy People</u></b>  Strategy 1: Encouragement of next leading business  Strategy 2: Improvement of Naa Yuu (sustainability) and Local Pride for All generations  Strategy 3: Provision of Infrastructure Utilities for Safety and Sufficient Living Environment</p>	Preparation for Aged Society	4	The Pilot Zone for Creating Sustainable Ageing Society

Remarks: SFC concept includes 1. Self-sustaining, competitive city 2. Attractive and distinctive identity 3. Eco-friendly and resilient city 4. Safe, secure, and inclusive city 5. Civic pride for future generations.  
Source: JICA Project Team

Reflecting the SFC concept, the cities developed SFC Plans based on their respective focuses. The preparation of the SFC Plans was supported by local consultants and the JICA Project Team. JICA provided financial support to initiate the pilot projects, which were tangible outputs that could be utilized to gain further support and to complete the other related projects. The brief profiles of each model city’s pilot project are summarized in the table below.



Table 3.1.2 Pilot Projects of the First Phase Model Cities

Tessaban	Basic Information		Partner Organization
	Duration	Detail	
Chiang Rai	2017–2018	University of Third Ages (U3A)-Training Course	Chiang Rai Rajaphat University
		Doi Saken Improvement	
		Eco-Tourism and Community-based Tourism in Doi Saken	
Khon Kaen	2017–2018	Public Transportation Promotion	Khon Kaen University SMART Mobility Committee
Krabi	2017–2018	Enhanced Promotion of the Andaman Culture	Perfect Link Consulting Group
Nan	2017–2018	Promotion of Cultural Tourism along Bicycle Routes	TRF and Chiang Mai University
		Lighting System to Promote Night-time Cultural Tourism in Nan Old Town	Chulalongkorn University
		Comprehensive Solid Waste Management Program	TEI
Phanat Nikhom	2017–2018	Public Park Renovation Using Universal Design Principles	King Mongkut's Institute of Technology Ladkrabang
Phitsanulok	2017–2018	Preparation for a Sustainable Aging Society	Naresuan University

Source: JICA Project Team

The action plans and the JICA pilot projects were monitored to evaluate their progress as a reflection of the overall SFC Plan and its vision.

### **3.1.3 Monitoring Activities**

Monitoring activities were conducted annually for three (3) years, i.e., in 2019, 2020, and 2021. The purpose of monitoring is to evaluate the appropriateness, effectiveness, value of programs and projects under the SFCI and impacts in the specific contexts, as well as the experiences gained after completing the SFCI model city project. Also, it aimed to translate the experiences and lessons obtained from SFCI model city project into key successes and challenges.

To achieve the purpose, monitoring activities assessed the progress of the SFC Plan, the status of pilot projects, and the lessons learned by each model city. The objectives of each output are described below and on succeeding pages.

#### **(1) Progress of SFC Plans**

- Evaluate the progress of the SFC action plan, whether it had been implemented or not.
- Identify the implementation body, including potential plans, and financial support in each project as a part of an integrated policy.
- Identify programmatic fine-tunes, reorientation, and future planning to proceed with the SFC plan and utilize the pilot projects.
- Identify the key successes, challenges, and constraints that may delay projects.

#### **(2) Status of Pilot Projects**

- Evaluate the impacts of the project on related stakeholders and its collaborations.
- Assess the operations and management.
- Identify the utilization of the pilot projects and future direction.

#### **(3) Lessons Learned**

- Identify the key successes and challenges.
- Identify necessary activities in the SFCI process which need to be promoted and disseminated to other cities.

Considering that the tassabans are the key actor to utilize the SFC Plan and to maintain the quality of construction, monitoring activities have been mainly carried out by updating monitoring sheets, interviews, and site visits.

The work plan for monitoring activities is shown in Table 3.1.3.

**Table 3.1.3 Monitoring Activities of the First Phase Model Cities**

Phase	First Monitoring				Second Monitoring				Final Monitoring			
Year	2019				2020				2021			
Quarter	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Chiang Rai		6/10					7/29	8/29				
Khon Kaen		6/11					8/5	8/5				
Krabi		6/21					7/15	7/15				
Nan		6/7					7/8	8/3				
Phanat Nihom			7/22				7/20	8/19				
Phitsanulok			7/2				7/22	7/24				
Overall Act.				11/27							7/21	End
Note: Due to COVID-19 prevention measure, the site visit in 2021 was prohibited. Therefore, the final monitoring activity was conducted by sending the monitoring sheet to Tessaban.									<b>Legends</b>			
										Site visit and Interview		
										Monitoring Sheets		
										NESDC		
										Plenary Workshop		
										End of SFC Projects		

Source: JICA Project Team

The first monitoring activities were conducted in the middle of 2019 aimed at screening, examining, and updating the project activities to provide further support and direction in terms of connecting their SFC Plan to the relevant government especially at the national level. After the first monitoring activities, the tessabans also reported their situations and plans with the national government through the plenary workshop held in the end of 2019.

The second monitoring activities were done in the middle of 2020. In the face of COVID-19 pandemic, the second monitoring aimed to examine the impact of COVID-19; the tessabans' response to COVID-19 and other urban issues; and adoption of the outputs of SFCI into the COVID-19 situation. In the second year of monitoring, the outcomes and experiences under the SFCI were more focused. Since this activity was conducted together with the NESDC, the six tessabans gained clearer direction from the national government, and the NESDC recognized the outputs of the model cities, particularly reflected in the provincial cluster plan.

The final monitoring activity was implemented at the final stage of the TFCP i.e., in the middle of 2021. In addition to the SFCI outputs, the final monitoring emphasized the experiences under the SFCI not only to evaluate the SFCI mechanism and concept but also to disseminate the experiences to other local cities in Thailand. Due to COVID-19 prevention measures, the final monitoring activity was conducted with the use of monitoring sheets. The six tessabans presented their experiences to the national government in a plenary workshop.

## **3.2 Tessaban Nakhon Chiang Rai**

### **3.2.1 Overview and the SFC Plan of Tessaban Nakhon Chiang Rai**

#### **1) Overview of Tessaban Nakhon Chiang Rai**

Tessaban Nakhon Chiang Rai is in the northernmost part of Thailand, bordering Lao PDR and Myanmar. It is an economic, political, tourism, and service center in the region. To emphasize its regional importance in cluster development, Chiang Rai is designated as the core of the Upper North Cluster 2.

Tessaban Nakhon Chiang Rai is the economic and service center of its province. There are two (2) major industries in Tessaban Nakhon Chiang Rai, i.e., agriculture and tourism. The Tessaban is a distribution center for agricultural products, a commercial center, and center for service industry. Meanwhile, the tourism in the city center has become more popular. With the increasing number of tourists, the Tessaban has continually developed their own attractions, especially religious art and architecture.

The city has offered not only job opportunities but also education. There are many private and provincial pre-schools, kindergartens, primary, middle, and secondary schools within Tessaban Nakhon Chiang Rai. Meanwhile, Chiang Rai urban area is a hub for higher education in the upper northern Thailand. With well-developed educational facilities, the Tessaban has attracted a large number of children and students.

However, the population of Tessaban Nakhon Chiang Rai had become stagnant. Despite attracting both workers and students, most of the population tended to commute to the city center instead of living in the city or becoming a registered resident. Consequently, the number of unregistered population keeps increasing while that of the urban area keeps expanding. Besides the decline of its population, the ageing society has become a new challenge for the city. The percentage of aging people is around 18%, which is almost the same as the national average.

The environmental quality of Tessaban Nakhon Chiang Rai is good. However, new urban developments have extensively transformed the suburban area. To manage urban growth properly, it is necessary to revise and expand the city plan to avoid environmental degradation and urban sprawl.

#### **2) SFC Plan for Tessaban Nakhon Chiang Rai**

In its 2015 LSDP, Tessaban Nakhon Chiang Rai shared a vision of “Chiang Rai, Livable City, City of Happiness” with the following strategies: (1) Quality of Life; (2) Infrastructure and Public Service; (3) Human Resources Development; (4) Economic, Social and Administration Development; and (5) Natural Resources and Environmental Conservation.

Tessaban Nakhon Chiang Rai has a strong economic base and is still a growing city. From the viewpoint of urban sustainability, it is important to take long-term actions to get ready for the expected changes in the future. Therefore, in the SFC Plan, the Tessaban has shared its vision of “Chiang Rai, City of Happiness for All”. The following strategy had been determined to promote the sustainability of Chiang Rai.

**SFC Vision:** “Chiang Rai, City of Happiness for all”

Strategy 1: Infrastructure System Development for the Safety of Life and Property

Strategy 2: Generation of New Value by the Interaction of All Ages

Strategy 3: Development of Health Service for the People from All Age Groups

Based on the experiences from the Japan Study Tour, the case study of “Share Kanazawa” inspired the Tessaban in the selection of its SFC program. To tackle the challenges of a decreasing population and an ageing society, Strategy 2: Generation of New Value by the Interaction of All Ages was selected. This program contains two objectives: first is to enhance all generations values by providing interactive spaces for multigenerational interaction, and second is to promote human development and capacity building by providing educational opportunities.

Under the selected strategy, the PT selected the “Project for Promoting Interaction among People of All Ages through Active Learning” which combined the University of Third Ages (U3A), Doi Saken community, and the sufficiency economy philosophy and carried out with the strong initiative of Tessaban Nakhon Chiang Rai.

The Project for Promoting Interactions among the All Ages through Active Learning has four (4) components, comprising Component 1: Active Learning Courses for Elderly People at U3A, Component 2: Camp Program for Students at Doi Saken, Component 3: Organic Vegetation Training for Community People at communities surrounding Doi Saken, and Component 4: Tourism Spot/ Program at Doi Saken.

The details of the SFC program and the JICA pilot project are shown in Table 3.2.1.

**Table 3.2.1 Selection of SFC Program for Tessaban Nakhon Chiang Rai**

SFC Program	<p><b>Generation of New Value by the Interaction of All Ages</b></p> <ul style="list-style-type: none"> <li>• To provide the opportunities to encounter various people               <ul style="list-style-type: none"> <li>- Sister City Development</li> <li>- Create the places to interact all generations at Doi Saken</li> </ul> </li> <li>• To provide educational opportunities for capacity development               <ul style="list-style-type: none"> <li>- University of Third Ages (U3A)</li> <li>- Digital education for life-long learning</li> <li>- Promotion of Sufficiency Economy Philosophy</li> </ul> </li> </ul>
JICA Pilot Project	<p><b>The Project for Promoting Interactions among the All Ages through Active Learning</b></p> <ul style="list-style-type: none"> <li>• Component 1: Active Learning Courses for Elderly People at U3A</li> <li>• Component 2: Camp Program for Students</li> <li>• Component 3: Organic Vegetation Training for Community People</li> <li>• Component 4: Tourism Spot/ Program at Doi Saken</li> </ul>
Action Plan (2018–2022)	<p><b>“Development of Doi Saken Community Area to be a Learning Source and New Tourism Spot: Kiri Chai Yama”</b></p>
Expected Output of SFC Program	<ul style="list-style-type: none"> <li>• Active learning can make people develop their skills.</li> <li>• Platform for interaction among all ages, which can develop strong communities.</li> <li>• Learnings and interactions can make people have more confidence of local culture, products, and identity.</li> </ul>

Long-term Impact of SFC Plan	<ul style="list-style-type: none"> <li>To promote local culture and products, and to identify Chiang Rai's new values through interaction among all ages.</li> <li>Enhanced sustainability of Chiang Rai in terms of sustained population and tourism promotion.</li> </ul>
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Source: JICA Project Team

The Doi Saken was used as the target area for the JICA pilot project, which aimed to provide multigenerational space for all. Doi Saken was developed to promote activities, interactions, and experiences for various age groups. Hence, a five-year action plan was prepared to support the development of Doi Saken. The main purpose of this plan was to build wealth, stability, and sustainability. The philosophy of sufficiency economy was applied as a guide for promoting people's quality of life and creating sustainable careers for local people.

Doi Saken is a small community forest in the Tessaban with fertile lands, rich biodiversity and high potential to be developed as an active learning spot. As a multigenerational learning space, students use this area to learn its biodiversity, while elderly persons and the community exchange their experiences at an open-air learning set-up. Tessaban Nakhon Chiang Rai expects to achieve its vision of "Chiang Rai, City of Happiness for All" by encouraging intergenerational activities among senior citizens, students, communities, and tourists in the Doi Saken Area.

The action plan, entitled "**Development of Doi Saken Community Area to be a Learning Source and New Tourism Spot: Kiri Chai Yama,**" was prepared to support Doi Saken development. As the action plan aimed at transforming Doi Saken into a learning source and new tourism spot, it focused on the development of safe infrastructure and the promotion of interaction among people from all ages to create new value to Doi Saken. The objectives of this action plan are:

- Develop Doi Saken forest as an eco-tourism spot.
- Improve the quality of life of households in the community, which engages in agriculture, based on the philosophy of sufficiency economy and the concept of CBT.
- Develop Ban Thoong Mon Derm School as a learning center for people of all ages.

The projects in this action plan are elaborated in Table 3.2.2.

**Table 3.2.2 Action Plan on the Development of Doi Saken Community Area to be a Learning Source and New Tourism Spot: Kiri Chai Yama**

No.	Name of Project	Duration	Budget	Organization
1	Construction of Sky Walk	2019	15,000,000	Tessaban, Rajamangala University
2	Water system renovation	2018	250,000	Tessaban
3	Electric and light renovation	2018	105,000	Tessaban
4	Installation of CCTV system	2018	200,000	Tessaban
5	To proceed sign of learning source	2018	450,000	Tessaban
6	To improve landscape to be appropriate on Doi Saken.	2018	500,000	Tessaban
7	Construction of buildings supporting the use of children, youth, people, and elderly.	2019	22,000,000	Tessaban

No.	Name of Project	Duration	Budget	Organization
8	Camping	2018-2022	2,500,000	Tessaban, Educational Institutions
9	Hiking	2018-2022	500,000	Tessaban, Municipal School
10	To organize CBT for touching lifestyle following sufficient economy philosophy.	2018-2022	1,000,000	Tessaban, Chiang Rai Rajabhat University
11	To offer meeting rooms, seminars, and recreational activities arrangement.	2018-2022	250,000	Tessaban
12	Sport field improvement	2019	300,000	Tessaban

Source: JICA Project Team

By maximizing the value of existing resources in the surrounding community, the Doi Saken will be used for short and long-term camping activities and CBT spots wherein tourists can adapt the local lifestyle following the philosophy of sufficiency economy. These projects were expected to generate income for members of the community and its surrounding areas and improve the residents' quality of life.

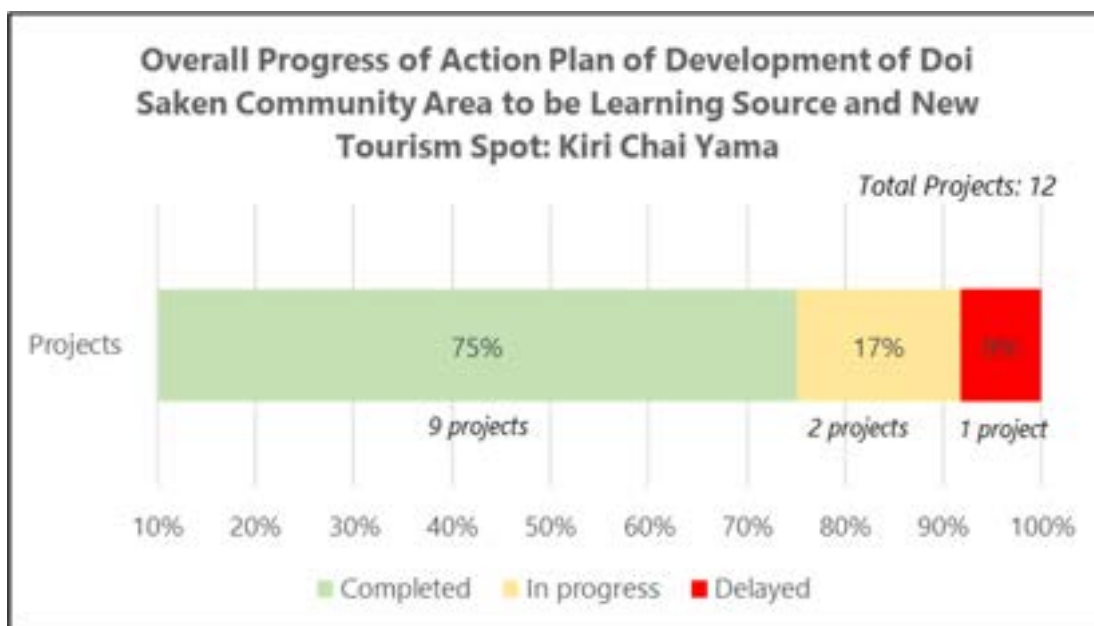
### 3.2.2 Progress of the SFC Plan

In this section, the progress of the Kiri Chai Yama action plan is examined. The factors that moved the action plan forward or otherwise are identified, namely the potential budget and relevant organizations. The causes of project delay and the challenges faced by the Tessaban are explained. The reorientation and additional projects to complete the Doi Saken's development are also highlighted.

The action plan on the "Development of Doi Saken Community Area to be a Learning Source and New Tourism Spot: Kiri Chai Yama" was actively pushed by Tessaban Nakhon Chiang Rai. To complete the action plan, it included most of the projects in the LSDP which allows the Tessaban to request for annual budgets to implement its projects.

The action plan consists of 12 projects. As shown in Figure 3.2.1, Tessaban has completed about 75% of the action plan, 17% of the projects are under construction, while the rest (8%) has been delayed.





Source: JICA Project Team

**Figure 3.2.1 Overall Progress of the Chiang Rai’s SFC Plan**

Nine (9) projects in the Doi Saken community area had been completed. The utilities to support activities in Doi Saken, such as the water system (project 2), electric and lighting renovation (project 3), and CCTV installation (project 4), were completed in 2018. Landscape improvement and signage installation have been continually implemented to provide a good environment and learning space. At the top of Doi Saken, the Phra That Doi Saken was renovated, while information and directory signage were installed along the route in Doi Saken. At the same time, the Tessaban has consistently promoted multigenerational activities in the site. Camping and hiking have been advocated with the collaboration of educational institutions at both the secondary and tertiary levels. Moreover, the meeting room was renovated into a learning center and allowed for use by the elderly. To emphasize tourism, the Tessaban has organized familiarization trips for the communities surrounding Doi Saken to introduce the local lifestyle.

These completed projects were successful due to the Tessaban’s determination. The Tessaban spent its own budget to support and implement the projects which were integrated into its LSDP and public expenditure plan. Even though many projects have been completed, the Tessaban has continued on improving and implementing these projects to sustain the development of the Doi Saken community. The budget for each project was secured for five years at least, following the period of the LSDP. With this financial source, the Tessaban is the key actor to implement projects while the communities, educational institutions, and elderly persons provide support, especially in designing activities and providing advice.

There are two (2) ongoing projects, namely: (i) the Construction of Skywalk Project (project 1) and (ii) Sport Field Improvement Project (project 12). The skywalk project at Doi Saken is expected to be the new attraction in the Doi Saken, pulling in visitors to the city. By doing this, Doi Saken will become the new tourism spot under the CBT concept. The design of this project has been inspired by the skywalk in Taiwan. To achieve the purpose of this

project, the Tessaban has collaborated with Rajamangala University of Lanna Chiang Rai for the design and construction, which adopted earthquake-resistance features. The construction of the skywalk is expected to be completed in 2022. Meanwhile, the sports field project is being redesigned to meet sports standards.

Only one project in the action plan is delayed. The project on the Construction of Buildings Supporting the Use of Children, Youth, People and Elderly has been delayed due to financial constraints. As the project requires a big budget, about THB22 million, which is over the Tessaban's power, the Tessaban has proposed the project to the Provincial Cluster of the Upper Northern Region 2. However, budget allocation has been delayed. Considering the COVID-19 situation, this project could be postponed.

The progress of each project is summarized in Table 3.2.3.

**Table 3.2.3 Progress of Chiang Rai's SFC Plan**

No.	Name of Project	Status			Relevant Org.	Key Constraint						
		Plan	Prep	Imple		Detail	COVID-19	Budget	Reg.	Research	Personnel	Remark
<b>The Project for Doi Saken Development as Learning Sources and Tourism Spot</b>												
1	Construction of Sky Walk		■	□	The skywalk is under the construction with the collaboration from Rajamangala University for construction standard inspector like earthquake safety, etc.	Tessaban, Rajamangala University						
2	Water system renovation		■	■	Completed	Tessaban						
3	Electric and light renovation		■	■	Completed	Tessaban						
4	Installation of CCTV system		■	■	Completed	Tessaban						
5	To proceed sign of learning source		■	●	Additional information boards and directional signs were added.	Tessaban						
6	To improve landscape to be appropriate on Doi Saken.		■	●	Tessaban has additionally improved the Phra That Doi Saken Plaza for using during events	Tessaban						
7	Construction of buildings supporting the use of children, youth, people and elderly.				Tessaban has waited for budget allocation	Tessaban						
8	Camping		●	●	Camping has continuously implemented with 7 institutions which are Rajamangala University of Technology Lanna Chiang Rai, Mae Fah Luang University, Chiang Rai Rajabhat University, Maejo University, Chiang Mai Province, Mahidol	Tessaban, Educational Institutions						Camping activities has to be suspended due to COVID-19 prevention measure

No.	Name of Project	Status				Relevant Org.	Key Constraint							
		Plan	Prep	Imple	Detail		COVID-19	Budget	Reg.	Research	Personnel	Remark		
9	Hiking		●	●	University, Art Bridge Chiang Rai, and Chiang Rai Municipal schools Tessaban has continuously implemented the hiking project for municipal school to learn about biology diversity of forest in the city.	Tessaban, Municipal School								
10	To organize CBT for touching lifestyle following sufficient economy philosophy.		●	●	Tessaban has continuously implemented the project. There are "fam trip" in the community, Buddhist activities at Doi Saken, etc.	Tessaban, Chiang Rai Rajabhat University								
11	To offer meeting rooms, seminars and recreational activities arrangement.		●	●	The meeting room is also used for events and learning centre for elderly people and	Tessaban								
12	Sport field improvement		■	□	It was added into LSDP fiscal year (FY) 2022 for improving sport field at Doi Saken Learning centre in accordance with sport field standard.	Tessaban								
		<b>Remark:</b>					<b>Remark:</b>							
		On plan			● Keep implementing	Causes of delay are COVID-19, budget, regulation, required further research or information, and skills of personnel.								
		In process			■ Done									
		Delayed			□ Under the process									
					xSuspended									

Source: JICA Project Team

The COVID-19 pandemic has become a key challenge for the Tessaban. Some ongoing activities like camping and hiking have been suspended due to the prevention measures. To adapt to the current situation, the Tessaban has reoriented the action plan and added some new projects to achieve the goal of Doi Saken development. Firstly, the Tessaban has installed a new bathroom (see Figure 3.2.2) to support student activities such as camping. This preparation will enhance the quality of facilities in Doi Saken once it completely reopens.



Source: JICA Project Team

**Figure 3.2.2 New Bathroom in Doi Saken**

To complete the Doi Saken development, the Tessaban has proposed seven (7) new projects into different plans and financial sources. Considering the support measure for economic recovery from COVID-19 of Thailand, the Tessaban has proposed two (2) projects on 'Economy and social recovery plan Including economic support projects in the area' under the plan for restoring the local economy and community. The additional budget source is supported by an emergency decree to help the people and improve the economy. The proposed projects are:

- (1) Project for development of learning space and tourism spot toward sustainable agriculture. (Solar windmill construction): Budget 10,900,000 THB
- (2) Project for development of learning space and tourism sport and promotion of community enterprise: Kiri Chai Yama: Budget 5,770,000 THB

The Tessaban also requested funds for constructing an elevated nature trail (Boon Bridge) from the Department of Local Administration (DLA) for the fiscal year 2021 and 2022. In addition, the Tessaban is now implementing another four (4) projects under the Tessaban's budget to improve facilities and build capacities of the community to generate income. Also, the following projects for tourism promotion are also being proposed:

- (1) Landscape and lighting development project
- (2) Additional golf cart procurement project
- (3) Local product upgrading and development project for turning to community enterprise prototype
- (4) Eco-tourism, agricultural tourism, and cultural tourism promotion project

Currently, the Tessaban plans to get additional financial support from the Ministry of Tourism and Sports for the project to organize CBT for touching lifestyle following sufficient economy philosophy (project 10).

All in all, the progress of the “Action Plan on the Development of Doi Saken Community Area to be a Learning Source and New Tourism Spot: Kiri Chai Yama” has presented an impressive progress. The Tessaban keeps developing activities and improving the facilities in the site. The plan that will help complete the projects within the expected period is the LSDP. By using Tessaban’s budget, it not only becomes easier for the Tessaban to manage and implement the projects; it also allows the Tessaban to secure continuous fund for maintenance.

The Tessaban also showed outstanding collaboration with local educational institutions at different levels. To support project implementation, the Tessaban has collaborated with local universities for the research and design. The academic knowledge has been integrated into development. This has enriched and fulfilled the development in Tessaban Nakhon Chiang Rai. The university not only studies the feasibility and provides recommendations for the construction but also guides the Tessaban to respond to actual demand from the community through new development or innovation.

### **3.2.3 Status and Future Direction of the Pilot Project**

This section focuses on the status of the pilot project supported by JICA. This also aims to evaluate how the Tessaban utilizes the output of the pilot project and how they operate and maintain the quality of project construction. Some challenges and plans are also identified.

The JICA pilot project in Tessaban Nakhon Chiang Rai was the Project for Promoting Interactions among the All Ages through Active Learning. Four (4) main components were implemented under this project, i.e., Component 1: Active Learning Courses for Elderly People at the U3A, Component 2: Camp Program for Students, Component 3: Organic Vegetation Training for Community People, and Component 4: Tourism Spot/ Program at Doi Saken. The first component was implemented with the help of the U3A to enhance the capacity of the elderly by providing them learning courses. Meanwhile, components 2, 3, and 4 were implemented as Doi Saken Development. Component 2 focused on the ‘Creation of Space for Students to Learn from/with the Local Community’. This component aimed to create an open-air learning space for students by providing biological information about the Doi Saken forest. Components 3 and 4 were merged into ‘Eco-Tourism and Community-based Tourism in Doi Saken’. By integrating organic vegetation training and developing tourism spots, eco-tourism and community-based tourism mainly provided the local tour program. The tourists were expected to gain impressive experiences through the local culture, agriculture, and lifestyle. Local farming became a tourism activity, while the Doi Saken forest was integrated in the tourism route as an eco-tourism destination. The details of these three main outputs are described as Table 3.2.4.

**Table 3.2.4 Outputs of the JICA Pilot Project by Component**

	<b>Component</b>	<b>Output</b>
1	<b>University of Third Age (U3A)</b>	<p><b>Active Learning Courses for the Elderly in U3A</b>                      The following 8 courses and their curriculums were developed based on the elderly's needs:                      1) Religion, 2) Culture (Northern Music), 3) Environment, 4) Tourism, 5) Health, 6) Economic, 7) Technology and Communication, 8) Social and Happiness (Social Behavior and Dance)</p> <p><b>Joint Activities among the Elderly and the Youth</b>                      Activities that encouraged the elderly to transfer their knowledge of local culture and tradition gained from active learning courses in U3A to the students of municipal schools were designed and are being conducted.                      e.g., Activities that allow the elderly to teach students how to create local products</p>
2	<b>Doi Saken Development</b>	
2.1	Creation of Space for Students to Learn from/with the Local Community	<p><b>Improvement and development of Doi Saken as an open-air classroom</b>                      The following equipment and facilities were installed in Doi Saken:</p> <ul style="list-style-type: none"> <li>• Signboards showing birds, insects, and plants in the forest.</li> <li>• Walking trail and a route map.</li> <li>• Water system and greenhouse for agricultural activities.</li> <li>• Renovated old school facility to exhibit the biodiversity of Doi Saken</li> </ul> <p><b>Study program/courses for municipal school students</b>                      The following three (3) courses were included in the curriculum of the municipal school to teach students about Lanna philosophy in an open-air learning space with a rich ecosystem and through interactions with the elderly and the community:                      (1) Biology: Study of vegetation, mushrooms, insects, and birds along the walking trail,                      (2) Agriculture: Farming experience (hydroponics, herb planting), and                      (3) Social &amp; culture: Lanna dance, Bai-Sri, Lanna food.</p>
2.2	Eco-Tourism and Community-based Tourism in Doi Saken	<p><b>Doi Saken as an eco-tourism destination and a tourist route</b></p> <ul style="list-style-type: none"> <li>• Signboards showing birds, insects, and plants, as well as a walking trail, were installed in the Doi Saken forest.</li> <li>• A tourist map of the Doi Saken community was also prepared.</li> <li>• Five (5) houses in the community were selected as eco-tourism spots where tourists can learn organic farming</li> </ul> <p><b>Organic farming as a tourist attraction</b></p> <ul style="list-style-type: none"> <li>• The selected households from the Doi Saken community were trained in organic farming to develop their knowledge and skills and utilize these in providing tourists with agricultural activities.</li> </ul> <p><b>Creation of tourism activities</b></p> <ul style="list-style-type: none"> <li>• Half-day and one-day tours were developed to encourage tourists to enjoy nature trails, the local Lanna culture, and organic farming and lifestyle in the Doi Saken community.</li> <li>• Activities, such as the Baisri ceremony and cooking of homegrown vegetables, are included in the above-mentioned half-day and one-day tours.</li> <li>• Training of community tour guides was also conducted.</li> </ul>

Source: JICA Project Team



After the JICA pilot project completed, the Tessaban proposed these outputs into the Tessaban's annual expenditure to secure the budget for maintenance. In terms of role sharing, the Tessaban has remained a key actor to operate and implement the pilot project. The responsibility was shared with the different divisions of the Tessaban while closely collaborating with citizens and relevant organizations; for instance, the local university reviewed and updated the elderly learning courses in U3A, the Tessaban school promoted student camping, and local farmers sold their community products.

Under JICA's pilot project, Tessaban Nakhon Chiang Rai did not implement any big construction. Instead, the Tessaban procured equipment to support their own activities. Such equipment has been maintained in good condition and its quality checked every quarter.

Noticeably, the outputs of the JICA pilot project have been disseminated to other areas and other groups of citizens. The idea of U3A has been shared with other communities in Tessaban Nakhon Chiang Rai, while the Doi Saken area has been continually improved using the Tessaban's budget. As mentioned above, the Tessaban has systematically improved the Doi Saken area under a five-year action plan, while community products have been promoted at Doi Saken and organic food have been distributed and promoted to the Tessaban's schools and the entire Tessaban.

The operation and maintenance, main actors, quality of construction, and plans for each output are summarized below.

### **1) University of Third Ages (U3A)**

The University of Third Ages or U3A is mainly operated by the division of education and the medical division of Tessaban Nakhon Chiang Rai. The active learning courses are continually designed, developed, and promoted together with the Chiang Rai Rajaphat University. The courses aim to promote lifelong learning for the elderly and to provide opportunities for them to interact with young people.

Along with this approach, the elderly in Tessaban Nakhon Chiang Rai have been strengthened by the learning courses and have become active. The operation and service of the U3A mainly focuses on being people-centered. By maximizing the value of the elderly, their experiences and local wisdom have been shared to younger generations. Thus, the joint activities between the elderly and the younger generations have been developed in the U3A.

Besides this, the activities to improve physical and mental health was also implemented. To sustain the local culture, the local northern dance was also promoted in U3A. This activity aimed not only to preserve the local culture but also to improve public health by letting the elderly become active. In addition, technology and communication were another key topics promoted in the U3A. A learning course about these aimed to enhance the elderly's capacity to use information technology in their social life and education.

To support such activities, JICA provided many tools and equipment for U3A, such as PCs, multimedia projectors, laptops, speakers, hard disk, amplifier, mixer, DVD player, crossover, audio rack, signal line system, wireless microphones, LED TV, stereo system, and music

instruments. The Tessaban made additional purchases of 15 PCs and musical instruments to serve the higher number of elderly students. To ensure that all the musical instruments were available to every student, the Tessaban asked some students to bring their own.



Source: JICA Project Team

**Figure 3.2.3 Activities at U3A**

During the COVID-19 pandemic, the activities at the U3A had to be suspended. Considering the elderly as a vulnerable group, prevention measures were intensively promoted among them. However, the learning courses in the U3A had shown an interesting outcome in the pandemic: Since the elderly learned technological skills from U3A courses, they have utilized that knowledge to cope with the COVID-19 situation. By using electronic devices and social media, the elderly have helped update the COVID-19 situation and disseminate prevention measures. Moreover, along with staying at home and social distancing measures, the elderly could manage their relationship with friends and family. By doing so, the elderly have kept themselves active and involved in the COVID-19 situation.

With the outstanding outcomes of the pilot project, Tessaban Nakhon Chiang Rai has continued the collaboration with Chiang Rai Rajabhat University. The courses in the U3A have been merged with Doi Saken Development. The new courses were newly designed to provide job opportunities and create the relationship between the elderly and their communities. The new courses include the promotion of community products, packaging design, and self-learning skills. These curriculums are expected to support CBT development. In this perspective, the local products of communities will be upgraded while the temple will provide a space for a local market so that the elderly and the communities will be able to sell their products properly.

Besides these, Tessaban Nakhon Chiang Rai has disseminated the practice of the U3A to other communities. To do this, the Tessaban has collaborated with the Thai Health

Promotion Foundation. The concept of SMART-NET or smart network has mainly emphasized to operate the center. The smart network refers to S- Shared value, M- Management, A-Accountability, R-Relationship, T-Transformation, N-Networking, E-Enthusiastic, and T-Technology. To materialize this concept, the people-centered approach is promoted through activities in each community to encourage the people to think about future development. Therefore, the center will not only focus on the elderly but allow all age groups to become involved.

There are new five (5) elderly learning centers located at the core of communities. The promotion of elderly's health and solid waste management are the focus of the centers. One center will take care of around 10 communities. By emphasizing a bottom-up approach, the community can propose development projects based on their experiences. In this manner, the Tessaban has considered that the communities know their local contexts and problems best. The projects proposed by the communities will be reported to the mayor to request for implementation budget. The coverage of the learning centers for the elderly is listed below.

- Elderly Learning Center no. 1 covers 14 communities.
- Elderly Learning Center no. 2 covers 17 communities.
- Elderly Learning Center no. 3 covers 12 communities.
- Elderly Learning Center no. 4 covers 10 communities.
- Elderly Learning Center no. 5 covers 11 communities.

To support the activities of each center, the Tessaban has collaborated with several universities, such as the Srinakharinwirot University (Ongkharak campus), Chiang Rai Rajabhat University, and Mae Fah Luang University. This is to guide the communities to find the best solution for their area and wellness. Meanwhile, Chiang Rai Prachanukroh Hospital gives advice on public health. The centers are fully developed.

All in all, the development of the U3A has been optimized to include other areas. The citizens have become more involved in urban development while elderly health and wisdom have been promoted through several activities. The collaboration with the academic and public sector makes the U3A and learning centers complete, helping to make all age groups and citizens in the Tessaban happy and healthy.

## **2) Doi Saken Development**

The Doi Saken Development component focused on the creation of learning spaces for students from/with the community and the development of eco-tourism and CBT. These two (2) projects are continually operated under Tessaban Nakhon Chiang Rai. The equipment supported by JICA have remained in good condition and checked quarterly for maintenance. The further development of Doi Saken is mostly aligned with the five-year action plan. However, some new projects to support the activities in Doi Saken are also promoted to fulfill the goal of the pilot project. The details of these developments are summarized below.

### **2.1 Creation of Space for Students to Learn from/with the Local Community**

The creation of space for students to learn from/with the local community aimed to promote a learning space for students to gain outdoor experiences together with the local community. This open-air learning venue provided them with knowledge about the Doi Saken forest, farming experiences from local communities and farmers, and opportunity to understand the local culture like local foods and the traditional dance of Lanna. With these activities, the students imbibed the local lifestyle of the communities. By doing this, the sense of belonging to their city was gradually impressed upon the younger generation.

The Technical Planning Division of Tessaban Nakhon Chiang Rai was in charge of the creation of the learning space. The main action was to coordinate with relevant organizations, especially the local university to design and enhance the learning program while promoting the learning activities in Doi Saken in the Tessaban's school. Three courses on biology, agriculture, and social and culture were introduced as optional curriculums at the Tessaban school. The first pilot school was Tessaban 6 school. The students could select the courses that they were interested in, while the teacher and Tessaban staff guided them to explore the Doi Saken forest.

With the success of Tessaban 6 school, Tessaban Nakhon Chiang Rai disseminated the courses to other tessaban schools to promote the learning space of Doi Saken. However, COVID-19 suspended these activities. Being an open-air learning space, it was hard for the school to integrate the Doi Saken courses into the online system. Once the prevention measures are eased, the courses in Doi Saken will be reopened.

Under JICA's pilot project, signage was installed in Doi Saken, for instance, the directory, signboards of birds, and plants. The quality of these signage has remained in good condition. Meanwhile, the Tessaban has installed additional signage to introduce the biology in Doi Saken area.



Source: JICA Project Team

**Figure 3.2.4 Open-air Learning Space in Doi Saken**

Besides the additional signage, Tessaban Nakhon Chiang Rai has improved the learning facilities in Doi Saken like bathrooms mentioned in the action plan. Furthermore, Tessaban Nakhon Chiang Rai plans to establish an observatory for the Astronomy Study Center. The center will function as a new learning center for students. To complete this project, the Tessaban has collaborated with Mahidol University for the design. A feasibility study is under way for this project. Basically, the design and construction of this center will not only focus on astronomy learning but also on natural disasters and is planned to be earthquake-resistant.

## **2.2 Eco-Tourism and Community-based Tourism in Doi Saken**

### **Doi Saken as an eco-tourism destination and a tourist route**

To promote tourism destinations in the Doi Saken area, a tourism map was prepared. The tourists can get the information not only along the Doi Saken route but also the surrounding communities. By utilizing the biological signage in the Doi Saken forest, the tourists can enjoy the trip along the walking trails.



Source: JICA Project Team

**Figure 3.2.5 Tourist Map and Brochure**

To support the ecotourism initiative, JICA provided some equipment for Doi Saken which included golf carts, sound system, LCD projector, electric monitors, binoculars, insect collecting sets, densometers, clinometers, augers, digital weighting scales, CU smart lens, global positioning system (GPS) devices, the direction sign “Kiri Chai Yama”, Doi Saken forest maps, information signage, plant nameplates, and photo spot signs.





Source: JICA Project Team

**Figure 3.2.6 Golf Cart and Information Banners**

Besides the signage in Doi Saken forest, information banners have been placed in the learning center at Doi Saken. The learning center is multifunctional because it also serves as venue for community gatherings and other events. During events, the community can sell their handmade products. Agricultural products, Bai-Sri (flower arrangement for the Lanna ceremony), and craft products represent local products of Doi Saken. Such activities were expected to increase the number of tourists and visitors.



Source: JICA Project Team

**Figure 3.2.7 Product selling at Doi Saken**

### **Organic farming as a tourist attraction**

Toward the eco and community-based tourism, local farmers and communities were involved in project implementation. Organic vegetables and local products were researched to add value to them and generate income for the locals. The training has been continued and developed by the Social Welfare Division of Tessaban Nakhon Chiang Rai. By focusing on agricultural households, agricultural and local products have been developed and promoted through tourism.

During the JICA pilot project, the prototype of community enterprises was created through training. The experiences of community enterprises were disseminated to other communities in the entire Tessaban. On the one hand, the organic vegetable farming was promoted in the tourist map as a demonstration site. Also, organic products were sold at the site to further complete the experience for tourists and visitors.

On the other hand, the Tessaban has integrated the outputs of this pilot project with food safety. Along with Food Safety approach, Tessaban has been promoted the organic vegetables in two ways. At the initial stage, organic vegetables were promoted to the Tessaban's school as lunch. In a long-term perspective, the Tessaban intends to disseminate organic products in restaurants and hospitals located in the Tessaban's area. Besides this, the Tessaban is now planning to establish a new food safety distribution center to make the Tessaban a green city. To achieve this goal, the Tessaban has collaborated with Chiang Rai Rajabhat University for quality control and community training, while collaborating with the local communities and nearby LAO to promote organic farming. This distribution center is expected to generate income for the farmers while introducing food safety to its citizens and visitors for their quality of life and health.

### **3) Outcomes of the Pilot Project**

The pilot project in Tessaban Nakhon Chiang Rai posted several remarkable outcomes. All generations were considered in the plan. By creating learning spaces and promoting multigenerational activities, the inter-generational link was built. The citizens not only gained learning experiences, but they also generated income through tourism development. The key outcomes of pilot project are summarized as follows:

- Based on local or the elderly's needs identified through study and workshops, the courses and curriculums at the U3A which meet actual needs and are appropriate for their age and physical abilities were developed. This attracted many elderly people in the city and contributed to the happiness and health of the elderly after retirement.
- Access to the school (e.g., school bus) and ease of using the facility (e.g., barrier-free toilets, large rooms) by the elderly should be of paramount consideration when developing facilities where provide learning opportunities for the elderly.
- Through activities where the elderly and the youth in the community learn from and interact with each other, local tradition and culture were passed on to the next generations and social connection among generations was nurtured.
- From course design to implementation, Tessaban Nakhon Chiang Rai collaborated



with the community to create a learning environment for municipal school students by utilizing local natural resources (Doi Saken and its biodiversity) and indigenous culture.

- Students discovered the strengths or attractiveness of their city by learning from/with the locals. This also fostered civic pride.
- Tessaban Nakhon Chiang Rai prepared their own tourism programs revolving around their key resource, the Doi Saken forest, by taking advantage of its rich biodiversity and the city's indigenous culture (Lanna culture).
- The tessaban collaborated with the community through a CBT Working Committee to manage tourism. By involving the community in promoting local tourism and culture centered on the Doi Saken forest, households gained more income and took pride in their city.
- In developing a CBT, the community learned about tourism management.

### **3.2.4 Lessons Learned**

**Creation of intergenerational shared space and opportunity:** The key challenge of the city is that the society has become more multigenerational. The demands of each generation are varied and differ which has a potential to cause social exclusion and economic burden. In pursuing an inclusive and sustainable city, the community should be a good place to grow up in. It is essential to promote intergenerational engagement that values and engages people of all ages. To reflect and promote this mindset, Tessaban Nakhon Chiang Rai, through the pilot project, utilized their resources to create a space where multiple generations could interact and work toward an inclusive city. The space developed in parallel with tourism development. As a result, a learning and healthier society, tight communities, and improved local economy have been continually developed in accordance with local demand.

The values of different generations are diverse and mutually beneficial. By prioritizing on learning at all ages, the Tessaban developed the space to share the knowledge and experiences from young to old. This intergenerational shared space improved social skills, job skills, confidence, and academic skills. Although the U3A mainly focuses on elderly development, the elderly has opportunities to share and exchange their experiences with the students and communities at Doi Saken. By promoting local nature, the new tourism spot and learning environment have been created at Doi Saken forest. This shows that the Tessaban has optimized their own resources to serve all demands and reflect all aspects in urban development.

**Collaboration with academic sector:** Throughout the process of JICA project implementation, Tessaban Nakhon Chiang Rai has prioritized on academic support to complete the project perfectly. Such academic advice helped the Tessaban to gain the new innovation and development in the city. Besides this, Japanese experience inspired the Tessaban to achieve and develop the shared space.

**Knowledge and experience exchange with other cities:** Tessaban Nakhon Chiang Rai

got an opportunity to exchange knowledge and experiences with Makinohara City in Japan. The city-to-city collaboration was a fruitful experience for the city to inspire new perspectives of city development. Particularly, visiting other cities to see their achievements is more essential than reading or hearing about them. Such visits allow cities to have a clear image and real experiences to apply in their own areas.

**Participatory process:** Besides the experiences from the other cities and academic support, another key success of Tessaban Nakhon Chiang Rai is the participatory process. Along the process, the communities, elderly, students, and stakeholders were involved to reflect their own demands and ideas. As the communities became part of making a city plan, the sense of belonging to the city improved. In this sense, it not only secured the project and responded to the local's demands, but the Tessaban also gained the trust and reliability from local people through public participation.

**Tessaban's leadership and determination:** Toward success, the importance of the Tessaban's leadership and determination should be highlighted. The mayor has a strong vision while taking action to respond to the demand of the citizens. The strong leadership makes a clear direction for the Tessaban's officials and citizens to drive the pilot project. With clear direction and guidance from academic institutions, the Tessaban mitigated the negative impacts and conflicts of interest. Among all ages, they had a clear understanding and realized their benefits that could be gained from their involvement. Therefore, the locals shared their own resources like time or knowledge to make the city become sustainable.

**Budgeting:** In addition, it cannot be denied that budget was the most important challenge in project implementation, especially for projects beyond the Tessaban's power. The Tessaban has been the main actor to find budget sources. While it proposed the project for inclusion in the LSDP as a showcase, it also collaborated with the academic sector to complete the elements of the project. This allowed the Tessaban to get the budget more easily. Despite the difficulty of getting the budget, the Tessaban actively pursued the budget sources by creating connections and networks from both public and private sector. Under the SFCl, the organizational structure potentially benefited the Tessaban as they had more chances to present their vision and projects to provincial and national government. This makes the proposed projects become more reliable and reasonable by reflecting all comments before proposing the project.

**Tessaban's authority:** Another challenge is the regulation on local government authorities. The Tessaban is constrained to comprehensively promote urban development due to lack of authority. In particular, in Municipality Act B.E. 2496, the mayor of Tessaban Nakhon Chiang Rai strongly suggested that decentralization is required to provide more powers to the local government, especially to let the Tessaban improve the people's well-being and generate jobs.

### 3.3 Tessaban Nakhon Khon Kaen

#### 3.3.1 Overview and the SFC Plan of Tessaban Nakhon Khon Kaen

##### 1) Overview of Tessaban Nakhon Khon Kaen

Tessaban Nakhon Khon Kaen functions as the center of northeastern Thailand supporting its economic growth, public services, and manufacturing. Also, the tourism industry has been served for several business trips through the MICE city. With its location, there is a potential for being a logistics center serving both domestic and international transport. Due to having many well-known higher educational institutions, it provides plenty of job opportunities for young and white-collar workers. In addition, the medical facilities are of high quality and serve patients in the province and the region. With these potentials, however, Khon Kaen has faced with rapid urbanization. The compact city should be highly considered in planning.

##### 2) SFC Plan for Tessaban Nakhon Khon Kaen

To optimize the potentials and tackle forthcoming issues, Tessaban Nakhon Khon Kaen has formulated and shared the vision of “Create a Happy and Global Society”. To achieve this vision, the “Smart City” concept has been used as a key to drive city development. This concept is expected to bring maximum economic driving forces while controlling urban expansion.

Under the city’s vision, Tessaban Nakhon Khon Kaen formulated seven (7) strategies for the SFC Plan, as follows:

**SFC Vision:** Make the City Global, Create a Happy Society” and “Smart City”

Strategy 1: Enhance “Centricity ”in Isan

Strategy 2: Smart and yet Traditional Urban Renewal

Strategy 3: Green and Quality Amenity City

Strategy 4: Beyond Car-oriented Development

Strategy 5: Sustainable Urban Growth with Nature

Strategy 6: Design for All

Strategy 7: Safe, Secured, and Quality Living Environment

Because of its ideal location, Tessaban Nakhon Khon Kaen will become a regional transport center. To maximize these benefits, the improvement of the transportation system has been prioritized by the Tessaban. It is not only to promote the city’s economy but also to develop the quality of life and secure its environmental conditions through an efficient transport service.

As part of the SFC Plan, Strategy 4: Beyond car-oriented development was the focus in the SFCI process considering the current mega project, the construction of the light rail transit system, which was approved by the cabinet for promoting the first mass transit at the local level. Khon Kaen will be a best practice for urban public transport. Under the SFCI, this strategy aimed at promoting the use of public transport and creating the linkage of

transport modes in the urban area. To this end, the implementation of the JICA pilot project focused on public transport promotion. The details of the SFC program and the JICA pilot project are summarized in Table 3.3.1.

**Table 3.3.1 Selection of SFC Program for Tessaban Nakhon Khon Kaen**

SFC Program	<b>Beyond Car-oriented Development</b> <ul style="list-style-type: none"> <li>• Transit-oriented development</li> <li>• Development of mass transit system along NR 2 as the main transit axis</li> <li>• Extended feeder transit network in a hierarchical manner - smart bus stop with bicycle parking system, paratransit, taxi,</li> </ul>
JICA Pilot Project	<b>Public Transport Promotion</b>
Action Plan	<b>Short Term Plan for Holistic Public Transport</b> <b>Mid Term Plan for Holistic Public Transport</b>
Expected output of SFC Program	<ul style="list-style-type: none"> <li>• Higher number of public transport passengers and bicycle users</li> <li>• Reduce barriers of shifting from private to public transport</li> <li>• Improve security of bicycle parking facilities</li> </ul>
Long-term Impact of SFC Plan	<ul style="list-style-type: none"> <li>• The project can promote public transportation multimodal connectivity, accessibility and information facilities and services. It can encourage more people to use public transport and non-motorized transport and reduce traffic issues by shifting behavior from private transport to public transport.</li> </ul>

Source: JICA Project Team

To formulate the pilot project, a roadmap was prepared for reflecting the concrete actions. With the results of the questionnaire survey and focus group discussions with the relevant stakeholders, the roadmap consisted of a database, placemaking, promotion plan, management of transit, operations, multimodal transport, terminals, new routes, integrated routes, and rerouting, as shown in Table 3.3.2.

**Table 3.3.2 Roadmap for the Pilot Project**

Period	Project	Detail
Pilot Project	Database	The data management system with data collection on the mass transit system. Data on users and service routes are collected to be analyzed to improve the overall service in the future
	Placemaking	To create a space to respond to the city by focusing on the part of the public space considering these following aspects: accessibility and connectivity, image (features) and comfort, users and their activities, and using places to build people's relationships.
	Promotion Plan	To promote the use and public relations management to attract and create image to the mass transit of the city by focusing on improving on existing things to be easily accessible and interesting to use including the promotion management system.
Short-term Project	Management of Transit	A mass transit management system that focuses on data management system of the mass transit system from data collection, analysis, and results that are used to mobilized and develop the mass transit system. Overall, the travel information center may be set up to support both users and service providers to utilize the information in order to plan their travels and services in the future.
	Operation	The management of service providers: public bus drivers and minibus (songteaw) drivers to raise the living standards while creating a stable working environment. This project also includes skills development and occupation and services to attract service providers and increase their capacity to allow the management system to work effectively
	Terminal	The construction of a central station for the massive transit network. The terminal will not only be a place for transfers and for remote users as an

		integrated travel hub. It also includes the development of areas around the station to conform with urban development.
Midterm Project	Multimodal Transport	The generation of alternative choices for users to use the mass transit; this includes the connection of public transport in the city with other public long-distance transport systems, such as long-distance buses, trains, and planes. Also, the connection with the short-distance and long-distance transport system will increase the travel networks, provide convenience, and elevate overall system's performance.
	New Route	The creation of new mass transit route by using information/data gathered from the data collection to respond to service providers and users. After applying the information/data, it will address the creation of new route services to meet the needs of users in these areas where current service routes are inaccessible.
	Integrated Routes	The integration of routes based on the data collected through the pilot project which will combine existing routes to deliver higher levels of services.
	Re-routing	The collection of data to allocate new routes, integrate existing routes or cancel original routes, and reset all new routes to respond to the city's growth and the needs of mass transit users.

Source: JICA Project Team

The above identified three pilot projects (database, placemaking, and promotion plan) are very important to the project implementation in the next stage because the results of the pilot projects can be extended to form the short-term and mid-term projects. They can also be applied to develop long-term public transport planning to help attain sustainability for the city.

The short-term project is referring to quick actions to support and improve transit system in Khon Kaen, which can be a continuation of JICA-funded pilot projects, focusing on connection, management, and service providers. Some of the proposed short-term projects were supposed to start in 2018, while others in 2019. These timeframes could change depending on budget availability. The key project players, or responsible organizations, are Khon Kaen Smart City Operation Center, the municipality (Tessaban), Khon Kaen University (KKU), and PPP partners. The details of each project are summarized in Table 3.3.3.

**Table 3.3.3 Short-term Action Plan**

No.	Name of Project	Duration	Responsible Organization	Budget (THB)	Budget Source
1	Linkage information	2018–2019	Khon Kaen Smart City Operation Center	1,000,000	Public
2	Place information	2018–2022	Tessaban	10,000,000	Tessaban
3	Public transport support	2018–2022	Tessaban	10,000,000	Tessaban
4	Data management	2019–2020	KKU	10,000,000	PPP
5	Public transport application	2019–2020	KKU	5,000,000	PPP
6	Cashless payment	2019–2020	PPP	1,000,000	PPP
7	Skills development of service providers	2019–2021	KKU	2,000,000	PPP
8	Accessible public transport transit	2019–2021	Tessaban	2,000,000	PPP
9	Multimodal	2019–2023	PPP	20,000,000	PPP
10	Marketing campaign	2018–2019	PPP	2,000,000	PPP
11	Public space	2019–2023	Tessaban	30,000,000	Tessaban

Source: JICA Project Team

Medium-term projects (Table 3.3.4) were proposed to jump off from the results of the short-term projects and to focus on the management of the public transportation routes which are integrated with the overall network. Private Public Transportation Agency (PPTA) plays an important role in the preparation and establishment of new routes as well as in integrating them. In addition, the PPTA should prepare and rearrange existing routes to connect and link the public transport system appropriately and remove/reduce missing links in the public transport service within the city and its surrounding areas.

**Table 3.3.4 Midterm Action Plan**

No.	Name of Project	Duration	Responsible Organization	Budget (THB)	Budget Source
1	New Route	2018–2019	Private Public Transportation Agency	3,000,000	Private
2	Integrate route	2018–2020	Private Public Transportation Agency	3,000,000	Private
3	Re-Route	2020–2021	Private Public Transportation Agency	3,000,000	Private

Source: JICA Project Team

Consequently, the guideline for the long-term design and management will make people think critically about public spaces, including the transportation network, as well as the proposal to improve them and the development of Khon Kaen City in the future. Long-term design and management should focus on transit service timetable, public space regulation, as well as management and maintenance.

The next section describes the monitoring and evaluation of the short-term and midterm plan, the results of which are expected to help in planning the further actions of the Tessaban. The implementation body, integrated urban policy, and potential financial sources are also identified, and the impacts, constraints, or any delays are considered.

### **3.3.2 Progress of the SFC Plan**

All projects proposed in the short-term and midterm action plan have been integrated in the LSDP of Tessaban Nakhon Khon Kaen (2018–2022) under Strategy 4: Development of Logistic and Public Transport System, and Infrastructure towards City of Investment and Living. The LSDP has become a key driver to propose the projects to other organizations. This is because the projects in the LSDP demonstrated the Tessaban’s development directions so that it is easier for the city to gain the necessary support. Meanwhile, the projects beyond the Tessaban’s capacity and responding to provincial needs were proposed in the Provincial Development Plan and Provincial Cluster Development Plan (Roi-Kaen-San-Sin Provincial Cluster).

It should be noted that the action plan of Khon Kaen is significantly related to the existing and future transportation system, including the Khon Kaen smart bus, songteaw, train station, and light rail transit (LRT) project. To promote the integrated system, transport data management was promoted while land use development and urban design were also considered as essential components, i.e., transit-oriented development (TOD) and urban design, to support the city development.

In terms of operation and planning, Tessaban Nakhon Khon Kaen has a strong connection

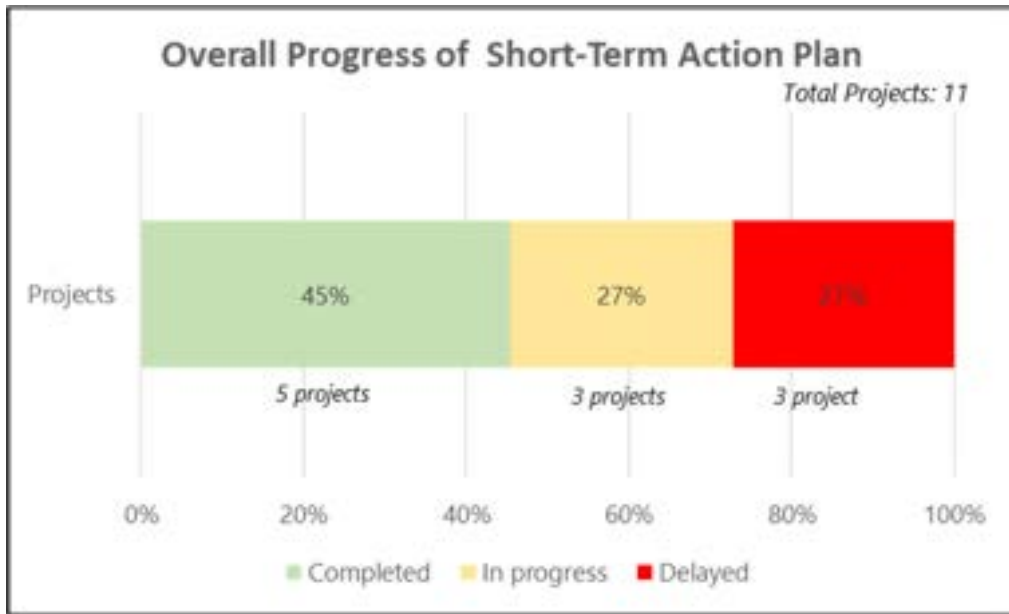
with both private and public sector, as well as educational institutions. The key partners from the private sector include Khon Kaen Think Tank (KKTT), Khon Kaen City Bus, and Chamber of Commerce Khon Kaen province. Its partners from the public sector include Khon Kaen Province, Office of Transport and Traffic Policy and Planning (OTP), and Khon Kaen Transit System (KKTS) (the integration of five tessaban, including Tessaban Nakhon Khon Kaen, Tessaban Mueang Sila, Tessaban Tambon Sila, Tessaban Tambon Mueang Kao, and Tessaban Tambon Tha Phra). For the civil sector, the Tessaban’s city council or Sapa Mueang has served as a public consultation platform. In addition, the Tessaban has highly collaborated with provincial universities, especially Khon Kaen University and Rajamangala University of Technology Isan Khon Kaen Campus, aimed at gaining technical support and research for operating the transportation system. The role sharing to implement the action plan is summarized in Table 3.3.5.

**Table 3.3.5 Role Sharing in Khon Kaen**

<b>Sector</b>	<b>Organization</b>	<b>Role Sharing</b>
Private Sector	Khon Kaen Think Tank (KKTT)	LRT projects and TOD
	Khon Kaen City Bus	Bus services
	Songteaw operators	Songteaw services
	Chamber of Commerce	LRT project and investment projects for supporting TOD and economic center
	Other business	Fundraising
Public Sector	Khon Kaen Transit System (KKTS)	LRT operations and maintenances
	Khon Kaen province	Advisory
	OTP	Feasibility Study of LRT
	DPT	Public space and Land use development
	SRT	Integrated transport system
	TCDC, UDDC, and Association of Siamese Architects	Urban design
Civil Sector	City council	Feedbacks and project design
	Volunteers	Feedbacks and project design
Educational Institution	Khon Kaen University	Research and data management
	Rajamangala University of Technology Isan Khon Kaen Campus	Research

Source: JICA Project Team





Source: JICA Project Team

**Figure 3.3.1 Overall Progress of the Short-term Action Plan**

Based on the overall progress shown in Figure 3.3.1, Tassaban Nakhon Khon Kaen has completed about 45% of the action plan, 27% is underway, and the rest of the projects are delayed.

The short-term action plan consists of eleven (11) projects. The short-term action plan has a relation with the further developments. There are five (5) projects proceeding as planned. Three (3) projects are being prepared for implementation, while another three (3) are suspended mainly because of the delays of the LRT project.

The completed projects are mainly related to the utilization of collected data. The users' travel behavior and basic information of existing public transport system were collected for policy makers and bus operators to plan and improve their services, respectively. At the same time, the promotion of public transport had been continually promoted through marketing campaigns like the discount promotion. The Dino card was also developed to integrate public transport modes with discounts. Public spaces were also improved to enhance the city's vibrancy and economic activities at the city center.

As mentioned above, to accomplish the purpose of the action plan, the Tassaban collaborated with several organizations. In terms of research, Khon Kaen University was the main advisor to develop the project. TCDC, UDDC, and other public sector entities like DPT provided financial support either through construction or activities, based on their mandates. Similarly, the private sector, especially KKTT, integrated their resources and ideas into project implementation.

As Khon Kaen aims at developing an integrated transportation network, some projects are under the process of research and construction. It requires the results of future projects to support the plan. In particular, the LRT project will become the main transit system in the city, so other projects, such as feeder system and data management, must be kept updated and researched. Similarly, some projects must be implemented in accordance with the current situation. For instance, the application software on public transport gets updated

as data is collected. The number of smart bus stops also keeps increasing, and this requires continuous budget support.

The key constraints causing project delays include COVID-19, budget, regulations, required further research, and personnel. COVID-19 has impacted mainly the project approval because the government needed to allocate their budget and staff to support their COVID-19 response. Thus, some projects had to be postponed. Another impact from COVID-19 is the reliability of data. Due to COVID-19 prevention measures, travelling became limited so that trip volumes became lower than usual.

The budgeting and regulation remained the key limitations of the Tessaban. However, Tessaban Nakhon Khon Kaen collaborated with the private sector for fundraising. Even though the private sector could support some project implementation, public finance was required for the project details and description. Thus, some projects were delayed due to the financial procedure. Also, the regulation mainly limits the Tessaban to get support from the private sector. Despite reducing the Tessaban's financial burden, the regulation does not fully support urban development from the private sector.

Another point is that some projects required further research or study to guarantee the expected outcomes and to get the budget. Tessaban's personnel are also limited in terms of multidisciplinary knowledge for both regulation and technical work.

The status of projects, relevant organizations, and constraints are summarized in Table 3.3.6.

Table 3.3.6 Progress of the Short-term Action Plan #

No.	Name of Project	Status				Relevant Organization	Key Constraint							
		Plan	Prep	Imple	Detail		COVID-19	Budget	Reg.	Research	Personnel	Remark		
1	Linkage information		●	□	It was implemented for 2 years. The data that was collected would be integrated with other activities in the future.	KKU								
2	Place information		●	□	Gaining budget from private sector for signage installation with advertisement.	Private Sectors								Along with LAOs regulations, Tassaban cannot install any advertisement on the public facilities.
3	Public transport support		●	●	- Project aimed to develop smart bus shelters under universal design concepts. - Smart bus stop with universal design was developed.	KKTT Khon Kaen City bus								Keep expanding to other locations.
4	Data management		●	●	The results of data collection and analysis will be used to support both users and service providers for travel and service planning in the future.	KKU								Due to COVID-19, the travel and trips data is less than usual. The data cannot reflect the normal situations for supporting further development.
5	Public transport app		●	□	There is an app called "KK Transit" which provides bus arrival times, driver information, and routes.	KKU Khon Kaen City bus								Under the process of updating application KK transit. 6 Smart Bus will be added for connecting with Khon Kaen train station No songteaw data
6	Cashless payment		□	x	The Dino card was developed to be used with the bus system; however, it is usable only on Bus number 24.	Khon Kaen City bus KKTS KKTT KKU Songteaw operator								To integrate the payment system, the completion of LRT is required. Also, the research should be done to support the fare system.

7	Skills development of service providers	x	Not yet implemented.	KKU							
8	Accessible public transport transit	□	There is a plan to create TOD at Khon Kaen train station connecting with smart bus, LRT, and songthaew.	Khon Kaen City bus KKTs KKTt KKU						Required the result of LRT plan.	
9	Multimodal	□	- Khon Kaen City Bus operates free service in Khon Kaen University while costing only THB15 for traveling in the city. - For bicycle lanes, it needs some research in the areas before implementing.	Khon Kaen City bus KKTs KKTt KKU						Required the result of LRT plan.	
10	Marketing campaign	●	- Social media like Facebook is the communication channel. - Information has been mostly passed by word of mouth. - There is discount promotion for students who use Dino card.	Tessaban Community						Due to COVID-19, the use of public participation is lower than usual. To reflect the prevention measures (social distancing and stay home stay safe), the promotion of public transport must be suspended.	
11	Public space	□	- There are 7 space development projects such as the development on Srichan road, old transit center, or Kan Nakhon lake. - SRT has a TOD plan along a high-speed railway and double track. - DPT has a plan to develop a public park at city gateway.	-TCDC, -UDDC -Association of Siamese Architects -SRT -DPT						The project is under the process of preparation. Due to COVID-19, the approval of project has been delayed.	
				<b>Remark:</b>							
						Causes of delay are COVID-19, budget, regulation, required further research or information, and skills of personnel.					
				<b>Remark:</b>							
				On plan		● Keep implementing					
				In process		■ Done					
				Delayed		□ Under the process					
						xSuspended					

Source: JICA Project Team

For the midterm action plan, the projects are mainly related to the LRT project. In other words, it needs to use the results of the LRT feasible study and can be started once the LRT is completed. Hence, midterm projects are in the preparation stage, including data collection and research.

**Table 3.3.7 Progress of the Midterm Action Plan**

	Project	Status		Description	Relevant Org.	Remark
		Prep	Imple			
1	New Route			To create new mass transit route based on the result of data analysis to meet the needs of users in areas where current service routes are inaccessible or are not covered. The relocation of Terminal 3 to the new location will require more new public transport routes.	KKU KKTT KKTS	Five new routes of LRT were addressed in Khon Kaen master plan
2	Integrate route			To integrate routes based on data collected in JICA pilot projects by combining existing routes and new routes to deliver higher levels of service.	KKU KKTT KKTS	There is the connection in regional scale such as Baan Phai–Nakhon Phanom and Khon Kaen–Lam Chabang Requires further study
3	Re-route			Songteaw route can cover concentrated residential areas in Khon Kaen city. Linking bus and songthaew with LRT project as a feeder. Other routes will be re-routed to comply with the change of Khon Kaen's growth context.	KKU KKTT KKTS	Requires further study
Under the process						

Source: JICA Project Team

To sum up, the action plan of Khon Kaen for both short-term and midterm projects are still active. The key to proceed with the plan is the LSDP and an alignment of projects with development at all levels, including province, provincial cluster, region, and nation. Therefore, the projects required more inputs on the development directions to be completed. The collaboration in Khon Kaen to complete the urban development project was remarkable and outstanding. However, the government, especially the national and regional levels, should provide more support in terms of budget and advice. Also, the government should consider the legal framework and deregulation to give more power to the local government. This will not only benefit the government to reduce their financial burden but will also motivate the stakeholders to get involved in urban development.

### 3.3.3 Status and Future Direction of the Pilot Project

This section focuses on the status of the pilot project supported by JICA. This aims to evaluate how the Tassaban utilized the output of the pilot project and how do they operate and maintain the quality of project construction. Some challenges and plans are also identified.

The JICA pilot project in Tassaban Nakhon Khon Kaen consisted of three (3) components.

The main purpose of the pilot project was to promote the use of public transportation. With the existing systems and to support further implementation, Khon Kaen prioritized transit database building, placemaking (in transit system service), and songteaw promotion design. The details of the pilot project are summarized below.

**Table 3.3.8 Outputs of the JICA Pilot Project by Component**

	<b>Component</b>	<b>Description</b>	<b>Output</b>
1	Building Transit Database in Khon Kaen City	This project is the data management system with data collection on the mass transit system. Data on users and service routes are collected to be analyzed to improve the overall service in the future	To identify the actual situation, issues and potential on songtaew and to support improvement of public transport service in the future, data and information on songtaew were collected and integrated into GIS database.
2	Placemaking of Transit System Service	This project is to create a space to respond to the city by focusing on the part of the public space considering these following aspects: accessibility and connectivity, image (features) and comfort, users and their activities, and using places to build people's relationships	- Selected ten (10) sites which are important for transit around the city were designed based on the workshop with stakeholders such as provincial organizations, chamber of commerce, Khon Kaen Think Tank and public transport operators. These designs are planned to propose for actual development in the future. - Through a series of "local campaigner workshops", participants of 30 volunteers proposed solutions to promote public transportation and tested it in the field.
3	Promotion Design for Public Transportation	This project is to promote the use and public relations management to attract and create image to the mass transit of the city by focusing on improving on existing things to be easily accessible and interesting to use including the promotion management system.	To create identity of Songthaews and buses, the following were created. Logo and key visual of "Smart Songthaew" (ii) Transit map/information leaflet and online media (iii) Information design: Transit map & signage of songthaew, Bus signage template, Mock-up of bus stop (vi) Interior & exterior design of songteaw

Source: JICA Project Team

With the results of the JICA pilot project, Tessaban Nakhon Khon Kaen has posed a latent operation and maintenance. The collaboration with other sectors, especially Khon Kaen University, has remained in each project. Also, the city has a plan to utilize and expand the outputs of the pilot project in the future. The quality of equipment installed in Khon Kaen ranged from moderate to good. The Tessaban has applied the technological system via LINE bot in which the locals and public transport users can report the issues and post feedback directly to the division of public works in Tessaban Nakhon Khon Kaen. The summary of outputs and actions in pilot projects are summarized as follows:

**1) Building Transit Database in Khon Kaen City**

To maximize and complete the transit database, Tessaban Nakhon Khon Kaen has kept working with Khon Kaen University, Khon Kaen Transit System Company Limited (KKT),

and Khon Kaen city bus. The data collection and integration system have been updated, especially tracking of travels and trips of users.

Gaining and integrating the travel data from songteaw have remained difficult because there are over 600 operators. Also, the cost of GPS devices is relatively high for the operators to invest in. However, the Tessaban has collaborated with those private operators and most of them are willing to cooperate by providing necessary data such as number of cars, routes, and fares.

In addition, the database is expected to be used in urban planning, strategy formulation, and project implementation. Not only focusing on public transport, land use management and urban design can be efficiently developed from this database. For instance, the Tessaban and KKTS are expected to use the transit database for supporting the LRT project. When the LRT is operated, the database can be used for designing the feeder system. Meanwhile, songthaew operators and Khon Kaen city bus are willing to adjust their routes in accordance with the feeder plan.

During COVID-19, there was less travel information than usual. Most people preferred to use private cars rather than public transport to maintain physical distance. Also, travel restrictions limited business trips and tourism in Khon Kaen.

## **2) Placemaking of Transit System Service**

This project is a collaboration between Tessaban Nakhon Khon Kaen and Khon Kaen University. The Tessaban has a key role in project implementation, while Khon Kaen University acted as a consultant to provide an advice and guideline to implement the designs.

Placemaking of the transit system service was designed using universal designs. The first remarkable project is the improvement of facilities, including the overpass. The second project is the walkway improvement with a slope and braille blocks to support public transport users, pedestrians, or bikers. Therefore, this project does not only promote the use of public transport but also consider urban environmental improvement and development which match the use of public space.

The designs used in the placemaking project are also being considered to be promoted in the future, particularly, in relation with TOD. To support the forthcoming changes from TOD and the LRT project, a city design will be essential to promote economic activities and transport connectivity.

However, the key constraint of this project is the lack of law and regulations. Due to being a form of development, it requires a variety of related knowledge. It is also important to foster common understanding with all stakeholders. In particular, the citizens could gain an impact during construction. Also, the implementation requires cooperation from many sectors related to transport, traffic management, land use, city planning, funding, and investment.

Under this pilot project, mock-ups of a bus signage and a bus stop with lights and battery charger were installed in the Tessaban (see Figure 3.3.2). The installation is in moderate to



good condition. Tessaban staff have inspected its quality and function. Also, there is a LINE BOT system operated under the division of public works of Tessaban Nakhon Khon Kaen. With this system, users can report damages and unsatisfactory service directly to the Tessaban for the maintenance and repairs.



Source: JICA Project Team

**Figure 3.3.2 Bus Signage and Stop Mock-ups**

Even though Tessaban Nakhon Khon Kaen has not installed more bus signage and bus stops, it plans to do this later on using its own budget. With a strong connection with the private sector, the Tessaban also expects to collaborate with public transport service providers or operators to complete the installation.

### **3) Promotion of Public Transportation**

To promote the use of public transport through design, the key partners of this project are Khon Kaen University and bus/songteaw operators. As this project is mainly related to songteaw, the owners of songteaw appreciated the design of logo and route map. However, it was difficult for the Tessaban to promote the interior and exterior designs of the songteaw because these depend on the operators' preferences and funds.

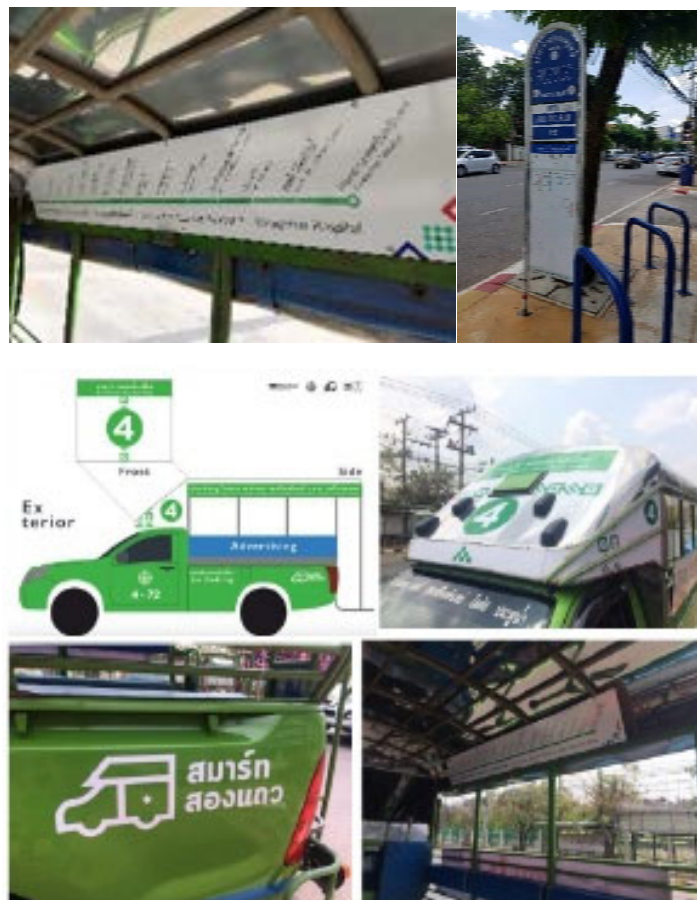
Even though there are no further implementation of the 'smart songteaw', the Tessaban has kept promoting the songteaw as a future feeder service for the LRT. To maximize the feeder system, owners of songteaw have signified their cooperation to adjust their services.

Under this project, there are four (4) equipment installed in Tessaban Nakhon Khon Kaen (Figure 3.3.3), including songteaw route map, songteaw exterior design, bus signage, and PR materials. The quality of this equipment is in moderate to good condition. As there are located in the public space and outdoor, the maintenance is required every month. Tessaban also use LINE bot system to get the report of damage and feedbacks from the users. However, the songthaew exterior design has been inspected by its operators.

Tessaban also has a plan to expand this output by their own budget and by private sector, especially bus operators. Currently, the owner of Smart Bus has a plan to improve the bus stop. The design would be like the bus stop in Khon Kaen University.

For the PR materials and songteaw route map, the collaboration with service's providers is

required to adjust and update the information. For the press-release, the information should be kept up with changes and progress of related projects to create awareness and recognition for project support.



Source: JICA Project Team

**Figure 3.3.3 Promotion Design for Public Transportation**

#### **4) Outcomes of the Pilot Project**

Along with the process of pilot project, it presented remarkable outcomes in several aspects especially strengthening the relationship and collaboration between Tessaban and bus/songteaw operators. The key outcomes from pilot project are listed as below.

- By starting from songteaw to promote public transport, which is a main and familiar transport mode for the citizens, they could easily accept and cooperate to use public transport more frequently.
- The above 3 projects cover not only songteaws but also other modes such as buses. This could help to develop comprehensive transport system by integrating demands and movements on several public transports mode.
- In the initial step for full-scale project implementation, Smart Mobility Committee, which consists of public, private, and academic sectors was established. Such kind of partnership advance further implementation of the projects effectively through collaboration among key stakeholders.
- In the above projects, songthaew owners were also well involved and proposed their

own ideas for future development. This also leads to effective implementation and completion of the project. Strong participation of the citizens in area design also makes a sense of belonging of the citizens.

#### **3.3.4 Lessons Learned**

Public transportation is an essential part of the city contributing to urban sustainability. Tassaban Nakhon Khon Kaen has used the public transportation as a key driver to promote the city in many aspects. Effective transportation network not only make cities livable by easing the people mobility and increasing accessibility but also lower the carbon footprint by sustaining environmental-friendly. Besides this, it is enhancing urban economies and improving livelihood.

**Holistic transportation and urban development:** In Tassaban Nakhon Khon Kaen, holistic transportation has been applied to promote its sustainability. Not only accessibility, affordability, and connectivity, but also the land use and environment has been prioritized in their plan. In other words, the urban elements; like street, sidewalk, bicycle route have been periodically developed in line with public transportation system. TOD has been efficiently addressed as a main concept to cope with the environmental, social, and economic challenges, such as climate changes, increased urban expansion, and rising energy consumption and traffic congestion with increasing urban density. With the impressive planning and development, Tassaban Nakhon Khon Kaen has been a role model for local cities in terms of public transportation development.

Along with these comprehensive development, Tassaban Nakhon Khon Kaen has been awarded by the APEC Low-Carbon Model Town Project, Dissemination Phase 2 on 21 October 2019. In relation to the public transport, the LRT project has been proposed as a part of reduction of greenhouse gas emission.

**Collaboration and network with other sectors:** In addition, the success of Tassaban Nakhon Khon Kaen also gained from the collaboration network. Khon Kaen has been the first local city in Thailand in establishing the company limited for operating transit system together with surrounding tassabans called KKTS. It was established because the public transport has not limited within one city but also affecting on the surrounding areas. This collaboration with surrounding tassabans is the ingenuity of the city in thinking outside the boxes. Besides KKTS, several agencies have provided a good support. Tassaban Nakhon Khon Kaen has a strong partnership network with Khon Kaen province, private sectors, community, and local universities who are willing to develop the city together.

The SFCI has potentially strengthened and expanded the partnership network, not only at local levels but also at national and regional levels. In addition, the connection with the other model cities was created mainly to exchange the knowledge and share local resources. The Tassaban themselves also felt happy to share their experiences to be useful for development of other cities.

**Challenge related to regulation and order:** Due to being first local city in developing holistic public transport development, the key challenge of Khon Kaen is regulation and orders. Multidisciplinary knowledge, such as urban planning, land use development, traffic,

and feeder system, is required to support the further development. In addition, the common understanding among relevant stakeholders must be created to support the further collaboration and investment.

### 3.4 Tessaban Mueang Krabi

#### 3.4.1 Overview and the SFC Plan of Tessaban Mueang Krabi

##### 1) Overview of Tessaban Mueang Krabi

Krabi province is in southern Thailand surrounded by mountains and the Andaman Sea. It is the center of Krabi Province in terms of economy, administration, and services. It is also the logistics, supplies, and service center for the beach resorts.

Krabi is a well-known tourism destination. The number of hotels there significantly increased, which signifies that Tessaban Mueang Krabi is growing because of its tourism industry. Particularly, the Tessaban supplies to surrounding businesses; even though Krabi is one of the tourist destinations in Thailand, most of the attractions are located outside of the Tessaban. There is still a lack of linkage between tourism attractions. To cope with this, Tessaban Mueang Krabi has highlighted art and culture to promote tourism.

The population in Tessaban Mueang Krabi has increased by 2% every year. Younger generations are likely to return to Krabi and work in the city center. This is because its tourism industry offers a lot of job opportunities including those in supporting businesses. However, there are few job opportunities for highly skilled returnees, those who grew up in Tessaban Mueang Krabi and left for higher education elsewhere. This is because of the limited number of highly skilled positions in the city.

##### 2) SFC Plan for Tessaban Mueang Krabi

To sustain its economic growth based on tourism, the conservation of its natural environment is essential. Its environmental and tourism resources should be carefully conserved and wisely utilized, particularly in the beach areas. Hence, collaboration at local, provincial, and regional levels is particularly needed for environmental protection.

To achieve this purpose, Tessaban Mueang Krabi has set "Art-Cultural City with Tourism" as its vision in the SFC Plan with consent from the PT members, since the integration of conservation and the promotion of environmental and cultural resources with CBT makes Krabi City more livable in terms of culture, environment, and economy.

The Tessaban's SFC vision and strategies are explained as follows:

##### **SFC Vision:** "Art-Cultural City with Tourism"

Strategy 1: Conservation and promotion of environmental and tourism resources

Strategy 2: Conservation and promotion of cultural and tourism resources

Strategy 3: Promotion of integrated community-based tourism

To sustain tourism in Krabi city center, art and culture have become highly essential resources. In fact, Tessaban Mueang Krabi has prioritized Strategy 2: Conservation and promotion of cultural and tourism resources. While tourism products in Krabi should be more valued and diversified to add to the sustainability of Krabi's economy, the Andaman Cultural Center and the Andaman OTOP shop were not able to be fully utilized in disseminating Andaman culture toward sustainable tourism promotion. However, the

Andaman culture is one of the Tessaban's aspirations on urban development together with human resource development under the overarching concept of a unique Andaman culture that will make Krabi more livable and function as a viable basis for unique city tours.

The SFC program and the JICA pilot project are summarized in Table 3.4.1.

**Table 3.4.1 Selection of SFC Program for Tessaban Mueang Krabi**

SFC Program	<p><b>Enhancement on Dissemination of Andaman Culture</b></p> <ul style="list-style-type: none"> <li>• Improvement of facilities in Andaman Cultural Center</li> <li>• Development of Andaman OTOP Shop</li> <li>• Marketing and public relation promotion</li> <li>• Promotion of art activities and cultural learning and teaching</li> <li>• Establishment of local support volunteers' group and their activities</li> <li>• Krabi Biennale 2018</li> <li>• National artists exhibition</li> <li>• Development of international art hall workshop</li> <li>• The construction of international art hall building</li> <li>• Construction of historical tracing ship</li> <li>• Promotion of Andaman Community Tourism</li> </ul>
JICA Pilot Project	<p><b>The project for improvement on Entrance Area of Andaman Cultural Center, Design and Construction of Local Beverage and Sweets Shop and Marketing and Public Relation Promotion</b></p> <p>Sub-project 1: Improvement of entrance area of Andaman Cultural Center  Sub-project 2: Design and construction of local beverage shop  Sub-project 3: Marketing &amp; public relations promotion</p>
Action Plan	<p><b>Five Year SFC Action Plan for Sustainable Tourism Destination</b></p>
Expected output of SFC Program	<ul style="list-style-type: none"> <li>• Increase of visitors of Andaman Culture Center through collaboration with the other tourism destinations.</li> <li>• Increase of tourists visiting historical and cultural sites in Krabi Municipality through Community-based Tourism.</li> <li>• Revitalization of agricultural industry and relevant local industry</li> <li>• Increase of employment opportunities.</li> </ul>
Long-term impact of SFC Plan	<ul style="list-style-type: none"> <li>• Establishment of distinguished cultural tourism hub for people in the tessaban Krabi and neighboring communities as well as domestic and international tourists, which will promote sustainability of Krabi and surrounding area<sup>1</sup></li> <li>• Provision of lessons learned for other tourism cities, in terms of coordination between tessaban and regional tourism, community-based tourism, strategic tourism marketing, etc.</li> </ul>

Source: JICA Project Team

To select the JICA pilot project, primary and secondary data were collected to understand the actual situation. Interviews and questionnaires were conducted together with the secondary data collection. Using the data collected, a public participatory process was held through stakeholder engagement and a co-creation workshop to crystalize the demands of its citizens and set the development direction for the Tessaban.

As a result, three (3) projects were selected and packaged as the JICA pilot project to maximize the benefits of existing and planned facilities in the dissemination of Andaman culture. These are: (i) Improvement on entrance area and inside the Beads Museum, (ii) Local beverage shop (coffee shop) that will be set up in the Andaman OTOP shop area, and (iii) Marketing and public relations based on a coordination with relevant stakeholders. These three projects were integrated to demonstrate holistic thinking and achieve

sustainable management and development.

The tourism industry is the main driver of the Tessaban's economy. To achieve the vision of an art-cultural city with tourism, the three (3) strategies under the SFC Plan were elaborated into a five-year action plan with short-term projects. The key purpose of the action plan is to sustain tourism in Krabi in terms of culture, environment, and economy. The details of each strategy are described below.

- **Strategy 1: Conservation and promotion of environmental and tourism resources**

This strategy focuses on tourism development balanced with natural and environmental conservation. As most tourist attractions rely on nature and the environment, it is necessary for the city to preserve the quality of its environment. The goal of this strategy is to sustain the beach tourism industry by preserving the environment and sustaining the economy. To accomplish this goal, the conservation of natural ecosystems should be developed together with human development. Therefore, two (2) programs were proposed in this strategy along with a project list as below.

**Table 3.4.2 Projects under Strategy 1 Conservation and Promotion of Environmental and Tourism Resources**

No.	Name of Project	Description	Duration	Budget	Organization
<b>Program 1-1: Awareness campaign for conserving natural and environmental resource</b>					
1	Training environmental volunteer	-Organize the community leaders workshop in Tessaban Krabi area and found the environmental voluntary groups in 14 communities (with 80 members in total). -Offering training course for people -Office materials -Lunch, snack and refreshments	2018–2022	100,000	Tessaban
2	Campaign for environmental conservation and education institution sustainably.	-Organize the community leaders workshop in Tessaban Krabi area and found the environmental volunteer groups in 14 communities (with 80 members in total). -Launch environmental conservation campaigns in communities and academia under Tessaban (1 activity per 1 institute).	2018–2022	350,000	Tessaban



No.	Name of Project	Description	Duration	Budget	Organization
3	Campaign for creating community's forest in Ban-Hin-Kwang	-Organize a reforestation project. The participants were children, youth and adults. 500 trees will be planted including sago trees and cork trees.	2018–2019	100,000	Tessaban
<b>Program 1-2: Conservation of natural and environmental resources</b>					
4	Green area development (Pa-Nu-Rat community, Pa-Wat-Panurat)	- The 1 <sup>st</sup> public participation - Buddhist proverbs on boards - Tree tags - Activities to maintain trees	2018–2022	250,000	Tessaban
5	Development of 5 sub-programs about sustainable urban environment	- Conservation tourism - Waste management - Cultural and traditional conservation, and the maintenance of public spaces - Sufficiency economy	N/A	N/A	N/A

Source: JICA Project Team

- **Strategy 2: Conservation and promotion of cultural and tourism resources**

In this strategy, the promotion of art and culture are emphasized to sustain cultural tourism in Krabi city center. As an art and cultural center, the Andaman Cultural Center promotes the conservation and dissemination of cultural resources, and as such, its facilities should be developed. Meanwhile, human resources should be capacitated to optimize local resources. This strategy has two (2) programs with 15 projects, the details of which are described in Table 3.4.3.

**Table 3.4.3 Projects under Strategy 2 Conservation and promotion of cultural and tourism resources**

No.	Name of Project	Description	Duration	Budget	Organization
<b>Program 2-1: Enhancement on dissemination of Andaman Culture</b>					
1	Improvement on facilities in Andaman Cultural center	(1) Improvement on entrance area and inside the Beads Museum	2018	JICA Pilot Project	JICA Pilot Project
		(2) Improvement on roof of the arcade	2018	2,700,000	Tessaban
		(3) Improvement on souvenir shop, packaging design (4) Improvements on circulation of art exhibition	2018	1,800,000	Tessaban
2	Local Community Products and Andaman OTOP Shop Development	(1) Construction of Andaman OTOP Shop (2) Interior design which is divided provinces into 5 zones such as; Phuket, Phang Nga, Krabi, Ranong, and Trang (3) Products and goods storage room	2018	21,000,000	Community Development Department and Tessaban
		(4) Local beverage shop (Coffee Shop) that will be located at Andaman OTOP Shop area.	2018	JICA Pilot Project	JICA Pilot Project
3	Marketing and public relation promotion based on the coordination with relevant stakeholders.		2018	JICA Pilot Project	JICA Pilot Project
4	Promotion of art activities and cultural learning and teaching		2018–2022	100,000	Tessaban
5	Establishment of local supporter/volunteer groups and their activities		2018	50,000	Tessaban
6	Thailand Biennale Krabi 2018 (International Contemporary Art Show)		2019	50,000,000	Krabi Cultural Office and Tessaban
7	National Artists Exhibition		2018	1,000,000	Tessaban
8	International Art Workshop		2018–2022	10,000,000	Tessaban
9	International Art Hall – Phase 2		2020	88,000,000	N/A
10	The Historical Tracing Ship		2019	32,000,000	N/A
11	The Andaman Community Tourism		2019	32,000,000	N/A
<b>Program 2-2: Development of human resources based on the “acceptance of diversity and coexistence” of Andaman art and culture</b>					
12	Local art and culture curriculum		N/A	N/A	Tessaban
13	Signed MOU with education institution to develop quality of education and Andaman cultural center		N/A	N/A	Tessaban
14	Encourage local scholars into children and student learning based on signed MOU		N/A	N/A	Tessaban
15	Promoting art and culture activities by national and local artist focusing on student’s participation		N/A	N/A	Tessaban

Source: JICA Project Team

- **Strategy 3: Promotion of Integrated Community Based Tourism (CBT)**

This strategy aims to provide job opportunities to the communities through tourism development and to improve tourism facilities and infrastructure. To achieve this, the city tour and sightseeing program in Tessaban Mueang Krabi are promoted. Local products provide with added value together with a marketing plan. Accessibility should be improved to facilitate the participation of tourists in local activities. Also, to ensure implementation, the operations and management should be highlighted. This strategy consists of three (3) programs with 13 projects. The details of projects under this strategy are summarized below.

**Table 3.4.4 Projects under Strategy 3 Promotion of Integrated Community-based Tourism**

No.	Name of Project	Description	Duration	Budget	Organization
<b>Program 3-1: Development of tour program/ package</b>					
1	Feasibility Study on the price and contents of the package.		N/A	N/A	Tessaban
2	Determination of number of trips/day and the suitability of each cycle time based on the coordination with relevant stakeholders (e.g. Tourism Council of Thailand)		N/A	N/A	Tessaban
3	Marketing promotion and public relation based on the coordination with relevant stakeholders (e.g. TAT, Tourism Business Association).		N/A	N/A	Tessaban
<b>Program 3-2: Establishment of access routes with necessary transportation and facility</b>					
4	Selection of transport mode and route		N/A	N/A	Tessaban
5	Planning and development of the necessary facilities for CBT		2019–2020	3,950,000	Tessaban
6	Procurement of necessary vehicle such as Tourism Buses and Boats		2019–2020	3,040,000	Tessaban
7	Construction of Food Safety Center, the Community Souvenir Shop		2019–2020	2,055,000	Tessaban
8	Local Community Souvenir Shop and the construction of embankment to prevent river's erosion		2019–2020	1,955,000	Tessaban
9	Floating Market in front of Krabi City		N/A	N/A	Tessaban
10	Footpath Improvement		N/A	N/A	Tessaban
<b>Program 3-3: Establishment of operation and management system</b>					
11	Recruitment for project operation and management		N/A	N/A	Tessaban
12	Capacity enhancement for operation and management		N/A	N/A	Tessaban
13	Environmental development for ecotourism		2018	243,504.62	IGES

Source: JICA Project Team

While the action plan has not only reflected the places in the city, it has also considered the people's (or community) welfare. As a product of community pride, culture, and sharing stories, sustainable destinations should be created together with residents' well-being and better quality of life. Moving forward, the action plan helps push tourism development in Krabi toward sustainability in all aspects. Environment and local culture will be preserved, while communities will gain more opportunities to generate income.

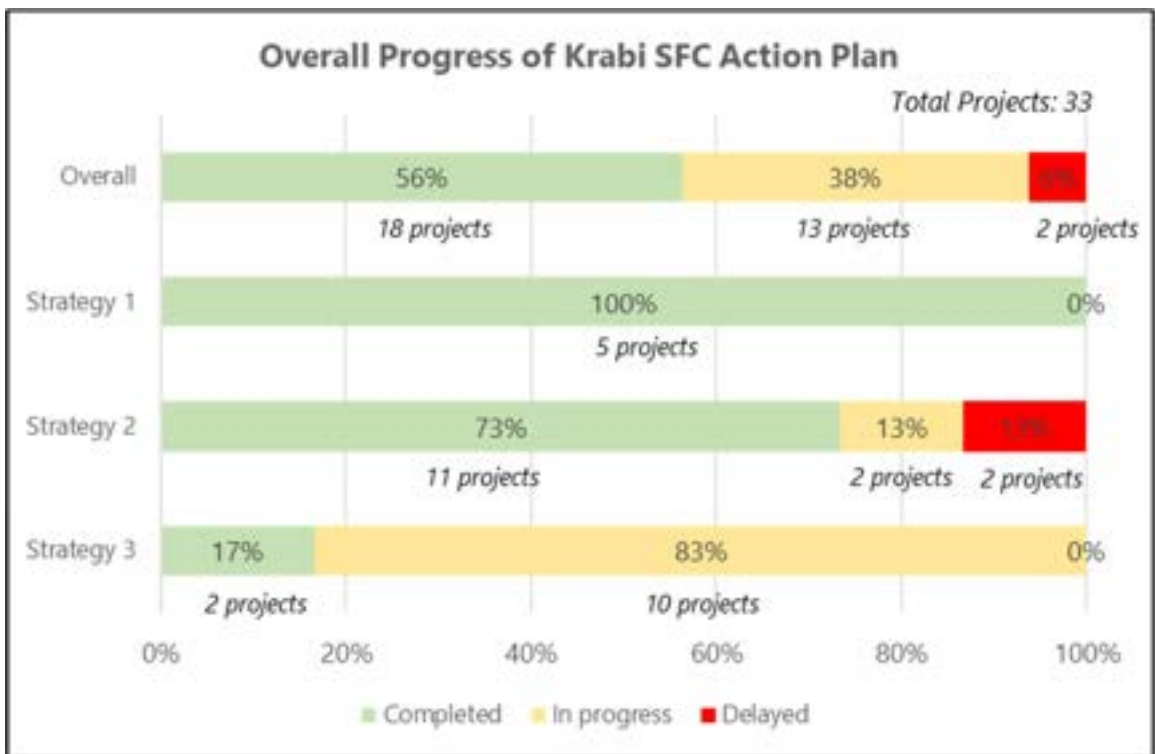
### **3.4.2 Progress of the SFC Plan**

In this section, the progress of the five-year action plan for Sustainable Tourism Destination is examined. The factors that pushed the action plan forward or otherwise are identified, namely the potential budget and relevant organizations. The causes of project delay and the challenges faced by the Tessaban are explained. The reorientation and additional projects to achieve sustainable tourism are also highlighted.

The five-year action plan for Sustainable Tourism Destination has been mainly implemented by Tessaban Mueang Krabi. To complete the action plan, the Tessaban has integrated most projects into the LSDP which allows the Tessaban to request for annual budget for its implementations. Under the LSDP, the proposed projects have not been only recognized by the national government, especially DLA, but have also complied with the vision of Art-Cultural City with Tourism. Accordingly, the outcomes of the project were beyond the tourism sector, but the quality of life was also reflected in the plan.

In addition to this, Tessaban Mueang Krabi has proposed some projects requiring a big budget to the Andaman Provincial Cluster. Mainly, the proposed projects must be related and beneficial to the region. However, it seemed like the process was more difficult than LSDP. This is because it required more approvals and project details.

Interestingly, some projects in the action plan have been implemented as activities with community. The good thing was that such activities did not require financial support, so the Tessaban implemented them by themselves. Accordingly, the Tessaban could get a common understanding with its citizens. This was very useful for other related projects too because the outcomes could be visually realized by relevant organizations. Therefore, it would be easier for the Tessaban to get further support either in the form of budget or advice.



Source: JICA Project Team

**Figure 3.4.1 Overall Progress of the Krabi SFC Action Plan**

The action plan consists of three (3) strategies with 33 projects in total. In the overall progress, 56% of the action plan have been completed, 38% of which are under the process of implementation and budget’s requests, while only 6% had been delayed mainly because of COVID-19 prevention measures and budget limitation.

Looking at the progress of each strategy, Strategy 1 has shown significant progress. The projects in this strategy have been fully completed. Meanwhile, the progress of Strategy 2 has been done about 71%, 13% of which are under the process, while 16% had been delayed or not been implemented as planned. The last strategy has shown slow progress; only 17% of its projects has been completed, while 83% are still looking for budget and collaboration.

The details of each strategy are described below.

- **Strategy 1: Conservation and promotion of environmental and tourism resources**

Strategy 1 consists of two (2) programs with five (5) projects. All projects have been completed but expected to continue in the future. The projects were implemented as activities operated in communities. Successfully, this strategy has been achieved its expected outcomes. The people have more awareness and knowledge on environmental preservation. The awareness of people in the first program has been outstanding. The campaign on environmental conservation has attracted the people to participate in the program, while the forest area has also been increased. To achieve this, the training of environmental volunteers was a high impact as the projects have built the knowledge on environmental conservation; accordingly, the number of environmental volunteers continually increased.

In the second program, the Tessaban collaborated with the office of non-formal and informal education department to provide knowledge on vegetables and to promote the projects. This created a green area in the community. At the same time, with knowledge/capacity building, the citizens could earn from farming different types of vegetables or grow them for their personal consumption.

Due to the COVID-19 pandemic, these projects were suspended. Social gatherings and training were limited in number. However, the Tessaban continually recruited new volunteers for the next year. Also, to respond to the COVID-19 pandemic, the Tessaban adjusted some training programs and PR activities to promote environmental-friendly and good public health.

Another constraint was the lack of knowledge or experts on waste management. The project 5 Development of 5 sub-programs about sustainable urban environment already created the prototype community for sustainable environment, particularly in waste recycling. However, the dissemination of this project was difficult because the different areas had different issues and focuses. Without the experts, collaboration with the public, private, and civil sectors became more difficult. The community did not truly understand the benefits and their context while they have no direction. In addition, the budget allocation was burdensome.

The progress of projects under this strategy are summarized in Table 3.4.5.

**Table 3.4.5 Progress of Strategy 1: Conservation and Promotion of Environmental and Tourism Resources**

No.	Name of Project	Status			Relevant Org.	Key Constraint					
		Plan	Prep	Imple		Detail	COVID-19	Budget	Reg.	Research	Personnel
<b>Strategy 1: Conservation &amp; promotion of environmental and tourism resources</b>											
<b>Program 1-1:</b> Awareness campaign for conserving natural and environmental resource											
1	Training environmental volunteer	●	●	●	People have awareness on environmental management and the number of environmental volunteers has increased.	Tessaban					Implemented for 2 years but suspended in 2020 due to COVID-19. Application was opened in 2021.
2	Campaign for environmental conservation and education institution sustainably	●	●	●	It has been implemented continuously leading to self-reliance and participation of community for environmental conservation.	Tessaban					The training in 2020 was implemented for environmental and health in term of the COVID-19 prevention measure and community cleaning.
3	Campaign for creating community's forest in Ban-Hin-Kwang	●	●	●	The project was completed as planned (2018-2019). It has been continued in 2021 without requesting budget.	Tessaban					It was not implemented in year 2020 due to the COVID-19.
<b>Program 1-2:</b> Conservation of natural and environmental resources											
4	Green area development (Pa-Nu-Rat community, Pa-Wat-Panurat)	●	●	●	It created knowledge of vegetation species for community. Office of the Non-Formal and Informal Education helped PR and disseminate knowledge of vegetation species.	Tessaban, Office of the Non-Formal and Informal Education					The project has been delayed due to COVID-19 situation in 2020 and 2021
5	Development of 5 sub-programs about sustainable urban environment	●	●	●	It was completed and the Tessaban became a prototype for sustainable environment with public participation for waste recycling.	Tessaban					Lack of knowledge and budget for the integration that involve the participation from public, private, and community.
<b>Remark:</b>						<b>Remark:</b>					
On plan						Causes of delay are COVID-19, budget, regulation, required further research or information, and skills of personnel.					
In process											
Delayed											

Source: JICA Project Team



- **Strategy 2: Conservation and promotion of cultural and tourism resources**

This strategy consists of two (2) programs with 15 projects in total. Program 2-1: Enhancement on dissemination of Andaman Culture covers 11 projects, while Program 2-2: Development of human resources based on the “acceptance of diversity and coexistence” of Andaman art and culture has four (4) projects. In the overall perspective, seven (7) projects were completed, while two are underway. The rest are delayed mainly due to limited budget and capacity of personnel.

In Program 2-1, the Andaman Cultural Center has been the focus, aiming to disseminate the precious cultures existing along the Andaman coast. The center has integrated the culture and art from five (5) provinces, i.e., Krabi, Phuket, Phang Nga, Ranong, and Trang. Most of the projects are related to construction to improve the facilities at the center. Under this program, seven (7) projects were already completed. Even though the construction was completed, the operations and activities have been continually promoted by the Tessaban.

To achieve the goal of disseminating Andaman culture, the Tessaban collaborated with several organizations both in terms of financial and technical support. As the center promotes a holistic image of Andaman culture, the Tessaban received a budget from the provincial cluster to construct an OTOP center. For a similar reason, the project on International Art Hall was supported by a specific subsidy from the Department of Local Administration (DLA). With a wider perspective and development, Tessaban Mueang Krabi has extended their connections while gaining various support from the national government.

Additionally, the Tessaban has continually developed the capacity of their own staff and volunteers by enriching their knowledge of local culture. In this term, the Tessaban expects its citizens not only to know more about the local culture but also to become instructors or local guides for the city. At the same time, art and culture activities have been promoted. Local artists from different places expressed their feelings for Tessaban Mueang Krabi in an artwork, while the citizens and students also joined these activities. Such activities have inspired the locals and impressed the visitors when they traveled to Tessaban Mueang Krabi.

However, some activities and ongoing projects faced with the challenges of COVID-19. Due to COVID-19 prevention measures, activities, workshop, and demonstration of artworks had to be suspended. There were two (2) projects that had been delayed. The key challenge of these projects is financial support. Even though the Tessaban already prepared the detailed design and BOQ for the construction, the project was rejected due to insufficient budget. On the one hand, it can consider that the COVID-19 has been considered as a highest priority. The budget for investment must be shared to support the pandemic countermeasures. On the other hand, some citizens did not fully agree on the project. For instance, for Project 10 The Historical Tracing Ship, the community disagreed because the city scenery will be blocked by this construction.

Program 2-2: Development of human resources based on the “acceptance of diversity and coexistence” of Andaman art and culture consists of four (4) projects, most of which are related to human development, such as training and curriculum, and the collaboration for further research. All projects were completed, and the outcome has been disseminated and

expanded to the other age groups.

The progress of projects under this strategy is summarized in Table 3.4.6.

**Table 3.4.6 Progress of Strategy 2: Conservation and Promotion of Cultural and Tourism Resources**

No.	Name of Project	Status			Relevant Org.	Key Constraint				Remark		
		Plan	Prep	Imple		Detail	COVID-19	Budget	Reg.		Research	Personnel
<b>Strategy 2: Conservation &amp; promotion of cultural and tourism resources</b>												
<b>Program 2-1: Enhancement on dissemination of Andaman Culture</b>												
Improvement on facilities in Andaman Cultural center												
1	(1) Improvement on entrance area and inside the Beads Museum	■	■	■	It was completed as a JICA Pilot Project. The visitor number of Andaman Cultural Center has increased after the improvement	Tessaban with support from local artists						It may cause inconvenient for visitors if the center is under the renovation.
	(2) Improvement on roof of the arcade	■	■	■	Completed	Tessaban						
	(3) Improvement on souvenir shop, packaging design	■	■	■	Completed	Tessaban						
	(4) Improvements on circulation of art exhibition		□		It is under the planning process. The implementation will be started once the COVID-19 situation is improved	Tessaban and Local artists						The exhibition was delayed and postponed due to COVID-19
2	Local Community Products and Andaman OTOP Shop Development											
	(1) Construction of Andaman OTOP Shop	■		●	The OTOP center was completed with the Andaman Provincial Cluster Budget. It is under the process of enterprise/seller selection for selling OTOP product at the center	Tessaban Community Development Office						The operation of OTOP center has been delayed due to the COVID-19
	(2) Interior design which is divided provinces into 5 zones such as; Phuket, Phang Nga, Krabi, Ranong, and Trang											
	(3) Products and goods storage room											
	(4) Local beverage shop (Coffee Shop) that will be located at Andaman OTOP Shop area.	●		●	It was completed as the JICA Pilot Project. Community member is operating the shop under the operation and management of Tessaban	Tessaban Community						
3	Marketing and public	●		●	Tessaban Mueang Krabi has	Tessaban						

**Final Report, Vol. 2: Model City Projects**

No.	Name of Project	Status				Relevant Org.	Key Constraint								
		Plan	Prep	Imple	Detail		COVID-19	Budg et	Reg.	Resear ch	Person nel	Remark			
	relation promotion based on the coordination with relevant stakeholders.				continuedly promoted on culture and tourism of Krabi via website and social medias in order to represent the uniqueness of Krabi and increase the number of visitors.										
4	Promotion of art activities and cultural learning and teaching		●	●	It was implemented in 2018-2019 to develop quality of education.	Tessaban, Local artists, Educational Institutions									The project was delayed in year 2020 and 2021 due to the COVID-19
5	Establishment of local supporter/volunteer groups and their activities		●	●	The local volunteer can introduce the statues and arts in Krabi	Tessaban									The implementation was delayed due to COVID-19
6	Thailand Biennale Krabi 2018 (International Contemporary Art Show)		●	●	The activities for local artists to create the artwork related to Krabi's identity and uniqueness will be operated in 2022	Tessaban, Cultural Office, Local artists									The implementation was delayed due to COVID-19
7	National Artists Exhibition		●	●	The exhibition for national artists to share their artwork and experiences for inspiring children and youth was completed	Tessaban, National artists									The operation of exhibition has been suspended due to COVID-19 for 2 years
8	International Art Workshop		●	●	The activities and exhibition have been operated as well as art teaching to children and people	Tessaban									The project has been suspended due to COVID-19 for 2 years
9	International Art Hall – Phase 2		■	□	The hall is under the construction with the specific subsidy from DLA under the regional integration special development plan FY2020. It is expected to be completed in September 2021	Tessaban DLA									
10	The Historical Tracing Ship		■		The detail design with BOQ was prepared for requesting the budget, but the project was not approved due to the insufficient	Tessaban									Some people disagree with the tracing ship construction because it will block the unique mountain scenery of Krabi city

No.	Name of Project	Status			Relevant Org.	Key Constraint							
		Plan	Prep	Imple		Detail	COVID-19	Budget	Reg.	Research	Personnel	Remark	
11	The Andaman Community Tourism		■		The detail design with BOQ was prepared for requesting the budget, but the project was not approved due to the insufficient budget	Tessaban							The project's budget was not approved from provincial and provincial cluster for FY2019
<b>Program 2-2: Development of human resources based on the "acceptance of diversity and coexistence" of Andaman art and culture</b>													
12	Local art and culture curriculum		■	■	Art and culture curriculum was completed	Tessaban							
13	Signed MOU with education institution to develop quality of education and Andaman cultural center		■	■	MOU was signed with academic institution to develop quality of education and Andaman Cultural Centre	Tessaban, academic institution							
14	Encourage local scholars into children and student learning based on signed MOU		●	●	It was completed for promoting local scholar into learning curriculum for children	Tessaban							
15	Promoting art and culture activities by national and local artist focusing on student's participation		●	●	It was completed for promoting local scholar into learning curriculum for children	Tessaban							
		<b>Remark:</b>											
		On plan	●	Keep implementing									
		In process	■	Done									
		Delayed	□	Under the process									
		<b>Remark:</b>											Causes of delay are COVID-19, budget, regulation, required further research or information, and skills of personnel.

Source: JICA Project Team

- **Strategy 3: Promotion of integrated community-based tourism (CBT)**

This strategy consists of three programs with 13 projects. Program 3-1: Development of tour program/ package has three (3) projects. Program 3-2: Establishment of access routes with necessary transportation and facility has six (6) projects. The last, Program 3-3: Establishment of operation and management system, has three (3) projects.

The projects under Program 3-1: Development of tour program/ package have been reintegrated into 'the campaign of #Goodthings in Krabi are not only the beach'. This project collaborates with several organizations aiming at promoting travel and developing destinations in Krabi. A tourism route which takes 2 days and 1 night was created, focusing on traveling in the city center. To achieve the purposes of this project, the Tessaban collaborated with several agencies for technical support to design the tourism program. At the same time, local citizens also helped with the trip design. Interestingly, the Tessaban has not used any additional budget for this campaign as it only provided personnel to collaborate with stakeholders to prepare the plan. However, the promotion of this campaign had been suspended due to COVID-19 prevention measures.

Similarly, the projects under Program 3-2: Establishment of access routes with necessary transportation and facility had been integrated into 'the Project for Tourism and Trade Development Project through Local Livelihood of Krabi Old Town". This project focuses on Baan Hin Kwang pier and floating market while developing the tourism application to integrate all attractions into one platform. This project was delayed because the Tessaban's request for budget from the Regional and Integration Budget FY2019 and Andaman Provincial Cluster budget FY2019 was rejected. However, currently, the Tessaban already got a budget support for FY2021 from the Andaman Provincial Cluster under the project for economic and community rehabilitation based on local opportunities and potentials.

As for Program 3-3: Establishment of operation and management system, there are two (2) completed projects. The operations and management plan and staff had been prepared to serve the tourists and visitors in Krabi city. A new eco-tourism destination was also completed to promote ecotourism, preserve the ecology, and spread the learning to the citizens. However, the OTOP has not been operated yet; some projects and actions have been delayed.

The progress of each project under this strategy is summarized in Table 3.4.7.

**Table 3.4.7 Progress of Strategy 3: Promotion of Integrated Community-based Tourism (CBT)**

No.	Name of Project	Status			Relevant Org.	Key Constraint					
		Plan	Prep	Imple		Detail	COVID-19	Budget	Reg.	Research	Personnel
<b>Strategy 3: Promotion of integrated community-based tourism (CBT)</b>											
<b>Program 3-1: Development of four program/ package</b>											
1	Feasibility Study on the price and contents of the package.		<input type="checkbox"/>		Tessaban Mueang Krabi has discussed with several sectors; like government, private sector, community, and other relevant groups to formulate the tourism route in the city under the campaign of #Goodthings in Krabi are not only the beach for 2 days and one night for FY 2022	Tessaban, Public orgs., Private orgs, Community					
2	Determination of number of trips/day and the suitability of each cycle time based on the coordination with relevant stakeholders (e.g. Tourism Council of Thailand		<input type="checkbox"/>		- Day 1: 'Let's travel with local boats to see the mountains. Travel here, you will not be alone, see the local lifestyle at Baan Koh Klang' - Day 2: 'Visit city, See the Crab, Tracing Art Sculptures and Ancient civilizations'						
3	Marketing promotion and public relation based on the coordination with relevant stakeholders (e.g. TAT, Tourism Business Association).		<input type="checkbox"/>								
<b>Program 3-2: Establishment of access routes with necessary transportation and facility</b>											
4	Selection of transport mode and route		<input checked="" type="checkbox"/>	<input type="checkbox"/>	These projects were combined as "Tourism and Trade Development Project through Local Livelihood of Krabi Old Town"	Tessaban, Baan Hin Kwang Community					The project was not given budget from the Regional and Integration Budget FY2019 and Andaman Provincial Cluster budget FY2019
5	Planning and development of the necessary facilities for CBT		<input checked="" type="checkbox"/>	<input type="checkbox"/>	The Baan Hin Kwang pier and floating market is now under construction by installing the light for these attractions at Plub Pla road and create the new application to promote						The project was supported through Andaman Provincial Cluster budget FY2021 under the project for economic and community rehabilitation based on local opportunities and
6	Procurement of necessary vehicle such as Tourism Buses and Boats		<input checked="" type="checkbox"/>	<input type="checkbox"/>							
7	Construction of Food		<input checked="" type="checkbox"/>	<input type="checkbox"/>							





To conclude, the action plan of Tessaban Mueang Krabi was prepared with a tourism focus especially art and culture in the Tessaban. Likewise, it will not only benefit tourism businesses; but income generation will also affect the local people's quality of life.

The key success of Tessaban Mueang Krabi is the determination of the Tessaban. Even though the projects were rejected, the Tessaban has continually looked for budget from different sources. Also, to visualize the outcome of project, the Tessaban implemented various activities without any budget. This must have persuaded the community to join the project and benefit from it. Along with these actions, the projects had been approved and optimized their benefits to the people.

Another challenge is the balance between natural conservation and new development or construction. The community has different perspectives to develop the city. Some city elements are needed to be preserved while some new developments should be promoted to generate more income and increase employment. In this case, it is essential for the Tessaban to balance development and people's needs. Feasibility studies are needed for projects to be further considered by the community. Also, collaboration with academic institutions and their technical support are needed for the Tessaban to decide on further development.

As the action plan is mainly related to tourism development, COVID-19 was a big challenge for the Tessaban. Many activities have been suspended while the number of tourists and visitors decreased due to the travel restriction. However, the Thai government had an initiative to promote the tourism in local city. The Tessaban has gained some budgets support from The Emergency decree Loan for helping people and improving the economy to promote their tourism development. For instance, the project for tourism and trade development through local livelihood of Krabi old town by developing the application of Krabi tourism gained a support to promote the tourist attractions in Krabi province.

Under this action plan, the Tessaban has highly prioritized human development and citizens' income. These are key concerns of the city to achieve sustainability in the future. The quality of people's life is expected to improve through tourism development. In other words, income generation and job opportunity are important to enhance the citizens' life. Also, the people are highly participative in the development which helps sustain the project. The sense of belonging has been built throughout the planning process, so the citizens can freely propose their ideas and concerns. This is potentially benefited for the city in future. By utilizing local resources, environment, and nature, the Tessaban can develop attractive destinations and attract more visitors.

### **3.4.3 Status and Future Direction of the Pilot Project**

This section focuses on the status of the pilot project supported by JICA. This also aims to evaluate how the Tessaban utilizes the output of the pilot project and how do they operate and maintain the quality of project construction. Some challenges and plans are also identified.

The JICA pilot project in Tessaban Mueang Krabi is the project on improving the entrance area of the Andaman Cultural Center, design and construction of local beverage and sweets

shop, and marketing and public relations promotion. There are three (3) components implemented under the JICA pilot project, and these are summarized in Table 3.4.8.

**Table 3.4.8 Outputs of the JICA Pilot Project by Component**

	<b>Component</b>	<b>Output</b>
1	Improvement on entrance area and inside the Beads Museum	The entrance areas of the Andaman Cultural Center, covering the entrance gate, parking areas, and pedestrian walkway, were renovated to enhance its physical appearance and showcase the town's cultural identity. A detailed design improvement plan was also prepared for other areas based on the Andaman Cultural Center Master Plan, which was formulated through participatory planning
2	Local beverage shop (Coffee Shop) in front of Andaman OTOP Shop	Local Beverage Shop, which was established to promote local products, is expected to become the hub for CBT and a PR platform for local communities
3	Marketing and public relation promotion based on the coordination with relevant stakeholders	<p><u>Development of a Unique Selling Point (USP):</u></p> <ul style="list-style-type: none"> <li>✧ Items being sold at the local beverage shop, such as grilled sweet corn unique to Krabi, were designed by the local communities and integrated as the shop's brand and promotion of CBT.</li> <li>✧ A logo for "Krabi Link" was designed as the symbol or brand representing the uniqueness of Krabi.</li> </ul> <p><u>Hosting an Event at the Center to Introduce Andaman Culture, Arts, and CBT:</u></p> <ul style="list-style-type: none"> <li>✧ The ceremony to mark the reopening of the Center after its renovation revolved around the concept of "together is better."</li> </ul>

Source: JICA Project Team

The overall condition of the pilot project is good. The Tessaban regularly checks for damages and errors in its function. The budget for the project's operation and maintenance is also considered to improve the service at the Andaman Cultural Center.

After the improvement of the Andaman Cultural Center, including the Beads Museum and construction of local beverage shop, the number of visitors significantly increased. Most of them visited the Center as a study tour to learn about the art and culture of Krabi. Obviously, COVID-19 has highly impacted the center. Before COVID-19, there were about 300 visitors per day. However, the prevention measure of COVID-19 caused the temporary closure of the center periodically as travelling had been restricted. Even though the museum, art exhibition, and the other activities in the center were reopened under the COVID-19 measures, the number of visitors had not reached the expected number.

COVID-19 has impacted the OTOP shop located in the Andaman Cultural Center. The opening had to be postponed. However, the Tessaban is starting to look for staff to sell product at the OTOP shop to enhance the performance and service of the local beverage shop. The Tessaban also plans to conduct workshop-trainings for maximizing potential of OTOP sellers for FY2022 with 30,000-baht budget. The training seller's capability will be able to promote the efficiency of operation. Both online and offline markets are also considered in the plan. "Tessaban OTOP market" page has been created on Facebook as an alternative selling site and PR channel.

## 1) Improvement of entrance area and the Beads Museum

The Andaman Cultural Center Committee was established to operate the center. By coordinating with relevant stakeholders, the Tessaban and the committee can monitor the performance of the center and inspect the further improvement. In addition, the Tourism and Sport Promotion Division of Tessaban Mueang Krabi takes the main responsibility for the Andaman Cultural Center and be the main coordinator with the Andaman Cultural Center Committee.

The improvements to the entrance area and the Beads Museum are in good condition with routine inspection from the Tessaban to ensure that the Center will be ready for welcoming and impressing visitors.

The detailed designs were added into the LSDP for budget allocation in FY2018-2020. The installation of a kiosk, plants, seats, and open space was completed. The Tessaban plans to continuously maintain the condition of those items to facilitate the visitors. For the parking extension, it is under the survey and design processes.



Source: JICA Project Team

**Figure 3.4.2 Andaman Cultural Center**

## 2) Local Beverage Shop

The operations and management (O&M) of the shop is jointly done by the Tessaban, private operator, and local communities. Mainly, the O&M team select the sellers and report the quality of construction and further requirements of citizens. Although the shop was originally planned to be operated by the O&M team, the shop has been individually operated by local people.

In terms of operation, the local beverage shop is a free location to sell beverages and local products. The seller has to pay only some operating costs, such as electric and water supply, by themselves. The buyers in this shop are the visitors to the Andaman Cultural Center. As the Andaman Cultural Center had to be temporarily closed during the COVID-19 pandemic, the sellers faced financial problem for its operation. Even though the location can be used free of charge, there are still costs for ingredients and operating costs.

While the local beverage shop is in a good condition, the design of the structure causes water leakage during rains. Currently, the Tessaban is trying to solve this problem.

For post COVID-19, the O&M team of Tessaban Mueang Krabi aims to link the local beverage shop with the Andaman OTOP shop to attract more visitors and enhance the local

beverage shop business.



Source: JICA Project Team

**Figure 3.4.3 Local Beverage Shop**

### **3) Marketing and Public Relations**

This project has been obviously strengthened the local communities. The uniqueness of local products has been highlighted and upgraded. As the community gained unique selling point knowledge from the pilot project, the community can optimize and add value to their products along with a marketing strategy.

Some local products sold at the local beverage shop have not been popular as expected. Mainly, the product identity, like grilled sweet corn, should be sold at the local community to get a sense of local foods. Also, to get an original taste, fresh production is highly required. By selling at the local beverage shop, the products should be upgraded to serve souvenirs.

As mentioned above, COVID-19 has affected the operation of the Andaman Cultural Center and the local beverage shop. Accordingly, the sales of local products also dropped. The cost of ingredients and production impacted the sellers. However, Tessaban Mueang Krabi initiated new projects to promote local foods under through workshop-trainings for maximizing the potential of OTOP sellers. The training of local entrepreneurs was promoted to maximize their capability to sell the local products in both online and offline channels. Also, the Tessaban established the "Tessaban OTOP market" page on Facebook to be an alternative for entrepreneur to promote their shop and products. In the future, local products are also expected to be promoted at the OTOP center located in the Andaman Cultural Center premises.

Also, the Tessaban has another project to identify and upgrade the value and uniqueness of local products under the project for creating local product innovation. The main purpose of this project is to reduce the income gap and promote income equity. At the same time, the community will be strengthened, while the income will be generated and equally distributed. Under the project, a workshop on key performance indicators will be conducted. The community can discuss their ideas to improve and identify their uniqueness and identity of products. The products from the community can be various, either food, culture, or attraction.

#### 4) Outcomes of Pilot Project

The results of pilot project implementation including planning stage provided benefits in various aspects, particularly the participatory processes. Sustainable development must be created from a collaboration among potential stakeholders and active community. It is a good start to slowly increase the level of public participation in project development. Tessaban Mueang Krabi has adopted the learning obtained during pilot project implementation for their other projects requiring collaboration with the local community. The long-term outcome will provide sustainable tourism through CBT that was formulated from public participation. The key outcomes can be summarized, as follows:

- Local beverage shop directly provides job opportunities to the local people.
- The Andaman Cultural Center attracts a greater number of visitors. The more visitors in Krabi city, the higher income the city can generate.
- Through co-creation workshops and participatory planning, the Tessaban developed a plan on improving the Andaman Cultural Center as a symbol of Krabi, and in doing so has fostered a sense of ownership among various stakeholders.
- To use the built/ renovated structures, especially the local beverage shop, in promoting CBT effectively and sustainably, an operations and management system (OMS) was established involving the communities, public and private tourism-related organizations, and academia. The OMS has led to the effective use of local resources and has contributed to sustainable and responsible tourism in Krabi.

#### 3.4.4 Lessons Learned

**Sustainable tourism development:** The sustainable tourism destination is a significant challenge for the tourism city. Not only promoting economic advantage in the city, it is also creating a good environment and balancing the needs among the local people, tourism providers, and individual tourists. In this context, Tessaban Mueang Krabi has utilized the local art and culture to promote its identity toward sustainable tourism development. Potentially, these arts and cultures are safeguarded and benefit from the income stream. Accordingly, higher incomes have improved the quality of life while the environment has been preserved. Besides, mobility has also been considered in the action plan to serve diverse activities and improve tourism services. Then, it becomes a positive cycle which benefits everyone involved in the process.

Back in 2017, Tessaban Mueang Krabi received the 4<sup>th</sup> Asian Environmental Sustainability City (ESC) Award from ONEP due to its initiatives in waste management, green city, and biodiversity, receiving the highest score. It clearly presents that the city developed as a tourism destination together with environment conservation. From the experiences under the SFCI, Tessaban Mueang Krabi was recognized as a good-practice case out of 80 candidate cities in an award organized by UCLG. These are clear evidences that the Tessaban has successfully emerged as a sustainable tourism destination through an interdisciplinary, holistic, and integrative approach.

**City-to-city collaboration:** Along with achievements, Tessaban Mueang Krabi has

attracted attention of other countries. Along with the city-to-city collaboration promoted under the SFCI, JICA has continually promoted collaboration between Tessaban Mueang Krabi and Nago City in Okinawa, Japan. With similar context, this collaboration is expected to exchange knowledge in terms of tourism industry promotion. To do this, JICA will provide an expert to work with the Tessaban under the two (2) main goals which are (i) to determine the industrial promotion program such as local product development and tourism promotion and (ii) to strengthen collaborative network via academic support and online training. This collaborative project will take three (3) years.

**Tessaban's strong determination and execution:** The key success of Tessaban Mueang Krabi is the Tessaban's determination. The action plan has been mainly driven by the Tessaban through the LSDP. It has considered and grouped the projects into phases. At the beginning, a project was implemented as small activities to make a basic understanding for people. With the outcomes of the beginning stage, the project was realized with further support from relevant agencies. In addition, the Tessaban has looked beyond the city. Many projects consider the resources of areas surrounding the Tessaban (like beaches) and neighboring provinces. This potentially makes the city as the center of a provincial cluster. Accordingly, the Tessaban can gain financial support from many departments.

**Strong leadership:** Tessaban Mueang Krabi has a strong leadership and competent team. Many issues were able to be efficiently responded to while the needs were also reflected into actions. Even though the local politics have changed, the mindset of art and cultural tourism with CBT development can still be continued through the perspective of an attractive city. To add to this point, the new executive team has a goal to develop the city in terms of an "excellent city" with infrastructure improvement, attractive city, wealthy city, and healthy city.

**Public participation:** The Tessaban also emphasized public participation. As a key planning approach of the SFCI, the Tessaban realized how to apply and utilize the outputs from public participation. To materialize the city's vision, the Tessaban has gained necessary information on different aspects from several stakeholders. Along with this process, local communities have realized their opportunity to generate income while understanding why they need to be involved in planning. Accordingly, the Tessaban has noticed the conflicts, needs, and possibilities to develop the city. For example, the Tessaban established quick-win project related to local economy of one community and let those community people take action for project implementation. The result of the project showed a concrete output that increases the community's income. Thereby, people became willing to get involved in most of the activities hosted by the Tessaban because they now have a clearer image of the benefits and more understanding after seeing the outputs themselves.

Besides the citizens, the collaboration with private and public sector benefited the Tessaban to get the new direction or idea for further development. Under the SFCI, the connection with nearby LAOs, Krabi Community Based Tourism Association and Krabi Tourism Business Association, and other public sector at different levels have been strengthened. The comprehensive tourism information was created through these networks. By creating partnerships, the Tessaban not only develops the city itself but also the surrounding areas which will benefit more people.



**Lack of knowledge and experiences:** The key challenge for Tessaban Mueang Krabi is that the community lacks knowledge and experiences. In the last decade, there was a rapid change in economy and society. For Tessaban Mueang Krabi, the majority of people were not able to adapt themselves to the new global trends in time. Language and career remained a key barrier for local people, preventing them to generate higher incomes. Even though the Tessaban has considered that knowledge and human development are the fundamental to sustainable development, it takes time for the local people to learn and adapt themselves to such rapid changes. To solve this, the learning in family, community, and school are needed to be prioritized, while LAOs (either the Tessaban or neighboring LAOs) and provincial administration need to learn and cope with forthcoming changes. A more proactive, continuous, and comprehensive plan is required to be developed, while the local people and community should be open-minded to do new things and drive the city in the same direction.

**Adaptability to difficult condition:** Particular to the COVID-19 situation, adaptation is highly essential for city development. Tessaban Mueang Krabi has experienced a high impact from travel restrictions due to COVID-19. The number of tourists decreased dramatically, and many activities were suspended. To cope with this situation, the Tessaban and the community needed to continually adapt. Positively, the local people have prioritized their local resources and sufficient life. Without overloaded tourists, natural resources can recover. The Tessaban also gained financial support to recover and improve the quality of its tourism.

The SFCI provides many fruitful experiences and knowledge to Tessaban Mueang Krabi. Under several processes, tourism in the Tessaban has not only been well-developed, but the other aspects, such as environmental conservation, community development, and quality of life, are also considered in the development direction. The Tessaban has become one of the successful model cities in terms of sustainable tourism destination. In addition, they are willing to share their experience to other tourism cities who are interested in such developments in the form of study tours.

### **3.5 Tessaban Mueang Nan**

#### **3.5.1 Overview and the SFC Plan of Tessaban Mueang Nan**

##### **1) Overview of Tessaban Mueang Nan**

Tessaban Mueang Nan is on a plain in the east of upper northern Thailand and borders Lao PDR. Since the 15<sup>th</sup> century, Nan has been one of the major cities of the Eastern Lanna Kingdom which brings many types of Lanna art and culture to Nan. As a provincial center, Tessaban Mueang Nan has developed as a trading center for agriculture products from the surrounding areas.

Tessaban Mueang Nan is a provincial center for public services and commercial activities. In the early 2000s, it was developed as a center for regional tourism as part of the provincial tourism development strategy. Major tourism resources within the Tessaban include many temples, old castle walls, museums, and cultural events. To promote the identity and uniqueness through tourism development, Tessaban Mueang Nan also set its own unique tourism strategy to be “A Living Old Town” with its typical lifestyle of slow life, mixed with hill tribes and cultures the “Nan’s Way.”

Population in Tessaban Mueang Nan has continuously decreased since last 10 years, while statistical data of registered population increased in 2011 due to the expansion of the Tessaban area. The population of Nan Urban Area is virtually unchanged. Both Tessaban Mueang Nan and Nan Urban Area have experienced an increase in the number of aging people and a decrease in the younger generations and workforce. As of 2015, the aging rate (over 60) is 20% in Tessaban Mueang Nan and 14% in Nan Urban Area.

The city received an award in environmental management due to its many environmental activities such as solid waste collection, solid waste segregation in household, and waste recycling market. For water quality, massive conversion of forests to farmland upstream of the river could result in water contamination with pesticides, insecticides, or fertilizer. Therefore, it is very important that the river water quality is regularly monitored. With air quality, the haze caused by open burning is present in the dry season. This is harmful to the health of the residents. Seasonal flash flooding in the forested area in the province has decreased by 26% in the period of 2011 to 2014. A Community Based Disaster Risk Management Project is being undertaken. DEQP and Thailand Greenhouse Gas Management Organization (TGO) have a project in Nan regarding climate change/GHG. Interestingly, Tessaban Mueang Nan received the “ASEAN Environmentally Sustainable City Award” in 2017 for being a model city for environmental management in Thailand and the ASEAN.

Nan’s value relies not only on its historical and cultural heritage, such as temples and natural environment, but also on its unique and diverse culture and lifestyle, so-called Nan’s Way. Its unique tourist strategy is to share its value with all of Nan, to preserve it through active participation, and to boost the people’s pride in Nan. Its environment is also preserved as one of the cores of “Nan’s ways.” A stable solid waste management is also needed to maintain environmental sustainability.

## 2) SFC Plan for Tessaban Mueang Nan

With its potential and uniqueness, Tessaban Mueang Nan can become a historical and cultural museum, where its cultural resources and people’s lifestyles are identified as tourist resources which will be managed by the community. Tourism trails will connect these tourist resources and promote Nan’s Way Museum or Nan – A Living Old Town.

The details of the SFC vision and strategy for Nan are listed below.

**SFC Vision:** “Nan – A Living Old Town Filled with Happiness”

Strategy 1: Restoration and Conservation of Local Culture

Strategy 2: Development of the Quality of Life

Strategy 3: Urban Environmental Management

“A Living Old Town” is a concept to demonstrate the distinctive features of Nan’s way in three aspects: (1) culture and art, architecture, culinary art, language, and traditional costumes; (2) quality of life where Nan people promote an organic agriculture and harvests safe produce; emphasize sustainable production, and traditional medicines based on local wisdom; and (3) soil rehabilitation by organic farming, effective wastewater management, separation of waste at source, and revitalization of green spaces. This aims to clearly present the town’s identity to lead the development of the town toward a positive direction and at the same time preserve its culture and local wisdom, which are the pride of current generation.

From the above three strategies, Tessaban Mueang Nan decided on a cross-cutting strategy to efficiently develop “A Living Old Town” in all aspects. It aims to use a holistic approach to sustainable future city development. These three (3) cross-cutting projects were integrated into ‘Experience Nan Live Museum along the Bicycle Route’ and became the JICA pilot project with three components, namely: (1) Nan Community Center for Cultural and Cycling Tourism (Long Nan Center), (2) The Study on the Development of Lighting System Detail Design for the Promotion of Night-time Cultural Tourism, and (3) Solid Waste Management. The detailed of each component can be seen in Table 3.5.1.

**Table 3.5.1 Selection of SFC Program for Tessaban Mueang Nan**

SFC Program	<p><b>Experience Nan Live Museum along the Bicycle Route</b></p> <ol style="list-style-type: none"> <li>1) Establishing Bicycle routes or routes for demonstrating Nan’s museum – Increase attractiveness of routes for a Healthy Nan</li> <li>2) Solid Waste Management for Nan for a Cleaner Nan (to contribute for beautification of bicycle route)</li> <li>3) Increase green area for a Greener Nan to contribute for beautification of bicycle route)</li> </ol>
JICA Pilot Project	<ul style="list-style-type: none"> <li>• “Experience Nan-the Living Old Town along the bicycle route” cross-cutting project</li> <li>• Component 1: Long Nan Information Center</li> <li>• Component 2: Lighting for Temples and Archeological Sites Projects</li> <li>• Component 3: Solid Waste Management</li> </ul>
Action Plan	<b>The Five-year action plan for “A Living Old Town”</b>

Expected output of SFC Program	<ul style="list-style-type: none"> <li>Promote residents and tourists for acknowledging their unique traditions such as architecture, herbs /food, crafts, etc., and way of life.</li> <li>Improved solid waste management to be suitable for Nan's lifestyle and contributing the bicycle lane beautification.</li> <li>Increased green area in their houses, and riverbanks and along the bicycle lane for beautification.</li> </ul>
Long-term impact of SFC Plan	<ul style="list-style-type: none"> <li>Value of old towns and Nan's way are promoted to both tourists and locals.</li> <li>Improve health and happiness of both tourists and locals by consuming clean, safe food and through exercise by riding bicycles.</li> <li>Increasing green area and apply proper solid waste management will reduce pollutions and improve environmental quality.</li> </ul>

Source: JICA Project Team

Along with the study process, including interviews and meetings, a five-year action plan for "A Living Old Town" was prepared to be used as a guideline for the sustainable development of Tessaban Mueang Nan. The action plan has three (3) strategies with various programs and projects. This action plan was prepared to determine what should be done in each short-term project. The identity of community would be enhanced while technical advice from Japanese experts would fulfill the needs of the people. The expected outcomes are not only to preserve Nan's traditional identity, but also conserve environment and natural resources, promote public health, and improve quality of life.

The details of each strategy are described below.

- **Strategy 1: Restoration and Conservation of Local Culture**

This strategy focuses on the rehabilitation and preservation of the unique culture and traditions of Nan to establish it as an old living town. In addition, this promotes a learning resource for conservation and enables future generations to inherit the culture and local wisdom. It also encourages bicycle tours and use of eco-friendly vehicles to protect the environment. This will give tourists a deeper experience of the way of life of the Nan people. The objective of this is to preserve tradition, culture, and local wisdom and promote cultural tourism.

This strategy has four (4) programs with 16 projects. Program 1-1: Preserve Tradition, Culture, and Local Wisdom aims to promote culture and conduct awareness activities on the importance of preserving local wisdom inside and outside the school system. Program 1-2: Manage Town Improvements aims to create mechanisms to manage rehabilitation, enforce regulations to keep the town organized, and provide knowledge training regarding building repairs to be consistent with the old town context. Coordination with various agencies is needed to make city improvements more orderly. Program 1-3: Promote Learning Centers is to create spaces for learning about art, culture, traditions, and local wisdom, old and new. This includes community development for both the elderly and youth in the promotion of culture and tradition to tourists. Last, Program 1-4: Promote Tourism Activities aims to design trip itineraries suitable to be followed throughout the year. This includes the development of tourist cycle routes and environment-friendly public transport as an alternative for travelers.

The details of the projects under this strategy are described in Table 3.5.2.

**Table 3.5.2 Projects under Strategy 1 Restoration and Conservation of Local Culture**

No.	Name of Project	Duration	Budget	Organization
<b>Strategy 1: Restoration and preservation of local culture</b>				
<b>Program 1-1: Preservation of tradition, culture, and local wisdom</b>				
1	Review the history of Nan	2019–2022	N/A	Nan Cultural Office
2	Design / install lightings at historical sites	2019–2022	92 million	Tessaban, Ministry of Sport & Tourism, Department of Fine Arts, Temples
	The Study on the Development of Lighting System Detail Design for the Promotion of Night-time Cultural Tourism (Detail Design)	<i>JICA Pilot Project</i>		
3	Educate students and youth on culture and tradition both in school and at summer camp	2018–2022	Part of 60,000/year budget	Tessaban
<b>Program 1-2: Manage Town Improvements</b>				
4	Set up measures to deal with signage and pavement encroachment	2018–2021	Part of 20 million/year budget	Tessaban
5	Encourage new construction to follow the old city context	2019–2022	N/A	Tessaban
6	Construct underground electric lines project	2019–2022	Ph1 97MB Ph2 180MB Ph3 197MB Ph4 380MB Ph5 225MB	Tessaban, PEA Tourist Authority
<b>Program 1-3: Promote Learning Center</b>				
7	Develop the cultural tourism center (Long Nan Center)	2019–2022	N/A	Tessaban, DASTA, Nan Tourism Council
	• Long Nan Center	<i>JICA Pilot Project</i>		
8	Develop Nan Town Cultural Arts Center	2019–2022	N/A	Tessaban, Nan Cultural Office
9	Promote and develop the community learning center	2019–2022	N/A	Tessaban
10	Promote effective process of the Local Wisdoms Transfer	2019–2022	N/A	Tessaban, Community College
<b>Program 1-4: Promote Tourism Activities</b>				
11	Promote 12-month tourism event	2018–2022	Part of 2,150,000 /year budget	Tessaban, Nan Cultural Office, DASTA
12	Design safe bike route/lane	2018–2022	Part of 300,000/year budget	Tessaban, Traffic Police, DPT
13	Promote Cultural Cycle Tourism	2018–2022	Part of 9 million/year budget	Tessaban, Nan Cultural Office, DASTA, TAT, Nan Tourism Council, Provincial Sport & Tourism Office
14	Promote road safety	2018–2022	Part of 50,00/year budget	Tessaban (Permanent Secretary Office), Traffic Police,
15	Develop environmental-friendly transport system	2019–2022	N/A	Tessaban, DASTA, Nan Tourism Office

No.	Name of Project	Duration	Budget	Organization
16	PR on highlight each community	2018–2021	Part of 300,000/year budget	Tessaban (Civil), Nan Tourism Office

Source: JICA Project Team

- **Strategy 2: Improvement of the Quality of Life in Nan**

This strategy focuses on enhancing the health of people in the town. It also promotes the learning of “A Living Old Town” both through formal and informal learning. In addition, it also aims to encourage people to live in the context of the old town, for the community’s economy to be self-reliant, and provide security for both life and property. This will enable a society to be built on generosity and cooperation, which are basic principles for the development of a sustainable Nan town. The objectives are to provide people with a good living by having a healthy, diverse local economy to promote a unique community with cultural diversity and to keep people safe and happy.

This strategy has four programs with 11 projects. Program 2-1: Promote Healthy Lifestyle aims at promoting both physical and mental health and developing a well-organized environment through exercises and the use of bicycles. Program 2-2: Enhance the Knowledge on the Living Old Town aims to improve knowledge, behavior, attitudes, values, and morals of individuals of any age through informal and formal education. Program 2-3: Create a Caring Society aims to provide public spaces for activities to express creative ideas, reduce age gaps, and promote inclusion in the community. Program 2-4: Secure Life and Property is to encourage communities to prepare for emergency situations to protect and to maintain the safety of life and property by enforcing safety measures.

The details of projects under this strategy are described in Table 3.5.3.

**Table 3.5.3 Projects under Strategy 2 Improvement of the Quality of Life in Nan**

No.	Name of Project	Duration	Budget	Organization
<b>Strategy 2: Improvement of the Quality of Life in Nan</b>				
<b>Program 2-1: Promote Healthy Lifestyle</b>				
1	Promote suitable exercise activities for the elderly	2019–2022	N/A	Tessaban, Nan Hospital
2	Promote the use of bicycles in daily life	2019–2022	N/A	Tessaban, DASTA, Nan Bicycle Club
3	Promote home grown organic vegetables and local herbs by using home compost	2018–2022	Part of 500,000/year budget	Tessaban
<b>Program 2-2: Enhance the Knowledge on the Living Old Town</b>				
4	Develop curriculum of local culture & tradition in schools	2018–2022	Part of 60,000/year budget	Tessaban
5	Promote local wisdom transfer	2019–2022	N/A	Tessaban, Community College
6	Foster conservation of unique culture and tradition and Nan’s way	2019–2022	N/A	Tessaban, DASTA, Nan Tourism Office
<b>Program 2-3: Create A Caring Society</b>				
7	“Nan support Nan” Project	2019–2022	N/A	Tessaban,

No.	Name of Project	Duration	Budget	Organization
				communities
8	Public Area Management for all	2019–2022	N/A	Tessaban, DASTA, Nan Cultural Office, Provincial Administration Office
<b>Program 2-4: Secure Life and Property</b>				
9	Promote community products	2019–2022	N/A	Tessaban, DASTA, Nan Tourism Council
10	Promote the career integration	2019–2022	N/A	Tessaban, Community College, Rajamongkol University
11	Educate the marketing knowledge to the communities	2019–2022	N/A	Tessaban, Community College, Rajamongkol University

Source: JICA Project Team

- **Strategy 3: Urban Environment Management**

This strategy focuses on environmental management. As the number of tourists has rapidly increased, an integrated waste management must be considered. There are a lot of organic wastes from many restaurants. Without waste separation, it is difficult for the Tessaban to deal with this issue. There is a need to promote the use of environment-friendly packaging and to encourage people to buy more environment-friendly products. The Tessaban should promote more zones for the sale of organic vegetables in the tessaban fresh market. In addition, Tessaban Mueang Nan’s green areas are mostly public parks. But to promote the habit of cycling in daily activities or leisure, there is a need for more green areas to give shade and pleasant rest. The objectives are to enhance participatory environmental management, to increase the number of green areas in the Tessaban area, and to promote environmental-friendly production and consumption.

This strategy has three (3) programs with 12 projects. Program 3-1: Waste and Pollution Management aims to modify behavior, reduce the release of waste and pollution, and optimize management efficiency by maximizing use of products or reusing. Program 3-2: Develop Urban Green Areas and Landscape aims to provide information and encourage tree planting in both public and private areas. Program 3-3: Promote Sustainable Production and Consumption aims to promote eco-friendly products and usage of efficient energy and renewable natural resources.

The details of projects under this strategy are described in Table 3.5.4.

**Table 3.5.4 Projects under Strategy 2 Improvement of the Quality of Life in Nan**

No.	Name of Project	Duration	Budget	Organization
<b>Strategy 3: Urban Environment Management</b>				
<b>Program 3-1: Manage Waste and Pollution</b>				
1	Expanded community model of integrated waste management	2018–2022	Part of 50,000/year budget	Tessaban, JICA, DEQP



No.	Name of Project	Duration	Budget	Organization
2	Organic waste management for community and corporation	2018–2022	Part of 50,000/year budget	Tessaban, JICA, DEQP
	Solid Waste Management	<i>JICA Pilot Project</i>		
3	Optimize the collecting efficiency of organic waste	2019–2022	N/A	Tessaban
4	Fertilizer from wood branch	2019–2022	N/A	Tessaban
5	Ordinance on waste water treatment fee	2019–2022	N/A	Tessaban
<b>Program 3-2: Develop Urban Green Areas and Landscape</b>				
6	Develop green areas in schools, public land, government lands and temples	2018–2021	Part of 30,000 + 100,000 + 100,000 /year budget	Tessaban
7	Increase green areas along roads and waterways	2018–2022	20,000	Tessaban, DPT
8	Explore and improve the denuded green area	2019–2022	N/A	Tessaban
<b>Program 3-3: Promote Sustainable Production and Consumption</b>				
9	Encourage enterprises to use eco-friendly packaging	2018–2021	Part of 20,000/year budget	Tessaban
10	Encourage enterprises to pursue the green businesses	2019–2022	N/A	Tessaban, Communities, Young Entrepreneur Group, Nan Commercial Council
11	Develop Green Market	2018–2022	Part of 20,000/year budget	Tessaban
12	Develop the eco-friendly transport system	2019–2022	N/A	Tessaban, Ministry of Transportation, DASTA, Nan Tourism Council, Ministry of Energy

Source: JICA Project Team

To achieve the vision of “Nan – A Living Old Town Filled with Happiness”, the action plan is the primary step. The integration of cultural heritage, environment conservation, and quality of life is expected to enhance the sustainability of Tessaban Mueang Nan. By completing this plan, the city will meet its economic and social needs while maintaining cultural integrity. In addition, the Tessaban has highly prioritized waste management, which is a key urban issue in tourism development. Thus, this plan will also support a good environment and life support system in line with cultural preservation.

### 3.5.2 Progress of the SFC Plan

In this section, the progress of the five-year action plan for “A Living Old Town” is examined. The factors that pushed the action plan forward or otherwise are identified, namely the potential budget and relevant organizations. The causes of project delay and the challenges

faced by the Tessaban are explained. The reorientation and additional projects to complete the plan are also highlighted.

The five-year action plan for “A Living Old Town” has been implemented by Tessaban Mueang Nan. To complete the action plan, the Tessaban included most projects in the LSDP for FY2018–2022 which allows the Tessaban to request for annual budget for its implementation. Under the LSDP, the proposed projects have not only been recognized by the national government, especially the DLA, but have also conformed to the vision of “Nan – A Living Old Town Filled with Happiness”.

In addition to this, Tessaban Mueang Nan has proposed some projects requiring a big budget to other organizations, such as the Provincial Office, Department of Tourism and Sports, and the Provincial Electricity Authority. As the Tessaban is the core of Nan province, the project is expected to benefit more people. Also, with the identity and uniqueness of the Tessaban, many organizations have become interested to develop the city. For instance, Nan was selected by the Designated Areas for Sustainable Tourism Administration or Designated Area for Sustainable Tourism Administration (DASTA) to develop its cultural tourism. Therefore, the projects in Nan have gained either financial or technical support to achieve its vision.



Source: JICA Project Team

**Figure 3.5.1 Progress of the Five-year Action Plan on “A Living Old Town”**

The action plan consists of three (3) strategies with 39 projects in total. As shown in Figure 3.5.1, Tessaban Mueang Nan completed over 70% (28 projects) of the total projects in the action plan. There are only two (2) projects that are in progress, approximately 5% of its total, while only nine (9) projects (23%) are delayed.

Looking at the progress of each strategy, Strategy 3 shows significant progress. Over 80% of its projects were completed. Meanwhile, the projects under Strategy 2 are about 73%

done while 27% are delayed. Under Strategy 1, only 63% of its projects were completed, some are ongoing (about 13%), and 25% are delayed.

The details of each strategy are described below.

- **Strategy 1: Restoration and Conservation of Local Culture**

Strategy 1 consists of four (4) programs with 16 projects. Program 1-1: Preservation of tradition, culture, and local wisdom includes three projects. There is only one project: Designing/Installing lighting at historical sites is now under the process of approval. As the project is mainly related to historical sites, this project is a collaboration among many organizations, including the Ministry of Sport and Tourism, Department of Fine Arts, and temples. Even though the Tessaban has completed the detailed design of lighting installation, lighting some areas need to get approval from the Old Town Conservation and Development Committee.

For the completed project, the one on reviewing the history of Nan was renamed as 'Nan's Brain Storage Project'. This project established a learning center by gathering local experts and key persons to exchange knowledge with the local people and children on various topics, such as tourism, security, economy, income enhancement, environment, public health, welfare, education, religious, tradition, sport, recreation, landscape, and urban planning.

To operate the 'Nan's Brain Storage Project', a committee was appointed. The committee proposed two (2) sub-projects, which are the Royal Cup Boat Racing Tradition Project and the Naow Nee Kra Zip Rak Tee Nan Project (Love whispering in winter), to preserve local wisdom and tradition. By doing this, the Tessaban is expected to strengthen unity and relationship of the people through tourism activities. At the same time, tourism will be more attractive when the original tradition is preserved.

For Program 1-2: Manage Town Improvements, there are three (3) projects. The completed project was done by the Tessaban. The first project, the improvement of encroached signage and pavement, was done through the Cleanliness Act. Another completed project constructed the tourist service center. As for the last project, Construct underground electric lines project, it requires a huge budget so the Tessaban collaborated with the PEA and the Department of Tourism. The construction was divided into five (5) phases. Currently, the project is under construction. The phases of this project are as follows:

- **Phase 1** – Suriyaphong Road between Sri Panton Temple Intersection to Ming Mueang Temple and Phakong Road, Hua Khuang Temple to Chao Ratchabut intersection.
- **Phase 2** – Chaofah Road between Huai Rong Nam Bridge to Maha Phrom Road Intersection and Mahaprom Road, the junction of the road around the city on the west side to the Sumon Thewarat road junction.
- **Phase 3** – Phakong Road, at the intersection of Chao Ratchabut Anurasangsi to Wat Suan Tan Intersection, Tha Li intersection to in front of Wat Phumin, and Mahay Road at the intersection of Suriyaphong Road to Suan Tan Temple Intersection.
- **Phase 4** – Mahawong Road at the three-way intersection of Pratu Plong to

Northern Pattana Bridge, Ananta Worarithidet Road, at the three-way intersection of Pratu Plong to the three-way intersection of Kha Luang Road, and Khao Luang Road, Suriyaphong Road, Chuangsi Intersection, Sri Sermkasikorn School Intersection to Pratuchai Intersection.

- **Phase 5** – The road around the city on the west side at the Pratu Plong Intersection to Sri Phan Ton Temple Intersection, Mahaprom Road to the intersection of roads around the south of the city and Ariyawong Road, and Road around the city on the south side at Wat Aphai Intersection to Ban Tha Li Intersection

Program 1-3: Promote Learning Center consists of four (4) projects with only one delayed. The completed projects are continually being operated. Mainly, in the Long-Nan center, the Tessaban has collaborated with DASTA and the Nan tourism council for technical support, while it collaborated with local schools to let children learn the local Nan's Culture.

Program 1-4 Promote Tourism Activities consists of six (6) projects. Most projects are related to activities promoting tourism through bicycle use. The festivals and events are positively conducted together with the Nan Cultural Office and DASTA. To promote local traditions, local food and religious activities are integrated in the event. Also, the nine (9) bicycle routes were designed to let tourists experience the history of Nan and Nan's way. There are three projects that have been delayed. The delayed projects are mainly related to traffic management. The process to get consent from communities has taken longer than expected.

Most of projects under this strategy have either been completed or continually being implemented. However, the key constraint to operate the project is COVID-19. The prevention measures have restricted people's mobility and suspended Tessaban activities. Another challenge is the historical areas. Since the city has many historical sites like temples and an old wall, the development and maintenance of those historical structures remained difficult. This is because some places are registered under DFA, while further development and improvement require a long process to get approval.

The progress of each project under this strategy is summarized in Table 3.5.5.

**Table 3.5.5 Progress of Strategy 1: Restoration and Conservation of Local Culture**

No.	Name of Project	Status				Relevant Org.	Key Constraint				
		Plan	Prep	Imple	Detail		COVI D-19	Budg et	Reg.	Resea rch	Perso n-nel
<b>Strategy 1: Restoration and preservation of local culture</b>											
<b>Program 1-1: Preservation of tradition, culture, and local wisdom</b>											
1	Review the history of Nan		●	●	It was implemented as Nan's brain storage project where there are experts and key persons who has important role in local community share/transfer/gather knowledge for Nan development	Nan Cultural Office					
2	Design / install lightings at historical sites		□			Tessaban, Ministry of Sport & Tourism, Department of Fine Arts, Temples					The installation in some areas need to get approval from Old Town Conservation and Development Committee
3	Educate students and youth on culture and tradition both in school and at summer camp		●	●	To create awareness on morality and ethics for students as well as to improve/refine the habits of conducting themselves to be good person of society	Tessaban, Office of Non-Formal Education					
<b>Program 1-2: Manage Town Improvements</b>											
4	Set up measures to deal with signage and pavement encroachment		●	●	Nan Municipality officer inspected the arrangement of signs and encroached on the sidewalk area in accordance with the Cleanliness Act on a daily basis	Tessaban					
5	Encourage new construction to follow the old city context		●	●	to construct a quality, clean, safe and standard tourist service center for creating trust and providing tourism service facility for tourists	Tessaban					
6	Construct underground electric lines project		●	□	The construction was divided into 5 Phase	Tessaban, PEA Department of Tourism					
<b>Program 1-3: Promote Learning Center</b>											

No.	Name of Project	Status				Relevant Org.	Key Constraint					
		Plan	Prep	Imple	Detail		COVI D-19	Budg et	Reg.	Resea rch	Perso n-nel	Remark
7	Develop the cultural tourism center (Long Nan Center)		•	•	There is one (1) staff providing information to tourists at Long Nan Centre. There is also bicycle rental service	Tessaban, DASTA, Nan Tourism Council						The number of tourist was decreased due to the COVID-19
8	Develop Nan Town Cultural Arts Center				No progress	Tessaban, Nan Cultural Office						
9	Promote and develop the community learning center		■	■	One (1) learning centre for solid waste management in Tessaban Mueang Nan was established	Tessaban						
10	Promote effective process of the Local Wisdoms Transfer		•	•	Provided staff at Long Nan Centre	Tessaban, Local school						
<b>Program 1-4: Promote Tourism Activities</b>												
11	Promote 12-month tourism event		•	•	Organizing tourism promotion activities and preserving local traditions such as the tradition of making merit, offering food to monks, inheriting the fate, tying the wrists, giving gifts, and taking photos of tourist attractions in Nan province contest	Tessaban, Nan Cultural Office, DASTA						
12	Design safe bike route/lane				No progress	Tessaban, Traffic Police, DPT						
13	Promote Cultural Cycle Tourism		■	■	Provide a bicycle route of approximately 9 kilometres through 9 temples and local places which are the place to show, the way of Nan people life. It also aims for tourists to learn the history of Nan and the way Nan people as well as to experience the natural landscape and environment in Nan province	Tessaban, Nan Cultural Office, DASTA, TAT, Nan Tourism Council, Provincial Sport & Tourism Office						
14	Promote road safety				No Progress	Tessaban,						

**Final Report, Vol. 2: Model City Projects**

No.	Name of Project	Status				Relevant Org.	Key Constraint					
		Plan	Prep	Imple	Detail		COVI D-19	Budg et	Reg.	Resea rch	Perso n-nel	Remark
15	Develop environmental-friendly transport system				N/A	Traffic Police, Tessaban, DASTA, Nan Tourism Office						
16	PR on highlight each community		•	•	Community and local school has been studied on new bicycle route for additional data using at the Long Nan Centre	Tessaban, Nan Tourism Office						
		<b>Remark:</b>					<b>Remark:</b>					
		On plan			• Keep implementing	Causes of delay are COVID-19, budget, regulation, required further research or information, and skills of personnel.						
		In process			■ Done							
		Delayed			□ Under the process							
					xSuspended							

Source: JICA Project Team



- **Strategy 2: Improvement of the Quality of Life in Nan**

This strategy consists of four (4) programs with 11 projects. Over 70% or 8 projects under this strategy had been completed while 27% or 3 projects are now being delayed. Program 2-1: Promote Healthy Lifestyle includes three (3) projects. All projects under this program have been completed and continually operating. To promote public health concretely, the Tessaban collaborated with Nan's hospital. In addition, the Mahaphod community conducted bicycle activities every Saturday. For the organic vegetables and local herbs, the Tessaban prepared agricultural demonstration plots in Mahaphod Community to promote local vegetables down to household levels. Local people can take vegetables for their household. During the COVID-19 lockdowns and even though many activities were suspended, the community garden has become more popular as the people has been more self-sustained and sufficient in their life.



Source: JICA Project Team

**Figure 3.5.2 Mahaphod Community Vegetable Garden**

Program 2-2: Enhance the Knowledge on the Living Old Town consists of three (3) projects. Only one project under this program was completed. The school curriculum on local culture and tradition has been developed and promoted the kids to be a local guide tour. For the rest projects, there is no progress, however, it could be merged with other projects to promote the local wisdom and culture.

Program 2-3: Create A Caring Society consists of two (2) projects. Both projects were completed. Interestingly, the Tessaban has extended the "Nan support Nan" Project into several projects with their own budget, as follows:

- **Project to support education of underprivileged children** to promote finding information and helping disadvantaged children in the city.
- **Procurement of medical supplies for medical treatment of low-income people and people who are eligible for exemption from medical expenses** to enable people with low incomes and those who are exempt from medical expenses to have access to basic public health services.
- **Project to prevent and solve the problem of violence against women and family members** to allow society and communities to participate in prevention, problem solving, and building a network to monitor problems in the area.

- **Project to improve the quality of life of people with disabilities** to improve the quality of life for people with disabilities, both physically and mentally and to create a network to help people with disabilities.
- **Housing improvement project for the elderly, handicapped, and low-income people in Tessaban Mueang Nan** to provide housing conditions for the elderly, the persons with disabilities (PWDs), and the low-income to be stable and strong.
- **Project to care for the elderly at home** to visit and provide primary health care in the disadvantaged group and chronic illness.
- **Project to prevent accidents in the elderly and the disabled** to prevent injuries in the elderly or the disabled.
- **Project to help families in distress, poverty and disadvantaged people** to provide assistance to families in need, experiencing natural disasters and urgent emergency as well as to support their mental.

Program 2-4: Secure Life and Property consists of three (3) projects. Only one project has been delayed, which is Educate the marketing knowledge to the communities. For the completed project, the Tessaban has collaborated with several organizations to promote the community products in walking streets and to provide job opportunities to its citizens through career development. However, there are some difficulties, especially the capability of its personnel. The skills needed for quality control of community products are either lacking or need more time to improve.

The progress of each project under this strategy is summarized in Table 3.5.6.

**Table 3.5.6 Progress of Strategy 2: Improvement of the Quality of Life in Nan**

No.	Name of Project	Status			Relevant Org.	Key Constraint					
		Plan	Prep	Imple		Detail	COVID-19	Budget	Reg.	Researcher	Personnel
<b>Strategy 2: Improvement of the Quality of Life in Nan</b>											
<b>Program 2-1: Promote Healthy Lifestyle</b>											
1	Promote suitable exercise activities for the elderly		•	•	Support the community committees in organizing activities of the elderly club in Tessaban Mueang Nan, such as organizing sports competitions for the elderly, organizing a forum to meet and exchange learning activities of the elderly in each community.	Tessaban, Nan Hospital					
2	Promote the use of bicycles in daily life		•	•	Mahaphod Community has bicycle activities every Saturday	Tessaban, DASTA, Nan Bicycle Club					
3	Promote home grown organic vegetables and local herbs by using home compost		•	•	Tessaban was prepared agricultural demonstration plots	Tessaban					
<b>Program 2-2: Enhance the Knowledge on the Living Old Town</b>											
4	Develop curriculum of local culture & tradition in schools		•	•	There is a project for kid to learn and be a guide tour	Tessaban					
5	Promote local wisdom transfer				N/A	Tessaban, Community College					
6	Foster conservation of unique culture and tradition and Nan's way				N/A	Tessaban, DASTA, Nan Tourism Office					
<b>Program 2-3: Create A Caring Society</b>											
7	"Nan support Nan" Project		•	•	There are several projects prepared for "Nan support Nan"	Tessaban, communities					
8	Public Area Management for all		•	•	To improve the landscape of the community to be beautiful by procuring flowering plants and ornamental plants	Tessaban, DASTA, Nan Cultural Office, Provincial					

No.	Name of Project	Status				Relevant Org.	Key Constraint				Remark
		Plan	Prep	Imple	Detail		COVID-19	Budget	Reg.	Research	
<b>Program 2-4: Secure Life and Property</b>											
9	Promote community products				Quality community products were sold at walking street	Tessaban, DASTA, Nan Tourism Council					Lack of skill in order to control the quality of community product. Time for improvement is needed.
10	Promote the career integration				To promote and develop people's careers to have knowledge in career development as well as enable them to increase income / reduce family expenses	Tessaban, Community College, Rajamongkol University					
11	Educate the marketing knowledge to the communities				N/A	Tessaban, Community College, Rajamongkol University					
<b>Remark:</b>											
<ul style="list-style-type: none"> <li><input type="checkbox"/> On plan</li> <li><input type="checkbox"/> In process</li> <li><input type="checkbox"/> Delayed</li> <li><input type="checkbox"/> Keep implementing</li> <li><input type="checkbox"/> Done</li> <li><input type="checkbox"/> Under the process</li> <li><input type="checkbox"/> xSuspended</li> </ul>											
<b>Remark:</b> Causes of delay are COVID-19, budget, regulation, required further research or information, and skills of personnel.											

Source: JICA Project Team

- **Strategy 3: Urban Environment Management**

This strategy consists of three (3) main programs with 12 projects, 10 (over 80%) of which are completely done and two (2) (17%) are delayed. Program 3-1: Manage Waste and Pollution has five (5) projects with four (4) completed and one (1) delayed. For the completed projects, the Tessaban collaborated with the DEQP to conduct waste management. Several types of waste, such as organic waste and wooden branches, were managed under this program. For instance, Don-Kaew community was selected as a pilot area to apply solid waste management fund. This project aims to collect money generated from waste recycling and used for municipal waste service fee. This will not only reduce the amount of waste but also raise the awareness of local people on waste separation.

Program 3-2: Develop Urban Green Areas and Landscape consists of three (3) projects. All projects under this program are completed. The green area increased in the Tessaban area. The Tessaban collaborated with the DPT to establish green areas along roads and waterways.

Program 3-3: Promote Sustainable Production and Consumption consists of four (4) projects. Only one project is delayed. For the completed projects, the Tessaban promoted the eco-friendly packaging in walking streets and markets. The local enterprises and communities were also encouraged to join a green business, such as Young Entrepreneur Group and Nan Commercial Council. To reduce the usage of plastic and foam, the restaurants and local shops used reusable containers and fabric bags at the market.

The progress of each project under this strategy is summarized in Table 3.5.7.

Table 3.5.7 Progress of Strategy 3: Urban Environment Management

No.	Name of Project	Status				Relevant Org.	Key Constraint				
		Plan	Prep	Imple	Detail		COVI D-19	Budget	Reg.	Research	Personnel
<b>Strategy 3: Manage Urban Environment</b>											
<b>Program 3-1: Manage Waste and Pollution</b>											
1	Expanded community model of integrated waste management	●	●	●	The solid waste management program was extended and disseminated to Don-Kaew community. Solid waste fund was established that will collect money generated from waste recycling and used for municipal waste service fee	Tessaban, JICA, DEQP					
2	Organic waste management for community and corporation	●	●	●	Tessaban provides knowledge to Don-Kaew community, Wat Chang-Kham and youth	Tessaban, JICA, DEQP					
3	Optimize the collecting efficiency of organic waste	●	●	●	Organic waste bins (Green Cone) are used for waste separation	Tessaban					
4	Fertilizer from wood branch	●	●	●	The fertilizers have been created by using small wooden waste crusher machine provided by JICA	Tessaban					The crusher machine is too small causing slow crushing process
5	Ordinance on waste water treatment fee				N/A	Tessaban					
<b>Program 3-2: Develop Urban Green Areas and Landscape</b>											
6	Develop green areas in schools, public land, government lands and temples	■	■	■	Green areas were fully added in Tessaban area	Tessaban					
7	Increase green areas along roads and waterways	■	■	■	Completed	Tessaban, DPT					
8	Explore and improve the	●	●	●		Tessaban					

No.	Name of Project	Status				Relevant Org.	Key Constraint				Remark		
		Plan	Prep	Imple	Detail		COVI D-19	Budget	Reg.	Research		Personnel	
	denuded green area												
<b>Program 3-3: Promote Sustainable Production and Consumption</b>													
9	Encourage enterprises to use eco-friendly packaging		•	•	Walking street is announced as free foam area and promoted to use reusable containers	Tessaban						Banana leave container making machine can be efficiently used	
10	Encourage enterprises to pursue the green businesses		•	•	Tessaban encourage restaurants and shops to reduce the usage of plastic and foam	Tessaban, Communities, Young Entrepreneur Group, Nan Commercial Council							
11	Develop Green Market		•	•	Tessaban bans the use of plastic bag and let people use fabric bag for shopping at the market.	Tessaban							
12	Develop the eco-friendly transport system				N/A	Tessaban, Ministry of Transport, DASTA, Nan Tourism Council, Ministry of Energy							
		<b>Remark:</b>								<b>Remark:</b>			
		On plan			• Keep implementing					Causes of delay are COVID-19, budget, regulation, required further research or information, and skills of personnel.			
		In process			■ Done								
		Delayed			□ Under the process								
					xSuspended								

Source: JICA Project Team



The actions on waste management were very successful. Tessaban received an environmental award. The community has recognized the issues and shift behaviors to blend in the waste management approach. At the same time, Tessaban can promote this approach with the tourists and visitors. This makes the city be clean and avoid the further environmental issues.

The key success of Tessaban Mueang Nan is community involvement and collaboration with many organizations. Tessaban has gained several supports from different experts and specialist to develop the city. Also, as the city is small in size, it is easy to manage and develop the project. The uniqueness and local identity are also attracted more attentions from different partners. The communities are willing to involve in all the process so that many projects have achieved its expected outcomes.

The key challenge of Tessaban Mueang Nan is COVID-19. Trainings and other activities had to be suspended, while tourism was restricted. Other challenges are in terms of regulation and skills. As Tessaban Mueang Nan is a historical area, the approval from national and provincial committees requires many processes and time. Also, to improve the capacity of personnel and communities, it needs more time for practicing and skill to produce quality products.

This action plan is very fruitful for the city. At the beginning step, the community gained more knowledge and awareness in line with the city's development direction. The projects directly benefit the community. At the same time, it enhanced the city environment. In terms of tourism, not only local tradition, lifestyle, and culture were promoted, the travelling mode; cycling, has also sustained the environmental quality.

### 3.5.3 Status and Future Direction of the Pilot Project

This section focuses on the status of the pilot project supported by JICA. This also aims to evaluate how the Tessaban utilizes the output of the pilot project and how they operate and maintain the quality of project construction. Some challenges and plans are also identified.

JICA's pilot project, "Experience Nan-the Living Old Town along the bicycle route," consists of three (3) cross-cutting components which are: (i) Long Nan Information Center, (ii) Lighting for Temples and Archeological Sites Projects, and (iii) Solid Waste Management. The output of three (3) main sub-projects implemented under the JICA Pilot Project are summarized in Table 3.5.8

**Table 3.5.8 Outputs of the JICA Pilot Project by Component**

No.	Component	Output
1	Nan Community Center for Cultural and Cycling Tourism (Long Nan Center)	<p><b>Establishment of Long Nan Center</b></p> <ul style="list-style-type: none"> <li>• A building in the municipal school grounds was converted into a tourism information center called "Long Nan Center" to serve as the center for cycle tourism and for learning local culture and heritage.</li> <li>• Exhibitions showcasing the town's history, culture, and traditions are laid out in various forms, such as maps (ancient, aerial), models (traditional houses and wooden Buddha carvings), and video documentaries. Lighting displays of</li> </ul>

		<p>temples and historical sites are also exhibited to encourage night-time visitors.</p> <ul style="list-style-type: none"> <li>• The Long Nan Center provides bicycle route maps and rents out bicycles</li> </ul> <p><b>Identification of Bicycle Routes to experience Nan, the Living Old Town</b></p> <ul style="list-style-type: none"> <li>• Three (3) cycling routes were identified by local scholars and a research team.</li> <li>• Cycling maps were prepared in Thai and English to introduce Nan’s culture and heritage.</li> <li>• Ten (10) video documentaries on Nan’s culture and tradition were produced with their own QR codes. The codes are engraved on plates installed in various locations around the town</li> </ul>
2	The Study on the Development of Lighting System Detail Design for the Promotion of Night-time Cultural Tourism	<p><b>Detailed Design of a Lighting System for Temples &amp; Historical Sites</b></p> <p>After preparing the detailed design, a test was performed in seven historic sites to get the opinion of Tessaban officials, site owners, the community, the Nan Provincial Cultural Office, and the Fine Arts Department</p> <p><b>Bicycle Route to Promote Night-time Tourism</b></p> <p>The bicycle route, approximately 3-km long, was agreed upon by the Tessaban and tourism industry players. This route leads visitors to temples and historic sites lit up at night for a new experience of Nan old town.</p>
3	Solid Waste Management	<p><b>Community-based Waste Management</b></p> <p>Six pilot communities did different activities, as follows:</p> <ol style="list-style-type: none"> <li>(1) Waste separation</li> <li>(2) Biogas production from organic wastes</li> <li>(3) Establishment of recycling banks to collect and sell recyclable wastes</li> <li>(4) Production of value-added products from wastes (e.g., gift boxes, paper lanterns, postcards made from recycled paper)</li> </ol> <p><b>Waste Management in Markets</b></p> <p>Sellers and buyers at two fresh markets and a tourist night market participated in the following activities:</p> <ol style="list-style-type: none"> <li>(1) Reduction in the use of plastic bags</li> <li>(2) Waste separation and promotion of eco-friendly food containers</li> <li>(3) Recycling of organic wastes into animal feed, etc.</li> </ol> <p>The Tessaban also introduced the “waste-bin-free road” concept and collected sorted wastes by day of the week.</p>

Source: JICA Project Team

## 1) Long Nan Center

The Long Nan Center was established with the aim at being the place to exhibit the uniqueness and potential of Nan’s identities in terms of culture, architecture and local wisdom. The center provides knowledge and understanding of these treasures for Nan, for both its own residence and for visitors. It is also a place for students and communities to present their pride. The information for cultural-based tourism is also provided, especially the three (3) bicycle routes, old houses models exhibition, QR code for promoting the information in Long Nan Center, the Map/Brochure of the bicycle routes.



Source: JICA Project Team

**Figure 3.5.3 Long Nan Center**



Source: JICA Project Team

**Figure 3.5.4 Nan Cycling Map**

The Long Nan Center is in good condition. The Long Nan Center Committee has been operating and maintaining the center. The Mayor of Tessaban Mueang Nan is the chairman of this committee. The committee has conducted monthly meetings to realize its further actions or improvement. The center has been inspected every month to ensure that the equipment provided to the center, such as the LCD TV, are in good condition and ready to

be used. The Tessaban has assigned one (1) staff to the center for providing information to tourists, on bike services, and on the model of the old houses displayed. Video documentaries on Nan's culture and tradition are also shown in the center. However, the Bicycle Routes Map has an air bubble and which the Tessaban plans to replace. Therefore, the bicycle routes will also be updated to be modern with the current conditions.

The Long Nan Center functions as a tourism information center, providing cultural information about Nan's city and surrounding areas and serving as a tourism attraction itself. To enhance tourism services, the Tessaban also provides bicycle rental services at the center. The Rotary Club donated new bicycles to the center. The fee for renting bicycles is THB30 per hour.

As the Long Nan Center is located in Jumpeewanidaporn School (Ban Phumin) area, the school has a new project to promote a local market next to the center called "Kad Long Nan" which means "Long Nan Market" for selling students' artworks and handcrafts. This market will attract tourists to visit the center. Besides, Tessaban Mueang Nan is considering how to generate income from the center, as it is an important issue in the future.

Many visitors and tourists visit the Long Nan Center, especially on weekend evenings and long holidays. The bicycle map has been distributed to lead the local experience routes. However, the COVID-19 pandemic has impacted the Long Nan Center. It had to temporarily close while the number of tourists is still low due to COVID-19 prevention measures and travel restrictions.

## **2) The Study on the Development of Lighting System Detail Design for the Promotion of Night-time Cultural Tourism**

The detailed design for lighting the temples and archeological sites was prepared as one of the JICA pilot project. The project aimed at promoting night-time cultural tourism. The conceptual design is shown in Figure 3.5.5.



Source: JICA Project Team

**Figure 3.5.5 Conceptual Lighting Design for Temples and Archeological Sites**

As the project requires support from the national government and relates to several organizations, the detailed design for the lighting system for the promotion of night-time cultural tourism was reviewed by the provincial office of the Department of Culture. The project requested a budget and was added to the Provincial Plan FY2021. The study was supported by Chulalongkorn University in terms of design, and the Provincial Department of Culture and TAT might provide financial support.

### **3) Solid Waste Management**

Solid waste management were concentrated on the participation of residents of the communities, sellers, and buyers at the markets. The main objective was to dramatically reduce the waste from source to landfill with proper separation, collection, and re-use of each type of waste.

The solid waste management project has been continuously implemented. There were six (6) communities participated for the solid waste management under JICA's pilot project. The Tessaban has disseminated this best practice to the other 19 communities and is expected to apply this practice for the entire Tessaban or 31 communities within 2021. The budget for the solid waste management project is reasonable because it focuses on raising awareness in the communities. With this action, the Tessaban has achieved sustainability in waste management in the future.

Mahaphod community is one of the pilot communities joining for solid waste management. It has become a successful case for community-based waste management particularly in

terms of organic waste separation at the household level, value-added recycled products, and paper making from milk and juice boxes. Many organizations have visited Mahapod to learn from them. For example, there was study tour group from Lampang and Lamphun which visited the Mahaphod community to learn about solid waste management and paper making.



Source: JICA Project Team

**Figure 3.5.6 Study Tour group in Mahaphod Community**

Furthermore, the Mahaphod community also established a Waste Fund, which is a waste management campaign wherein people donate plastic waste instead of paying a municipal waste management fee. The donated wastes are collected and sold to a waste collection company, such as Wongpanit, for recycling. Elderly people normally receive pension every month from the Tessaban. In return, elderly people bring plastic waste that they had collected for a month and donate it (Figure 3.5.7). The waste fund has also expanded to Ban Don Keaw community.





Source: JICA Project Team

**Figure 3.5.7 Elderly Pension Distribution and Waste Collection**

Even after the completion of the campaign under the JICA pilot project, waste separation at the market has continued. People and tourists have to separate their waste by themselves before leaving the seating area in the market. This is a good way to raise people's awareness of waste separation particularly at the household level. It also impressed visitors who visited the market and saw the waste separation practice.



Source: JICA Project Team

**Figure 3.5.8 Waste Separation at a Walking Street**

The provided tools under the JICA pilot project are in good condition. These includes a plastic waste crusher machine, a small wooden-waste crusher, freight tricycle, and a machine for making banana leaf containers (*krathong*). However, the Tessaban has faced some difficulty in using these machines. The size of the wooden-waste crusher is too small, slowing down the process. In addition, the banana leaf container making machine is not effectively working. The Tessaban plans to purchase crushers for plastic and wooden wastes and a freight tricycle to optimize the value of waste.



#### **4) Outcomes of the Pilot Project**

The pilot projects provided positive outcome for Tessaban Mueang Nan, local people, and tourists in many aspects. The Long Nan Center and the lighting project supported the city in term of tourism and cultural promotion in Nan toward Nan's way, whereas the solid waste management project provided direct benefits to the local people and communities. It clearly shows the high level of public participation since the local people were the ones who drove the project together with Tessaban Mueang Nan. The key outcomes of the pilot project can be summarized as follows:

- By taking advantage of Nan's geographical characteristics (i.e., flat and small area) and its unique culture and history, Tessaban Mueang Nan has promoted bicycle tourism revolving around the Long Nan Center. This benefits not only the environment and public health, but also the local economy. It has also engendered a sense of ownership among the people and pride in their culture and heritage. Cycle tourism has also demonstrated the allure of an unhurried way of life in Nan.
- All preparatory activities were jointly done by the Tessaban, communities, NGOs, academe, and business communities. Thereby, it fostered a shared learning of the importance of local culture and heritage.
- Night-time tourism is now being promoted as a new type of tourism product in Nan to highlight the town's unique architectural heritage. Improving streetlights, opening beverage and souvenir shops, providing transportation services (bicycle, tram, walking path, etc.), and training bilingual guides for night-time tours are being studied.
- From the conceptual stage, the opinion and advice of historic site owners, community residents, head monks, local scholars, the Fine Arts Department, the Nan Provincial Cultural Office, and the Tourism Authority of Thailand were considered. This nurtured a sense of ownership and collaboration among the stakeholders and interested parties, especially the entities who gave permission for the installation of lights.
- Technical assistance for the detailed design and preparation of procurement documents helped the Tessaban and other authorities in implementing the project.
- The Tessaban conducted awareness-raising activities in communities and markets regarding solid waste management from sources to disposal sites. By enhancing public awareness and encouraging them to participate in the pilot project, the activities have been sustained, resulting in a cleaner environment.
- Through pilot activities, especially selling recyclables, the communities gained some revenue, which has encouraged the communities to sustain the activities.
- Pilot activities carried out in the night market, one of the tourism resources in the Tessaban, involved tourists, who were highly appreciative of the city's environmental program.

#### **3.5.4 Lessons Learned**

The integration of cultural heritage in sustainable tourism has been highly prioritized by

Tessaban Mueang Nan. To achieve the vision of “Nan – A Living Old Town Filled with Happiness”, the Tessaban focused on its environment and quality of life. Eco-cultural tourism has been promoted to balance tourists’ demands and local needs. The Tessaban has promoted its culture within limitations of carrying capacities and has created small activities toward a high-quality tourism experience. By optimizing its uniqueness and identity, the city has developed as a living museum (or open-air museum). Under this perspective, the Tessaban has translated their history, local culture, and unique lifestyle into experiences showing how it felt like to live in the past.

To materialize its vision, the five-year action plan on promoting “A Living Old Town” has been the beginning for Tessaban Mueang Nan. Rather than structural development, livelihood and community have been the focus. Towards sustainable eco-cultural tourism, the Tessaban has empowered the locals to reflect and present their place’s uniqueness and effectively sustain ecological resources.

To achieve the action plan, the Tessaban has proposed the project in the LSDP. With the potentials of the Tessaban, many organizations also provided both technical and financial support. Being a small city, the outcome of many projects spread to neighboring areas and to provincial levels. This makes the city get the support from its province. In terms of tourism, the authenticity of Nan has attracted the attention of tourism-related departments, like DASTA. Additionally, the performance in environmental management is also remarkable. The other related organizations, like DPT also provided a continuous support. With a strong network, Tessaban Mueang Nan has achieved many projects.

The key to the success of Tessaban Mueang Nan is its capability. Firstly, local politics in Nan is pretty stable. The city’s development has been proceeding smoothly while the working team is active and harmonized. This makes the city efficiently developed. In addition, the Tessaban has close relationship with the community. With a stable local politics, the community’s trust in government has strengthened. Similarly, Tessaban Mueang Nan has good experiences and techniques to communicate and motivate people to be involved in its projects.

With the city’s involvement, the community has a clear image of the benefits from their action. For example, the solid waste management project not only created income for community by selling products from recycled waste but also collaborated with other organizations or communities to visit and learn from them. This creates local pride and motivates the people to continue and improve their activities. The successful outcome achieved by one community encouraged other communities to join.

The key challenge faced by Tessaban Mueang Nan is the lack of appropriate regulations. Since some attractions in the city are registered as historical sites, the Tessaban faces difficulty to control these sites. To achieve eco-cultural tourism, local control over the planning, development, and maintenance of these sites is highly essential. Despite conducting small maintenance work like cleaning, it remains difficult for the Tessaban to do this. To develop a historical area, for instance, the lighting installation for night-time tourism, it requires many approval processes from different organizations.

Some skills are needed to be developed. To promote eco-friendly products, the Tessaban

is required to maintain quality control. This will not only foster a beautiful environment but can also generate more values for community products and incomes for them. The creation of identity in a product should also be considered to emphasize authentic experiences.

As promoting tourism, the Tessaban was impacted by COVID-19 outbreak. The number of tourists has significantly declined. At the same time, events and festivals, such as holding walking streets, were suspended. Accordingly, some people have lost their jobs and/or decreased their incomes. However, during this crisis, Nan's way has potentially helped the people who enjoyed a sufficient and peaceful life. Without tourists, community relationships have strengthened. Some businesses were prepared and improved their services. People were more valued on their existing assets and resources. The Tessaban has prepared a support for the people while adapted the plan to the current situations.

From the experiences of Tessaban Mueang Nan in the SFCI, the Tessaban has successfully become a leader in eco-cultural tourism. With a forward-thinking vision, the Tessaban has disseminated the outcomes of projects to other areas. Also, Tessaban Mueang Nan is willing to accept study tours from all organizations to disseminate their experiences and outputs.

## 3.6 Tessaban Mueang Phanat Nikhom

### 3.6.1 Overview and the SFC Plan of Tessaban Mueang Phanat Nikhom

#### 1) Overview of Tessaban Mueang Phanat Nikhom

Tessaban Mueang Phanat Nikhom is located on flat area inland, around 100 km from Bangkok and around 30 km from Chonburi City. Some industrial estates including Amata Nakorn are located nearby. The Tessaban functions as a small economic center in inland Chonburi Province. This Tessaban is known as a city of commerce, transport, and logistics business.

The population of Tessaban Mueang Phanat Nikhom decreases by 100 every year. The younger generations have declined while the elderly groups have increased. The aging rate is rapidly getting faster. Unfortunately, the municipality does not have enough facilities for them. Medical capacity is available only at the primary care level. Patients who require secondary care or higher need to go outside.

Air and water quality in Tessaban Mueang Phanat Nikhom meets the environmental standard. The municipality manages all the waste disposal on its own, while there is a wastewater treatment plant for rain-fed ponds. In terms of urbanization, there is little chance to expand the city as a green belt is allocated around the Tessaban according to the city's comprehensive plan.

#### 2) SFC Plan for Tessaban Mueang Phanat Nikhom

Comparing the environmental conditions, the living environment in Phanat Nikhom is better than in other surrounding areas. More attention should be paid to the central function of Tessaban Mueang Phanat Nikhom– as a more comfortable and convenient residential area. In the SFC Plan, Tessaban Mueang Phanat Nikhom has shared the vision of 'Livable City' which is the same as the Tessaban's vision.

The SFC vision and strategy are summarized as follows:

**SFC Vision:** 'Livable City'

Strategy 1: Strengthen Phanat Nikhom as urban service center

Strategy 2: Improve multigeneration livability

Strategy 3: Utilize local resources for uniqueness of Phanat Nikhom

Strategies 1 and 2 focus on providing urban services to support various generations and help make their lives comfortable, which is at the core of the SFC Project. More practically, introducing a universal design to be used in major public facilities, infrastructures, and social environment was selected as a focus of SFC program through a series of discussions.

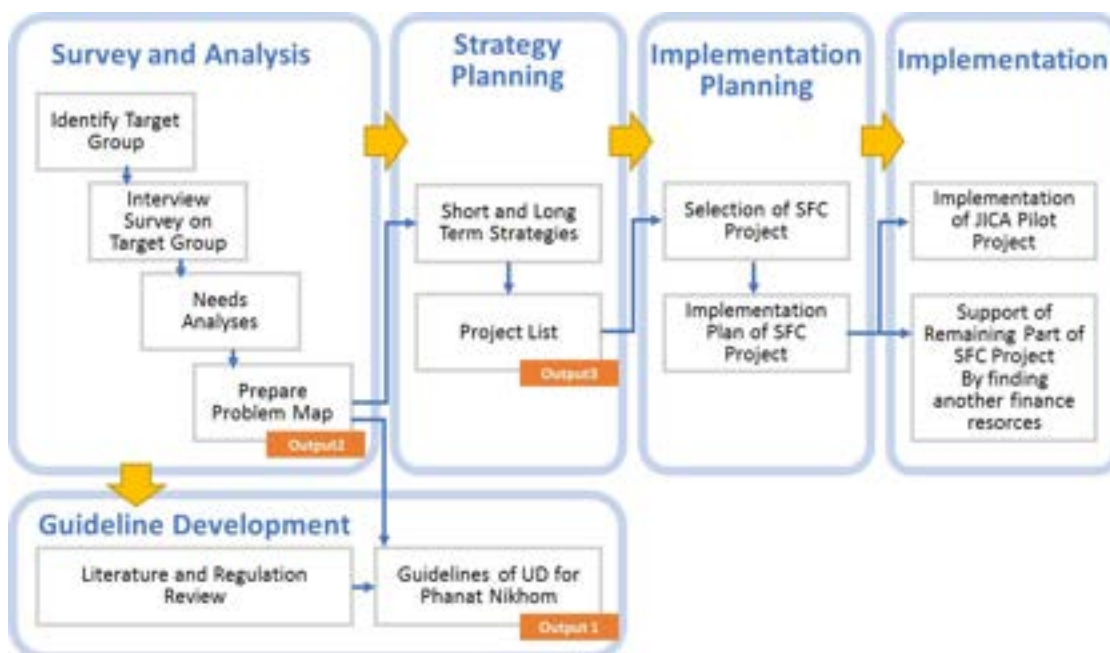
The SFC programs and the JICA pilot project are summarized in Table 3.6.1.

**Table 3.6.1 Selection of SFC Program for Tessaban Mueang Phanat Nikhom**

SFC Program	<b>Provision of Urban Services for Various Generation and Their Lives in Comfort</b>
JICA Pilot Project	<b>Project for Introducing Universal Design in Phanat Nikhom</b> <ul style="list-style-type: none"> <li>To develop universal design guideline for Phanat Nikhom</li> <li>To develop of a “long-term strategy” for introducing universal design in Phanat Nikhom and to identify “required projects”</li> <li>The renovation of Public Park at Sub-Community 9</li> </ul>
Action Plan	<b>the Action Plan for introducing Universal Design</b>
Expected output of SFC Program	<ul style="list-style-type: none"> <li>Guideline for universal design including the components of infrastructure, building, facilities/equipment and public awareness</li> <li>Diagnosis map through workshop/ interview survey and location of the problem</li> <li>Long-term strategy and project list</li> <li>Implementation of priority project</li> </ul>
Long-term impact of SFC Plan	<ul style="list-style-type: none"> <li>Livable city for all ages can enhance centrality of Phanat Nikhom, which can sustain people in Phanat Nikhom and thus sustainability of Phanat Nikhom.</li> <li>To provide lessons learned for other cities with aging society, in terms of comprehensive strategies for universal design.</li> </ul>

Source: JICA Project Team

To formulate appropriate projects, it was necessary to prepare a universal design guideline, identify the target group and problem areas including not only infrastructure but also interior of the building, information accessibility and public awareness, and develop a long-term strategy and project plan. The major activities for the SFC project are illustrated in the figure below.



Source: JICA Project Team

**Figure 3.6.1 Work-flow of SFC Project and JICA Pilot Project**

To prepare the action plan, several workshops and discussions were arranged. Initially, three workshops were organized to understand situation of Phanat Nikhom. The target of

workshop included students, workers, elderly persons, and municipal officers. The result of workshop showed that there were three issues to be considered, which are (i) waste management (ii) traffic congestion, and (iii) bedridden patients. Meanwhile, the major demands were identified which are mostly related to the public facility. This includes (i) increasing exercise place/equipment, (ii) updating public parks and handrail along walkway, and (iii) improving public toilet in every place and Braille blocks for the blind.

Similar to a result of questionnaire in the workshops, people in communities thought introducing universal design in public parks is needed. In the Tessaban officers' perception, moreover, the improvement of municipality Park was highlighted because there are many activities and people come to use it all the time; emphasis is on development to encourage more activities. Combined with the result of physical survey and interview, public facilities including parks, sidewalks, transports, and road pavement were emphasized to take account of the universal design concept.

In consideration of the results of workshops and surveys explained above, Tessaban Mueang Phanat Nikhom established eight projects in total to introduce universal design as an action plan. The project list in the action plan for introducing universal design is elaborated in the table below.

**Table 3.6.2 Projects in the Action Plan for Introducing Universal Design**

No.	Project	Budget	Duration	Responsibility
1	Ramp, Pavement, Crosswalk, Traffic and Signage Improvement Project in Old City of Phanat Nikhom Town Municipality	3.602 mil.	2018	Tessaban
2	Phanat Nikhom Stadium Improvement Project	2 mil.	2018	Tessaban
3	Tessaban Mueang Phanat Nikhom Public Park Improvement Project	2.35 mil.	2018	Tessaban
4	Renovation of Sub-community 9 Public Park, Phanat Nikhom Town Municipality under Universal Design concept	4.455 mil.	2018	- Tessaban - JICA
5	Outer Phanat Nikhom Town Municipality Pavement Improvement Project	2.34 mil.	2019	Tessaban
6	Renovation of Sub-community 6 Public Park	4.95 mil.	2019–2020	Tessaban
7	Phanat Nikhom Town Municipality Daycare for elderly persons and disadvantaged persons	20 mil.	2020–2021	- Tessaban Municipality - Thai Health Promotion Foundation - Provincial Electricity Authority (PEA)
8	Place electricity wires underground around old city and Sri-Kunchorn Road	100 mil. baht	–2032	Tessaban

Source: JICA Pilot Project

The brainstorming and workshop with elderly persons, workers and children indicated that the citizens need a public space for activities such as social communication and exercise. Three parks were selected as priority candidates. Public Park at Sub-Community 9, located

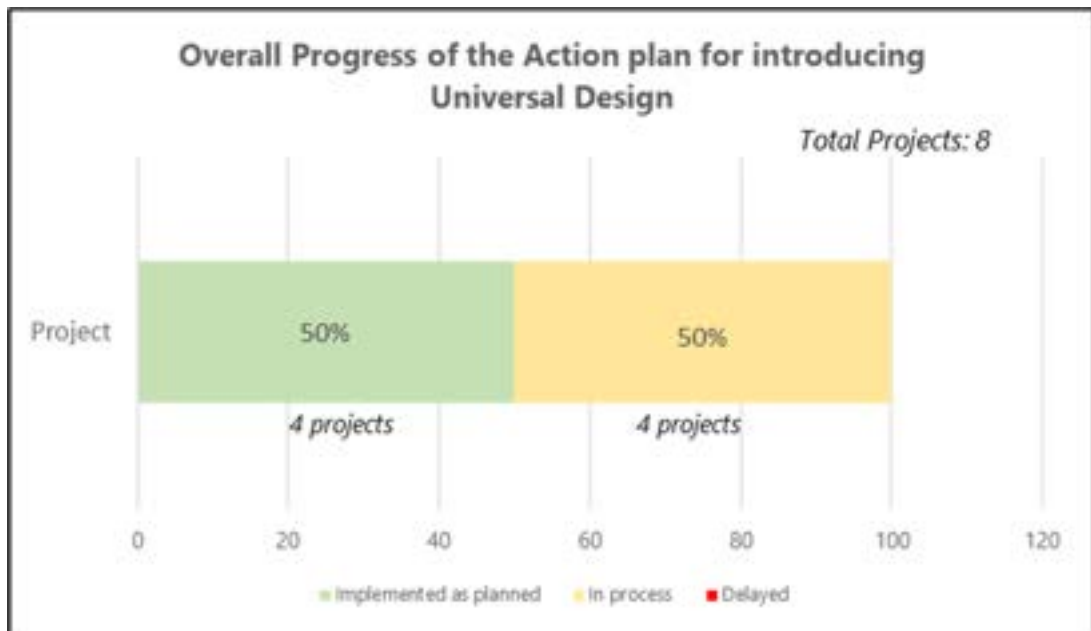
in the heart of municipality, was prioritized to introduce the first universal design in consideration of size, location and access. Therefore, from the action plan, Project 4: Renovation of Sub-community 9 Public Park was finally selected to implement as a JICA pilot project.

### 3.6.2 Progress of the SFC Plan

In this section, the progress of the action plan is examined. Further actions are identified, and upscaling of projects are determined. Together with this, the implementation body, integrated urban policy, and potential financial resources are described. The causes of project delay and any project changes are also highlighted.

Tessaban Mueang Phanat Nikhom has showed an outstanding performance in adopting universal designs to its public facilities. The LSDP is an efficient plan to drive the project in their action plan. The JICA pilot project has become a tangible output for Tessaban Mueang Phanat Nikhom. In addition, the Tessaban has increased their knowledge about universal design and the importance of an age-inclusive society.

To complete the action plan, the Tessaban has utilized the concept and study of universal design by proposing the project to other organizations. As the Tessaban is a small city, it is difficult to get a budget for mega projects. However, with the determination and clear vision of the Tessaban, the PAO has supported the mega project, which is the construction of an elderly daycare center. In addition, the Tessaban has seen the potential of its location and has requested a budget from the EEC Development Plan to improve all its public parks.



Source: JICA Pilot Project

**Figure 3.6.2 Overall Progress of the Action Plan on Introducing Universal Design**

Employing the universal design concept, study, and techniques, Tessaban Mueang Phanat Nikhom presented the remarkable progress of the action plan. Figure 3.6.2 shows the overall progress of action plan. The action plan includes eight (8) projects, half of which was completely done, while the other half are delayed mainly due to the process of budget



allocation. This means that all projects have passed through official budget channels.

The projects proposed in this action plan are mostly related to construction. The key to the success of the Tessaban in getting budget support is sufficient preparation. This means that the projects have prepared detailed designs and budget estimates, which allowed the Tessaban to get budget support from various organizations, thereby accelerating their implementation.

Table 3.6.2 presents the progress of each project in the action plan. Most of the completed projects were done using the Tessaban's budget. Mainly, the completed projects are the purchase of equipment and the improvement of the environment. The Tessaban has been active in providing public facilities for all ages. For instance, for Project 2 Phanat Nikhom Stadium Improvement Project, the Tessaban provided different types of exercise equipment for all groups of people, i.e., children, workers, and the elderly. This showed that the Tessaban is concerned about the quality of life of its people.

Another example is Project 4 Renovation of Sub-community 9 Public Park, Phanat Nikhom Town Municipality under Universal Design concept. Despite completing the renovation, the Tessaban has spent its own budget to complete it suitably. In this context, the Tessaban has not only provided the equipment but also enhanced its environment by improving the landscape. According to the JICA Project Team's recommendation, the Tessaban has installed a sandbox for the children to boost their creativity.

The most remarkable success of the Tessaban is the elderly daycare center (Project 7 Tessaban Mueang Phanat Nikhom Daycare for elderly persons and disadvantaged persons). At the beginning of the SFCI, the Tessaban was inspired to construct an elderly daycare center. However, with time and budget limitations, this project was suspended. With a strong determination, the Tessaban has proposed the project to PAO. The budget has been approved, and construction has started. This project will be completed by 2023. In addition to this, the Tessaban plans to expand the services to cover not only the people in the Tessaban but also in the wider urban area. However, it still needs more technical support to build its people's capacity to provide healthcare services. Currently, the Tessaban has already collaborated with King Prajadhipok's Institute (KPI) to provide a training course. It still requires the support from JICA, especially for the elderly daycare's operations and management.

**Table 3.6.3 Progress of Project the Action Plan for Introducing Universal Design**

No.	Name of Project	Status				Relevant Organization	Key Constraint					
		Plan	Prep	Imple	Detail		COVID-19	Budget	Reg.	Research	Personnel	Remark
1	Ramp, Pavement, Crosswalk, Traffic and Signage Improvement Project in Old City of Phanat Nikhom Town Municipality		■	□	The improvement of pavement in the old town city for all ages under universal design concept. This aims to provide a good accessibility, mobility, and convenience.							The budget of project has increased to 5.5 mil. It requires the next FY budget to support and complete the implementation.
2	Phanat Nikhom Stadium Improvement Project		■	■	Tessaban has purchased the exercise equipment for all ages groups including: 1) Children: exercise and play equipment 2) Workers: exercise equipment 3) Elderly: exercise equipment; with seats or sitting exercise machine.							N/A
3	Tessaban Mueang Phanat Nikhom Public Park Improvement Project		■	×	This project has been proposed to EEC project to improve the walkway and seating areas for elderly and disable person. This also includes the UD signage for the disable. All public parks in Tessaban will be implemented.							The project has been approved however the budget for its implementation is now suspended.
4	Renovation of Sub-community 9 Public Park, Phanat Nikhom Town Municipality under Universal Design concept		■	■	- Tessaban has spent their own budget to complete and promote activities at the park. This includes: 1) Exercise machine for elderly and working group 2) Sandbox for children to increase the creativity. 3) Public seat and rest area In addition, Tessaban has							N/A

**Final Report, Vol. 2: Model City Projects**

No.	Name of Project	Status				Relevant Organization	Key Constraint							
		Plan	Prep	Imple	Detail		COVID-19	Budget	Reg.	Research	Personnel	Remark		
5	Outer Phanat Nikhom Town Municipality Pavement Improvement Project		■	■	improved the park environment by planting the tree. Completed									N/A
6	Renovation of Sub-community 6 Public Park		□		<ul style="list-style-type: none"> <li>- Tessaban has integrated this project into LSDP.</li> <li>- Currently, there is in a process of detail design preparation to set the budget for its implementation.</li> <li>- The design of this project will be aligned with the renovation of public park sub community 9. Mainly, focusing on universal design concept.</li> </ul>									Under the process of detail design preparation.
7	Phanat Nikhom Town Municipality Daycare for elderly persons and disadvantaged persons		■	□	<ul style="list-style-type: none"> <li>- The daycare center will be welcome for all people; either those who live in Tessaban or outside Tessaban.</li> <li>- The center will have many equipment and activities for elderly persons as a comprehensive healthcare.</li> <li>- The main operation has been committed by the high-level of doctors.</li> <li>- There will be some service fees, but these would be affordable.</li> <li>- Currently, the project is now in the process of construction. It is expected to complete by 2023.</li> </ul>									<p>The budget has been approved by PAO. However, in the process of proposing this project, Tessaban has difficulties on the budget allocation. With the small city, the budget is insufficient to implement by Tessaban.</p> <p>This project is also required more knowledge about elderly care services. Mainly, it should have training for Tessaban</p>

No.	Name of Project	Status				Relevant Organization	Key Constraint				Remark	
		Plan	Prep	Imple	Detail		COVID-19	Budget	Reg.	Research		Personnel
8	Place electricity wires underground around old city and Sri-Kunchoon Road											staff and collaborate with JICA to get the ideas or direction as a service provider. This will enrich the center.
					This is a part of long term project.							The underground electrical wires requires researches and public hearing from its citizens.
		<b>Remark:</b>										<b>Remark:</b> Causes of delay are COVID-19, budget, regulation, required further research or information, and skills of personnel.
		On plan			● Keep implementing							
		In process			■ Done							
		Delayed			□ Under the process							
					× Suspended							

Source: JICA Project Team

For the in-process project, the main constraint to complete project is budget. As the city is small, there is only a small portion of the Tessaban's budget for the investment, i.e., approximately 12-25 million per year. Therefore, large-scale projects have to get the support from the other organizations.

Potentially, Tessaban has received the budget support from EEC development plan to improve all parks by adopting universal designs, particularly, the project on the improvement of the walkway, seating areas, and signage for the elderly and PWDs. However, this project is now suspended due to the delay of EEC budget allocation.

By utilizing the outputs from the JICA pilot project, Tessaban is now preparing the detailed design to improve the public park in sub community 6. The detailed renovation at sub community 9 will be used as the primary plan and direction. Once the detailed design completed, the Tessaban will use its own budget for implementation.

Project 8; Place electricity wires underground around old city and Sri-Kunchorn Road is considered as a long-term project. It aims to improve the image and landscape of Tessaban Mueang Phanat Nikhom. However, to place electrical wires underground will require a feasibility study and public consultation with the citizens. The agreement of citizens is highly necessary for this project because the construction process can be harmed or interrupted their daily life.

With the successful progress of the action plan, Tessaban Mueang Phanat Nikhom not only can provide efficient public health services but also enhance the environment for all ages. After all projects are completed, all age groups in the city will have better quality of life. Also, the city environment will improve. To illustrate, to improve the public park, the green space will be increased. Consequently, this not only provides the recreational area for people but also reduces air pollution in the city. Besides these, with the good environment and friendly landscape, the Tessaban can attract more visitors, study tours, and tourists, promoting the local economy. As a result, Tessaban Mueang Phanat Nikhom will successfully achieve a livable city as its vision.

### **3.6.3 Status and Future Direction of the Pilot Project**

This section focuses on the status of the pilot project supported by JICA. This also aims to evaluate how the Tessaban utilizes the output of the pilot project and how they operate and maintain the quality of project construction. Some challenges and plans are also identified.

Due to the increasing number of the elderly in the city and the people's desire to have a public space for various activities, Tessaban Mueang Phanat Nikhom renovated the public park in Sub-community 9 by applying the principles of universal design to accommodate people regardless of age and ability. The renovation of the public park at Sub-Community 9 was financed by two sources, namely tessaban budget and JICA budget. The renovation of basic infrastructure was undertaken by the municipality, while the design and introduction of universal design were done by JICA. The details are explained in the table below.

**Table 3.6.4 Role Sharing in the Renovation of Public Park in Sub-Community 9**

Tessaban	JICA
<p><b>Part 1: Demolition of existing condition</b></p> <ul style="list-style-type: none"> <li>- Demolished the existing constructions.</li> <li>- The drainage pipelines were placed in to protect the area from flood</li> </ul> <p><b>Part 2: Leveling the ground and preparing foundational system</b></p> <ul style="list-style-type: none"> <li>- Land was leveled for construction</li> <li>- Electrical line was installed underground</li> <li>- Poles and public park sign were constructed</li> </ul> <p><b>Part 3: Construction of the new elements</b></p> <ul style="list-style-type: none"> <li>- Gutters were constructed along the park.</li> <li>- Exercise area (Blue) and sand pond (Orange) were prepared as shown in the following figure.</li> </ul> <p><b>Part 4: Finishing all constructions</b></p> <ul style="list-style-type: none"> <li>- Crab grass planted (Red), as shown in above figure</li> <li>- Sand poured in the sand pond</li> <li>- Concrete stamped in the Aerobic/Exercise Area</li> <li>- Public park's sign decorated and completed as shown in the following illustration</li> <li>- Other details and constructions made, such as placing of concrete manhole</li> </ul> <p>Electric pole installed</p>	<p><b>Part 1: Demolition and leveling the ground</b></p> <ul style="list-style-type: none"> <li>- Demolished the park way (inside Public Park)</li> <li>- Demolished the footpath (outside Public Park)</li> <li>- Demolished the fences (edge of Public Park) to put eight (8) elderly seats</li> <li>- Demolished the fences (edge of Public Park) to construct three (3) entrances</li> <li>- Leveled the ground in all areas</li> </ul> <p><b>Part 2: Start the new construction</b></p> <ul style="list-style-type: none"> <li>- Poured concrete in the park way</li> <li>- Installed pavements on the footpath. The pavement had Braille blocks and concrete pavement along the street for elderly and handicapped persons.</li> <li>- Constructed foundation structure for elderly seats and entrances.</li> </ul> <p><b>Part 3: Finishing all constructions</b></p> <ul style="list-style-type: none"> <li>- Cleared up the park way and footpath</li> <li>- Decorated the entrances with steel doors and color</li> <li>- Finished and furnished elderly seats by color and checked the structures</li> <li>- Prepared crossroad</li> <li>- Installed handrails in the Public Park</li> <li>- Installed universal design equipment</li> <li>- Installed universal design signage</li> </ul>

Source: JICA Project Team

As a part of the JICA pilot project, the renovation of the public park in sub community 9 was the key element. After demolishing the existing structures in the park, the following were installed: pavement with Braille blocks, slopes with handrails, benches, signage, and other universal design playground equipment. Besides this, workshops on universal design were organized to raise the awareness and promote the understanding of the concept and principles of universal design among the public and municipal staff and for them to apply this knowledge in developing their city.

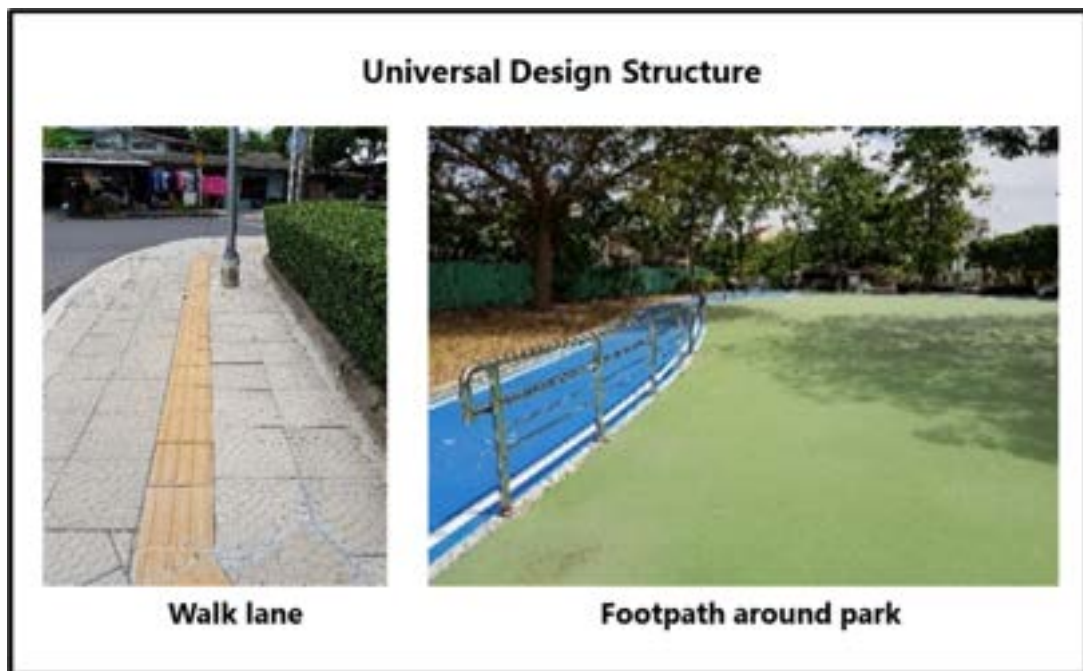
The Tessaban and the surrounding communities, i.e., community 9, 4, and 5, are responsible for maintaining the renovated park in good condition. All installed equipment is also well-maintained. The Tessaban is in charge of the maintenance and repair of the construction, as wells replacement of equipment. Meanwhile, the communities take responsibility for the cleanliness of the park.

The quality of equipment and construction under the JICA budget is shown in Figures 3.6.3 to 3.6.5. Universal designs were used for the following:

- Structure, including walkways and footpath around the park.
- Equipment, including seats for the elderly and PWDs, steel door with grill, and 150-

meter long, stainless steel handrail.

- Symbols, including no parking sign, turning signs, symbols for PWDs, and location signage.



Source: JICA Project Team

**Figure 3.6.3 Structures with Universal Designs**



Source: JICA Project Team



**Figure 3.6.4 Equipment with Universal Designs**



Source: JICA Project Team

**Figure 3.6.5 Symbols with Universal Design**

The Tessaban has maintained the public park and the additional equipment, such as exercise machines and play spaces (as shown in Figure 3.6.6), installed to support multigenerational activities.



Source: JICA Project Team

**Figure 3.6.6 New Park Amenities**

As a result, the citizens have shared the space to work out, gather, and play. Different groups of people use the park all days with the various activities. In the morning and evening, the exercise clubs usually use the space for aerobics. The elderly also has an exercise on the walkways. Meanwhile, the children can enjoy play equipment installed at

the park. At night, groups of women also hold group exercises. This showed that the renovation has supported all activities and age groups.



Source: JICA Project Team

**Figure 3.6.7 Multi Generation Activities at the Park**

Besides the renovation, a universal design guideline was also prepared for Tessaban Mueang Phanat Nikhom. Standards of universal design, such as ramps for wheelchairs, handrails, and symbols, were compiled into a "Universal Design Guideline" document for application in other parks and public facilities in Phanat Nikhom.

The Tessaban has used this guideline to improve public facilities, construction, and other projects. The guideline is very useful for the Tessaban to implement universal design. Meanwhile, it enhances the capacity and understanding of the Tessaban and its citizens about the universal design concept. In the end, the Tessaban can improve the quality of all citizens' life and its environment efficiently.

#### **Outcomes of the Pilot Project**

- The concept of universal design is to provide access to all park users. For instance, handrails were installed in many areas in the park for the elderly and PWDs, while park benches are available for people to relax in or meet others.
- The park also has a sandbox for children and a multipurpose plaza to encourage intergenerational interaction.
- While it is important to apply universal design principles in designing park facilities and in choosing equipment, it is also vital to promote its understanding by the public and municipal staff through actual experience.

#### **3.6.4 Lessons Learned**

To tackle the increasing rate of ageing population, Tessaban Mueang Phanat Nikhom has

applied the concept of universal design. The friendly built environment has become accessible to those vulnerable to exclusion from the society and economy. Using universal designs in public spaces has not only provided easy accessibility to the people but also enhanced the participation and social interaction among various age groups. Providing universally designed facilities has the potential to promote daily living and engagement in life. Toward a successful ageing society, using universal designs is a potential stepping tone for Tessaban Mueang Phanat Nikhom.

Using universal designs at the public park not only provide social benefits; the environment and economy are likewise enhanced. The landscape has become friendlier and accessible which gives a good image of the city. The age-friendly environment can attract more people to visit and learn. This will indirectly stimulate the local economy of the Tessaban. The citizens will earn more and their livelihoods will become more sustainable and secured.

The Tessaban has learned from using universal design. Public awareness has been raised and promoted in several workshops. The citizens have more concern for their quality of life and mobility. With the actual construction, the Tessaban and its citizens recognized the importance of providing the right environment for everyone. Besides this, the community and citizens became more interested in an age-friendly environment as the design is easy to understand. Obviously, the new structure, equipment, and symbols have effectively communicated the necessary information and have recognized the capacity of PWDs and the elderly when provided with the appropriate environment.

The concept of universal design is also integrated in the future direction. Not only the Tessaban, but also the provincial government, has been more interested in the concept. The Tessaban has applied the learning from the JICA pilot project and process in their own facilities and built environment. At the same time, they are promoting public health services in the city. By proposing the project to PAO, the Tessaban can be a service provider in a larger scale. Particularly, the elderly care center will provide wider services for all people living nearby the Tessaban. However, capacity building for health care service is required for the efficient operation. Training and further knowledge are essential for the Tessaban to step up their services.

In addition, the Tessaban has also shared their appreciation of universal designs at the regional scale. By proposing a project to the EEC, improvements using universal designs will be widely recognized. The city will be more livable, while quality green spaces will increase and be made accessible to all.

Under the SFCI, Japanese experiences have inspired the Tessaban to promote an age-friendly environment. Also, elderly care services were highly commended by the Tessaban. Learning from other cities, especially those in Japan, were fruitful for the future development of the Tessaban. Such experiences from other cities enriched its knowledge not only to improve the environment but also to provide healthcare services.

The determination and progressive vision of the Tessaban are key to the success of the city. The Tessaban has tackled emerging changes in its society. Realizing a city for all ages, the Tessaban has addressed the national concern on an ageing society, which is prioritized in the national strategy of Thailand, even though the Tessaban met challenges in budget

allocation and preparation (detailed design, concept plan). It has become more crucial for the Tessaban to get further support.

With the success of Tessaban Mueang Phanat Nikhom, the city has become a leader in the use of universal designs. These experiences are highly useful for the other local cities to learn and get an inspiration from. With the experiences in SFCl, the Tessaban can initially expand their partnership networks not only with the national and provincial levels, but also with the other local cities. Tessaban Mueang Phanat Nikhom is welcome for the study tour or any visit to exchange successful cases and challenges of city under universal design concept.

## 3.7 Tessaban Mueang Phitsanulok

### 3.7.1 Overview and the SFC Plan of Tessaban Nakhon Phitsanulok

#### 1) Overview of Tessaban Nakhon Phitsanulok

Phitsanulok's locational advantage to promote strong regional connectivity makes it an important city. With this characteristic, Tessaban Nakhon Phitsanulok is the center for provincial administration, business, and public services such as education and medical care. In addition, Phitsanulok functions as a gateway to Sukhothai and is a local tourism destination.

However, the population in the Tessaban has started to decrease and the population in the urban area has experienced outmigration as well. It seems to be a warning to the deterioration of its economic centrality. Meanwhile, Phitsanulok seems to have sufficient development potentials and economic opportunities. In addition, it makes a lot of effort on environmental improvement and community participation, which resulted in the city being well known as one of the best cases in Thailand. It may help the sustainability of the Tessaban and its urban area to maintain good environmental conditions.

#### 2) SFC Plan for Tessaban Nakhon Phitsanulok

Phitsanulok should pay more attention to strengthening its function as a core of the urban area. In this regard, it is necessary to encourage public service and business in the Tessaban. On the other hand, the surrounding area should be a manufacturing, transport, and residential area with balanced environment and utilities.

As a result, Tessaban Nakhon Phitsanulok has indicated the vision of a "center with nice landscape and happy citizens" in its SFC Plan with a sound economic base as "Indochina's service town," according to its Provincial Plan and the LSDP.

The details of its SFC vision and strategy are summarized below.

**SFC Vision:** Center with Nice Landscape and Happy Citizens

Strategy 1: Encouragement of Next Leading Businesses

Strategy 2: Improvement of "Naa Yuu" and Local Pride for All Generations

Strategy 3: Provision of Infrastructure and Utilities for Safety and Sufficient Living Environment

Due to the rapid increase in the number of elderly persons in the city, Tessaban Nakhon Phitsanulok focused on the preparation for an ageing society. Therefore, the program on the preparation for an aged society under Strategy 2: Improvement of "Naa Yuu" and Local Pride for All Generations was selected for long-term planning to deal with an ageing society. To realize the program, four main components, i.e., hardware, software, peopleware, and database, were the focus. The SFC program and JICA pilot project were expected to be fundamental to addressing the ageing society in Tessaban Nakhon Phitsanulok.

The details of the SFC program and JICA pilot project are summarized in Table 3.7.1.

**Table 3.7.1 Selection of SFC Program for Tessaban Nakhon Phitsanulok**

SFC Program	<b>Preparation for Aged Society</b> <ul style="list-style-type: none"> <li>• Hardware improvement</li> <li>• Software improvement</li> <li>• Peopleware development</li> <li>• Database and IT system to serve social welfare and medical service for elderly people</li> </ul>
JICA Pilot Project	<b>The Pilot Zone for Creating Sustainable Ageing Society</b> <ul style="list-style-type: none"> <li>• Apply universal designs to infrastructure and public facilities (hardware)</li> <li>• Care system integration (software)</li> <li>• Capacity development (people ware)</li> <li>• 10-year strategic plan</li> </ul>
Action Plan	<b>The 10-year Strategy for Sustainable Ageing Society</b>
Expected Output of SFC Program	<ul style="list-style-type: none"> <li>• Improved infrastructure supporting all standards for the aged and the disabled</li> <li>• Integrated care system to provide people with efficient social welfare services</li> </ul>
Long-term Impact of SFC Plan	<ul style="list-style-type: none"> <li>• Contribute to creating a “livable city for all people” including the aged and the disabled. It may generate sustainability of society of Phitsanulok in the long term.</li> <li>• Transfer of lessons to other similar tessaban nakhon and their surrounding tambon.</li> </ul>

Source: JICA Project Team

### 3) **The 10-year Strategy for Sustainable Ageing Society**

To address the ageing society and concretely support further implementation in the JICA pilot project, Tessaban Nakhon Phitsanulok formulated the 10-year Strategy for Sustainable Ageing Society. It is a long-term plan from 2018 to 2027 which is expected to function as a stepping stone for better policies to tackle the problem of an ageing society. The strategy was designed by the communities, relevant organizations, and municipal officials through a participatory process.

The 10-year Strategy for Sustainable Ageing Society focuses on four main aspects for improving the quality of elderly life and addresses healthcare, society, economy, and environment. These aspects were reflected in four strategies with their respective programs and projects, as shown below.

**Table 3.7.2 Strategies and Programs under the 10-year Strategy for Sustainable Ageing Society**

Strategy	Program
<b>Strategy 1: Health Care System Development</b>	<p><b>Program 1:</b> Enhancement of public participation and development of health management network</p> <p><b>Program 2:</b> Development of technology and innovation for serving ageing society by promoting a health care through technology system</p>

Strategy	Program
<b>Strategy 2: Promotion of Smart Ageing Society</b>	<p><b>Program 1:</b> Development of religion, tradition, art-culture, and recreation for community and public services</p> <p><b>Program 2:</b> Development of promotion of social welfare management for elderly, PWDs, and other disadvantaged persons</p>
<b>Strategy 3: Silver Economy</b>	<p><b>Program 1:</b> Development of promotion of commerce for local economic and income generation</p> <p><b>Program 2:</b> Development of promotion of commerce for local economic and decreased household expenditure</p>
<b>Strategy 4: Public Space and Facility Development with Universal Design</b>	<p><b>Program 1:</b> Promotion of self-renovation of housing for elderly persons</p> <p><b>Program 2:</b> Program for promotion of public space renovation</p>

Source: JICA Project Team

The details of each strategy and project are summarized as follows:

- **Strategy 1: Health Care System Development**

This strategy focuses on the improvement of health promotion system for a healthy and happy ageing society. "Coaching system" has been developed to enhance the capacity of health practitioners of the Phitsanulok Municipality. Recreation, primary test, rehabilitation for chronically ill patients, and a pilot community for a healthy and sustainable ageing city are the ideas highlighted. In addition, the strategy aims to develop and promote the efficient health care system for elderly persons in Phitsanulok City. The Strategy for Health Care System Development includes two main programs and supported by the following projects:

**Table 3.7.3 Projects in Strategy 1: Health Care System Development**

No.	Project	Description	Duration	Budget	Resp. Org.
<b>Program 1: Enhancement of public participation and Development of health management network</b>					
1-1	Lively Elderly Persons with Health-Conscious	<ul style="list-style-type: none"> <li>- Workshop for exchanging and learning for basic health checking and attend the activity for health at least once a week</li> <li>- Activities for mental health and health-conscious, recreational activities to develop career skills in official time, everyday</li> <li>- Create Volunteer for Elderly Network as friend-help-friend, 80 persons per year</li> </ul>	2018–2027 FY2019–2020	200,000 THB/Year	Tessaban Community Mass Media
1-2	Promotion of health and sanitation for elderly and disable persons	<ul style="list-style-type: none"> <li>- Provide basic health checking service and health-behavior modification as well as mental health for member of elderly club at least twice a week, 8 times for a month.</li> </ul>	2020–2027	300,000 THB/Year	Tessaban Community



No.	Project	Description	Duration	Budget	Resp. Org.
1-3	Development of health promotion and learning system	- Arrange the stage for exchanging process of health solution by one representative of community committee, 64 communities, and 2 representatives of Village Health Volunteer from 64 communities, 128 persons. In total, the number of participants is 192 persons for 4 times.	2018–2027 FY2019–2020	300,000 THB/Year	Tessaban Community
1-4	Provision of Thai Medical Service at home	- Visit the elderly homes, Paralysis patients forwarded from hospital and community to check their own health and to revive their health by Thai medicals at least 20 times per week.	2020–2027	300,000 THB/Year	Tessaban Community
1-5	Fit and Firm for Fun for promoting health-behavior modification for citizens in Phitsanulok City	- Arrange the Workshop for providing knowledge for those who are overnutrition - Arrange the activities to promote an afterwork exercise for attendants continually - Check the physicality and collect Body Mass Index value of attendants for evaluation before and after joining this activity	2019–2027	100,000 THB/Year	Tessaban Community
1-6	Pilot-community for bonding relationship and promoting health-conscious	- Arrange activity for elderly persons in community with participation of all ages to create the value of elderly persons, propagate the folk wisdom and create own culture to next generations - Develop self-reliance and capacity of elderly persons in community - Arrange the activities for promoting nutrition and safe food - Promotion of eatable home vegetable for elderly persons	2018–2027 FY2019–2020	100,000 THB/Year	Tessaban Community
1-7	Promoted Religious Place to be Community Health Promotion	- Religious places should be developed on standard of health promotion at least once a year.	2020–2027	100,000 THB/Year	Tessaban Community
1-8	Promotion of proactive elderly health in community	- Arrange the activities for health promotion for elderly persons in community, 2 communities per year.	2020–2027	100,000 THB/Year	Tessaban Community
1-9	Elderly Life Plan “How to live with happiness”	- Elderly persons who are ready and willing to join the workshop for increasing capacity of life planning, 4 communities, 30 persons/community	2018–2027 FY2019–2020	200,000 THB/Year	Tessaban Community
<b>Program 2:</b> Development of technology and innovation for serving ageing society by promoting a health care through technology system					
2-1	Health and Medical Alert System	- Develop one health and medical alert system - Develop one program for collecting personal health information - Develop the one center for data transmission	2020–2027 FY2019–2020	90,000 THB/Year	Tessaban

No.	Project	Description	Duration	Budget	Resp. Org.
		- Develop one GPS tracking system			
2-2	Development of Integrated Data on Elderly Health	- Develop one data transmission system for personal health record - Develop one Home-Care Service as a long-term health care.	2018–2027 FY2019–2020	200,000 THB/Year	Tessaban
2-3	Remote Health Care	- Develop one remote health care system through local monitoring - Develop the center for elderly data transmission - Develop one Virtual Reality room as Chat room to build the relationship among elderly persons.	2018–2027 FY2019–2020	100,000 THB/Year	Tessaban
2-4	Preparation of Automatic Self-Exercise Program	- Renovate one prototype-room for self-exercise at Phra Ong Khao Community Health Center - Develop one automatic personal exercise program	2020–2027	300,000 THB/Year	Tessaban

Source: JICA Project Team

- **Strategy 2: Promotion of Smart Ageing Society**

This strategy focuses on community services and socio-cultural perspectives toward a sustainable ageing city. Community culture, local wisdom, establishing a college for the elderly, strengthening community roles, registering senior citizens and human capital are the major ideas being highlighted here. In addition, the strategy aims to promote a better society by respecting the elderly person. The strategy on the Promotion of Smart Ageing Society has two programs, and its projects are listed in Table 3.7.4.

**Table 3.7.4 Projects in Strategy 2: Promotion of Smart Ageing Society**

No.	Project	Description	Duration	Budget	Resp. Org.
<b>Program 1: Development of Religion, tradition, art-culture and recreation for community and public services</b>					
1-1	Promoting the establishment of Sapa-Kaffee Chumchon	- Arrange the discussion group for exchanging knowledge between elderly persons and communities, once a week, every week	2019–2027 FY2019–2020	90,000 THB/Year	- Tessaban - Community
1-2	Promotion of community art and cultural local philosopher museum	- Setting up the supporting fund for activities in the clubs such as purchasing Ankalung, Thai instrument, for Thai Song Club	2019–2027 FY2019–2020	50,000 THB/Year	- Tessaban - Community
1-3	Elderly College for life-long learning	- Prepare short term curriculum at least 9 courses - Trail the curriculum with elderly groups in each generation, 40 persons per generation - Taking a lesson for preparing elderly curriculum	2019–2027 Course FY2019–2020 Training: 2020–2027	150,000 THB/Year	- Tessaban - Community
1-4	Promotion of local culture and lifestyle	- Tessaban Community Network joins the seminar for “The Conservation of Phitsanulok Urban Lifestyle”, about 1000 persons	2018–2027 FY2019–2020	200,000 THB/Year	- Tessaban - Community - Phitsanulok Cultural Council
1-5	Promotion and preserve the Thai and international song, Thai dance, and Thai culture	- Arrange trainings of Thai Song, Thai traditional dramatic performance (likae), orchestra band, and international song for students and youth in Phitsanulok City, 4 generations, 50 persons per generation - Elderly persons who are knowledgeable about Thai, international Song, Thai dance, and art & culture, will be a propagator	2018–2027 FY2019–2020	200,000 THB/Year	- Tessaban - Community - School
1-6	Study, research and develop the folk wisdom	- Arrange the activities to admire those who benefit for community and local philosophers, in terms of culture, 10 persons/year	2021–2027	200,000 THB/Year	- Tessaban - Community - School - Phitsanulok Cultural Council
1-7	Promotion of social activities for elderly persons	- Social Activities	2018–2027 FY2019–2020	600,000 THB/Year	- Tessaban - Community - School
<b>Program 2: Development of Promotion of social welfare management for elderly, disable and disadvantage persons</b>					
2-1	Development of elderly capacity and those who incur social problems	- Workshop for develop capacity of elderly and those who incur social problems	2021–2027	500,000 THB/Year	- Tessaban - Community
2-2	Enhancement of family institution	- Activities for promoting family institution by training	2018–2027	500,000 THB/Year	- Tessaban - Community - Family Institution
2-3	Development of Social welfare standard	- Standard and manual for providing social welfare by officials, head of community, and citizens in all aspects	2021–2027	150,000 THB/Year	- Tessaban - Naresuan University

No.	Project	Description	Duration	Budget	Resp. Org.
		Workshop for social welfare knowledge			
2-4	Development of registration system for local philosophers and elderly intellectual property	- Make a self-registration program - Prepare the database for collecting local philosopher's background and elderly intellectual property as one system	2021-2027	150,000 THB/Year	- Tessaban - Naresuan University
2-5	Preparation of e-book library for searching role-model of elderly intellectual property	- Collect database of the background and details of personal intellectual properties - Develop E-Book system	2019-2027 FY2019-2020	150,000 THB/Year	- Tessaban
2-6	Development of website for public relation of activities and the role-model	- Develop Website for disseminating and PR the activities of the role-model	2019-2021 FY2019-2020	150,000 THB/Year	- Tessaban
2-7	Development of information transmission for elderly communication	- Develop Smart City System to deliver necessary information in daily life	2018-2027	600,000 THB/Year	- Tessaban
2-8	Development of information technology database for quality of elderly life	- Develop Smart City System to be extended the benefits to cover all areas	2018-2026	150,000 THB/Year	- Tessaban
2-9	Development of social welfare and social protection system for elderly persons (case by case)	- Extension of Social Welfare and assistance, especially Fragile Group, to be equal	2018-2027	200,000 THB/Year	- Tessaban

Source: JICA Project Team

- **Strategy 3: Silver Economy**

This strategy focuses on the promotion of supplemental income and occupation for senior citizens. Workshops on occupation development, marketing, branding, and quality improvement are highlighted. Moreover, this strategy also emphasizes sufficient economic, saving strategy, and transformative learning for elderly people in the field of finance and crime, family accounting, and family financial management. In addition, the strategy aims to promote local economies through the participation of elderly persons. It focuses on the economic aspect of sustainable ageing society. The Strategy for Silver Economy has two programs and the following projects:

**Table 3.7.5 Projects in Strategy 3: Silver Economy**

No.	Project	Description	Duration	Budget	Resp. Org.
<b>Program 1: Development of Commerce for Local Economic and Income Generation</b>					
1-1	Promotion of career training and income generation	Career Training at least 6 curriculums for the elderly and those who are interested, the curriculum should include:  1) Promotion of Vegetable Planting 2) Food and Snack Production 3) Food Processing 4) Thai massage 5) Invention 6) Elderly Care Service etc.	2018–2023  FY2019–2020	300,000 THB/Year	- Skill Dev. - Prov. M Society - Prov. Agriculture - Community - Educational institution - LAO - Tessaban - Community Dev. - COC
1-2	Promotion of Online-Market by technology	- Training for Technology and Online media for marketing and distribution at least 2 generations, 20 persons/generation	2018–2022	Domestic Marketing (1st to 5th year): 350,000 THB/Year	- Educational institution - Tessaban - Prov. Trade and industry
			2023–2027	International Marketing (6th to 10th year): 175,000 THB/Year	- enterprise incubation, NU
1-3	Promotion of Sales, Exhibition, Product and Marketing	Arrange the exhibition  1) Create the channel and network for product distribution 2) Make MOU with shops at least 2 places 3) Set up exhibition of local products in the 3rd, 5th, 7th and 9th year 4) Training of product development by field trip 5) Workshop for exhibition arrangement	2019–2027	15,000 THB/Year (2nd-10th year)  200,000 THB/Year for the 3rd, 5th, 7th and 9th year	- office of commercial affairs - COC - Civil Society - Community Dev. - Tessaban - Community
1-4	Promotion and Development of OTOP standard	- Training for OTOP screening and selection - The products are on OTOP standard, at least 1 product per 2 years	2019–2027  FY2019	200,000 THB/2 Years	- Community Dev. - Tessaban - Relev. Org.
1-5	Development of brand for elderly products	1 Brand for 64 communities (product selection)	2021–2027	200,000 THB/Year	- Educational institution - Tessaban - Private sector - Public sector

No.	Project	Description	Duration	Budget	Resp. Org.
<b>Program 2: Development of Promotion of Commerce for Local Economic and decreased household expenditure</b>					
2-1	Increasing of decreased household expenditure	- Workshop for building awareness for the management of decreased expenditure, at least 4 times, 100 persons/time	2021–2027	400,000 THB/Year	- Tessaban - Community Development Bank for Agriculture and Agricultural Cooperatives
		- Training for producing household appliance, 4 times, 20 persons/time	2021–2027	200,00 THB/year	
2-2	Promotion of community Saving	- Workshop for financial and saving management, 4 times a year, 100 person/time  - Promotion of saving and National Saving Fund, 4 times/year	2020–2026	400,000 THB/Year	- Financial institution - National Saving Fund Tessaban
2-3	Training for seeing through a trick of financial risk for elderly persons	- Training for providing knowledge of financial risk for elderly person, 4 times (100 persons/zone)	2019–2027  FY2019–2020	100,000 THB/Year	- Police - Office of public sector Anti-Corruption Commission - Office of the Phitsanulok Attorney - Provincial Justice Office - Provincial Office
2-4	Development of registration system for taking care of elderly persons and those who need to generate an income	- Develop the registration system for elderly persons who need to generate income 1 System	2018–2022	100,000 THB/Year	Tessaban
2-5	Program for family-financial management	- Develop Program of financial management for family institution 1 System	2021–2022	200,000 THB/Year	Tessaban

Source: JICA Project Team

- **Strategy 4: Public Space and Facility Development with Universal Design**

This strategy focuses on the improvement of infrastructures and public facilities. First, for individual homes, this strategy includes a one stop service for home renovation and consultants to develop houses for PWDs and elderly and to disseminate information to increase understanding of an ageing city. Second, public spaces and facilities, such as pathways, cross roads, traffic lights, parks, and community spaces, an example of good housing for an ageing society be designed and constructed in a public space in Phitsanulok City. This house will be used for learning and establishing positive values of elderly citizens in the city. In addition, the strategy aims to develop better and livable public spaces and facilities using universal designs for supporting elderly life. It focuses on the environmental aspect for a sustainable ageing society. This strategy has two programs and the following projects:

**Table 3.7.6 Projects in Strategy 4: Public Space and Facility Development with Universal Design**

No.	Project	Description	Duration	Budget	Resp. Org.
<b>Program 1: Promotion of self-renovation of housing for elderly persons</b>					
1-1	Promotion of renovation for suitable elderly house	Campaign for building public awareness, in terms of, the suitable construction for elderly persons	2018–2027	150,000 THB/Year	- Tessaban - Community - Mass media
1-2	Example Elderly House Model for supporting the elderly's life	- Elderly House Model at Chaloe Phra Kiat - Develop Safety home system 1 system	2018–2027 FY2019–2020	1,000,000 THB/Year	- Tessaban
1-3	Elderly-Housing Consultant Center	Provide advice about construction or renovation for elderly housing every Wednesday	2018–2027 FY2019–2020	150,000 THB/Year	- Tessaban - Community - Provincial Social Development and Human Security Office - NU
1-4	Development of housing for supporting elderly and disable persons in daily life	Those who face with housing issues receive social welfare thoroughly and fairly	2018–2027 FY2019–2020	500,000 THB/Year	- Tessaban - Army - NU - Provincial Social Development and Human Security Office - Financial institution
<b>Program 2: Promotion of Public Space Renovation</b>					
2-1	Construction and renovation of footpath and road for all	• Construct footpath and road at least one line/year • Construct and renovate the footpath for elderly and disable persons	2019–2027 FY2019–2020	3,000,000 THB/Year	- province - Tessaban - PWA - PEA - Police - Tele communication
2-2	Promotion of renovated environment in religious places for supporting elderly persons	Campaign for providing the religion to develop religious place for supporting elderly person	2019–2027 FY2019–2020	200,000 THB/Year	- Tessaban - Religious places
2-3	Renovation of official building, place and public park to have suitable environment for elderly persons	Improve the official building, places and public parks	2019–2027 FY2019–2020	4,000,000 THB/Year	- Tessaban
2-4	Footpath Orderliness	- The official orders the street vendors - The owner of house and shop keep clean the footpath	2018–2027	100,000 THB/Year	- Tessaban - Army
2-5	Smart Cross Road for Elderly persons	Develop Automatic Smart Cross Road	2021–2027	4,000,000 THB/Year	- Tessaban

Source: JICA Project Team

The 10-year Strategy for Sustainable Ageing Society is an action plan for Tessaban Nakhon



Phitsanulok. The next section presents the results of its monitoring and evaluation, the causes of delay, and changes to the plan.

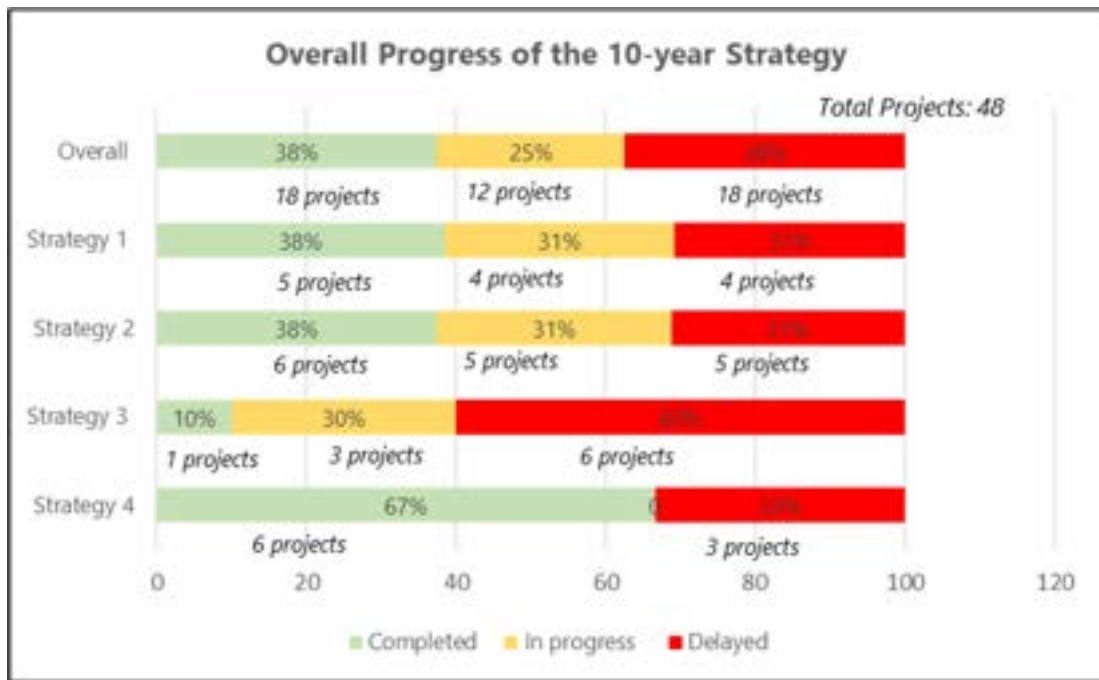
### **3.7.2 Progress of the SFC Plan**

Tessaban Nakhon Phitsanulok has shown an outstanding performance to drive the 10-year strategy for sustainable ageing society under the Tessaban's capacity. All projects were proposed in the Tessaban's LSDP (2018–2022), especially Strategy 4; Promotion of quality of life and Strategy 5 Enhancement of Participation and Strengthening Community and Society. This is like an initial step for the Tessaban to gain further support based on the SFC Plan's initial outputs.

As the Tessaban is the key actor to implement the 10-year strategy, the LSDP only reflects their action step by step. As a first step, the projects were proposed in the LSDP, which is a five-year plan. Then, selected projects were included in the action plan for the LSDP, which is a three-year plan. To get the actual budget in each fiscal year, the selected projects in the action plan were included in the public expenditure plan, which indicates the budget spending for each year.

The process of the SFCI, especially the planning approach, has been utilized in Tessaban Nakhon Phitsanulok. PT remains as the key actor for driving and monitoring the 10-year strategy. Its main role is to review the plan and update it based on the current situation. In the recent PT meeting in Tessaban Nakhon Phitsanulok in 2021, the PT agreed to add a new strategy, which is "Strategy 5 Development of Technology system for Elderly Health". The key reason for this is to make the plan clearer and to reflect the current situation. It is undeniable that modern technology and innovation have impacted human life. Thus, this strategy aims to catch up with the trend, and at the same time to increase the capacity of public services. The Tessaban moved some projects from the existing strategies: from Strategy 1 to Strategy 3, then to Strategy 5. The changes focus on the data system, information technology, and online system.

For project implementation, Tessaban Nakhon Phitsanulok has not gained support nor proposed the project to other organizations. Probably, this is because the scale of the project fits with the Tessaban's capacity. Also, the project mainly impacts the quality of life, which is a crucial mandate of the Tessaban. However, in the planning and preparation process, the Tessaban has collaborated with partners from the public, private, civil, and academic sectors to design the projects and its functions together.



Source: JICA Project Team

**Figure 3.7.1 Overall Progress of the 10-Year Strategy**

Figure 3.7.1 shows the overall progress of the 10-year strategy. The status of each project is divided into three categories, comprising: (i) implemented as planned; (ii) in process, referring to the project being moved to Strategy 5 (new strategy) or in the process of being proposed to the next fiscal year; and (iii) delayed, for any reason such as no main responsible organization or budget rejection.

Overall, the 10-year strategy consists of 48 projects in total, 18 of which are completed (38%), ongoing (12 or 25%), or delayed (18 or 38%). Of the strategies, Strategy 4 has the fastest progress with almost 70% of its projects under implementation, followed by Strategy 1 and Strategy 2 at 38% each. Strategy 3 shows the slowest progress with only 10% of its projects being implemented within the expected duration.

Based on the 10-year strategy, most projects should have started in 2018 and 2019 and completed by 2027. The outputs are expected to be completely disseminated throughout the Tessaaban by 2027. The details of each strategy are explained below.

- **Strategy 1: Health Care System Development**

This strategy consists of two programs with 13 projects in total. Program 1 Enhancement of Public Participation and Development of Health Management Network has nine (9) projects, while Program 2 Development of Technology and Innovation for Serving Aging Society by Promoting a Health Care through Technology System has four (4) projects. The number of projects implemented as planned is five (5), while those in process and delayed are four (4) each.

In the Program 1, there are 5 projects implemented as planned and 4 projects are delayed. Even though the projects are approved and implemented as a plan, the implementation of projects are suspended due to COVID-19 prevention measures. The main reason is that the projects are an activity related to improving the elderly's health. Therefore, it requires social

gatherings in elderly club or center. With the COVID-19, each activity has to be suspended.

The main reason for the delay in projects is the budget rejection even though the Tessaban already included the project in the LSDP. The Tessaban has no sufficient budget to implement these projects so that the other projects were prioritized for budget allocation. However, these projects will be improved in its preparation to fit the context of the city.

In Program 2, there are 4 projects. All projects had been moved to Strategy 5 Development of Technology system for Elderly Health as the projects are related to technology and data system. According to PT meeting, projects 2-1 to 2-4 will be integrated into the aider system project as a sub-activity to be implemented in the next LSDP (2023–2027).

The progress and constraints of Strategy 1: Health Care System Development are elaborated in Table 3.7.7.

Table 3.7.7 Progress of Strategy 1: Health Care System Development

No.	Name of Project	Status				Relevant Organization	Key Constraint				Remark	
		Plan	Prep	Imple	Detail		COVID-19	Budget	Reg.	Research		Personnel
<b>Program 1 Enhancement of public participation and development of health management network</b>												
1-1	Lively Elderly Persons with Health-Conscious		■	×	This is one activity integrated into LSDP 2018-2022 under the Health Promotion Project for Elderly and Underprivileged. This activity will be operated at the 4 community health centers of Tessaban Nakhon Phitsanulok.	N/A						Due to the activities are arranged in the elderly center, with the COVID-19 prevention measures, some activities are suspended.
1-2	Promotion of health and sanitation for elderly and disable persons		■	×	Same as above	N/A						Same as above
1-3	Development of health promotion and learning system		■	×	Same as above	N/A						Same as above
1-4	Provision of Thai Medical Service at home		●		Proposed into LSDP 2018-2022; strategy 4, but the budget has not been approved.	N/A						Insufficient municipal budget.
1-5	Fit and Firm for Fun for promoting health-behavior modification for citizens in Phitsanulok City		●		Same as above							Same as above
1-6	Pilot-community for bonding relationship and promoting health-conscious		■	×	This is one activity integrated into LSDP 2018-2022 under the Health Promotion Project for Elderly and Underprivileged. This activity will be operated at the 4 community health centers of Tessaban Nakhon Phitsanulok							Due to the activities are arranged in the elderly center, with the COVID-19 prevention measures, some activities are suspended.

No.	Name of Project	Status				Relevant Organization	Key Constraint				Remark	
		Plan	Prep	Imple	Detail		COVID-19	Budget	Reg.	Research		Personnel
1-7	Promoted Religious Place to be Community Health Promotion		●		Proposed into LSDP 2018-2022; strategy 4, but the budget has not been approved.							Insufficient municipal budget.
1-8	Promotion of proactive elderly health in community		●		Same as above							Same as above
1-9	Elderly Life Plan "How to live with happiness"		■	×	Integrated into LSDP 2018-2022 in Strategy 4. This will operate in Phraong Khao Community Health Center.							Due to the activities are arranged in the community health center, with the COVID-19 prevention measures, the activities are suspended.
<b>Program 2 Development of technology and innovation for serving aging society by promoting a health care through technology system</b>												
2-1	Health and Medical Alert System		<input type="checkbox"/>		From the review and update of the 10-year strategy, these projects are moved to strategy 5 Development of Technology system for Elderly health as a part of aider system project. (from project 2-1 to 2-4)							Restructure of the 10-year strategy. Waiting for new assignment of main responsible division.
2-2	Development of Integrated Data on Elderly Health		<input type="checkbox"/>		Same as above							Same as above
2-3	Remote Health Care		<input type="checkbox"/>		Same as above							Same as above
2-4	Preparation of Automatic Self-Exercise Program		<input type="checkbox"/>		Same as above							Same as above
		<b>Remark:</b>										<b>Remark:</b> Causes of delay are COVID-19, budget, regulation, required further research or information, and skills of personnel.
				On plan		● Keep implementing						
				In process		■ Done						

Project for Promoting Sustainability in Future Cities of Thailand (TFCP) (Stage 4-5)  
**Final Report, Vol. 2: Model City Projects**

No.	Name of Project	Status			Relevant Organization	Key Constraint						
		Plan	Prep	Imple		Detail	COVID-19	Budget	Reg.	Research	Personnel	Remark
			Delayed		<input type="checkbox"/> Under the process <input checked="" type="checkbox"/> Suspended							

Source: JICA Project Team

- **Strategy 2 Promotion of Smart Ageing Society**

This strategy consists of two programs with 16 projects in total. Program 1 Development of Religion, tradition, art-culture and recreation for community and public services has 7 projects, while Program 2 Development of Promotion of social welfare management for elderly, disabled and disadvantage persons has 9 projects. The number of projects implemented as planned is six (6), while those in process and delayed are five (5) each.

In Program 1, there are only 2 projects implemented as planned and 5 projects are delayed. Similar to Strategy 1, project implementation was suspended due to COVID-19 prevention measures. However, Project 1-5 Promotion and preserve the Thai and international song, Thai dance, and Thai culture was completed with a positive result. The clubs for Thai instruments were formed as a result of the training. It should be noted that this project did not spend any money but was carried out as part of mission of the division of social welfare. Meanwhile, the delayed projects were not proposed in the LSDP. The reason of this is that the Tessaban had to assign the division in charge of them first. So, those projects were merely postponed.

In Program 2, there are 4 projects implemented as planned. These projects were integrated into the LSDP (2018-2022). Meanwhile, another five projects (projects 2-4 to 2-8) are in a process of moving to Strategy 5 Development of Technology system for Elderly Health as the projects are related to online and data system. However, these projects are in the process of being assigned to the key division, so the Tessaban has not yet reflected the projects in the next LSDP.

The progress and constraints of Strategy 2 Promotion of Smart Ageing Society are elaborated in Table 3.7.8.



**Table 3.7.8 Progress of Strategy 2 Promotion of Smart Ageing Society**

No.	Name of Project	Status				Relevant Org	Key Constraint				Remark	
		Plan	Prep	Impl	Detail		COVID-19	Budget	Reg.	Research		Personnel
<b>Program 1 Development of Religion, tradition, art-culture and recreation for community and public services</b>												
1-1	Promoting the establishment of Sapa-Kaffee Chumchon		x		No progress						Org.	Waiting for the assignment of main responsible division.
1-2	Promotion of community art and cultural local philosopher museum		x		No progress							Waiting for assignment of main responsible division.
1-3	Elderly College for life-long learning		x		No progress							Waiting for assignment of main responsible division.
1-4	Promotion of local culture and lifestyle		x		No progress							Waiting for assignment of main responsible division.
1-5	Promotion and preserve the Thai and international song, Thai dance, and Thai culture		■	■	Integrated into LSDP 2018–2022. As a part of social welfare division, Thai angklung music and tom-tom (music instrument) clubs among elderly are created.							N/A
1-6	Study, research and Develop the folk wisdom		x		No progress							Waiting for assignment of main responsible division.
1-7	Promotion of social activities for elderly persons		■	x	Integrated into LSDP 2018–2022 in strategy 4. Implemented by social welfare division.							Due to the social distancing and social gathering restriction, the activities were suspended.
<b>Program 2 Development of Promotion of social welfare management for elderly, disable and disadvantage persons</b>												
2-1	Development of elderly capacity and those who incur social problems		■	x	Integrated into LSDP 2018–2022 in strategy 5.							Due to covid-19 prevention measure, the activities were suspended.
2-2	Enhancement of family institution		■	■	Integrated into LSDP 2018–2022 in strategy 5; FY 2021.							N/A

No.	Name of Project	Status				Relevant Org	Key Constraint				
		Plan	Prep	Impl e	Detail		COVID -19	Budget Reg.	Resear ch	Person nel	Remark
2-3	Development of Social welfare standard	■	■	x	Integrated into LSDP 2018-2022 in strategy 5 but has not implemented yet.						Budget has not been allocated.
2-4	Development of registration system for local philosophers and elderly intellectual property	□	□		From the review and update of the 10-year strategy, these projects are moved to strategy 5 Development of Technology system for Elderly health (from projects 2-4 to 2-8).						Restructure of the 10-year strategy. Waiting for new assignment of main responsible division.
2-5	Preparation of e-book library for searching role-model of elderly intellectual property	□	□		Same as above.						Same as above.
2-6	Development of website for public relation of activities and the role-model	□	□		Same as above.						Same as above.
2-7	Development of information transmission for elderly communication	□	□		Same as above.						Same as above.
2-8	Development of information technology database for quality of elderly life	□	□		Same as above.						Same as above.
2-9	Development of social welfare and social protection system for elderly persons (case by case)	■	■	●	Integrated into LSDP 2018-2022 in strategy 4; FY2021. Operated 'Homecare Services' by Public health and environment division, social welfare division, and Public work division of Tessaban Nakhon Phitsanulok.	Civil network; community, military, and citizens					N/A
		<b>Remark:</b>				<b>Remark:</b>					
		On plan	● Keep implementing			Causes of delay are COVID-19, budget, regulation, required further research or information, and skills of personnel.					
		In process	■ Done								

No.	Name of Project	Status			Relevant Org	Key Constraint						
		Plan	Prep	Impl e		Detail	COVID -19	Budget	Reg.	Resear ch	Person nel	Remark
			Delayed		□ Under the process xSuspended							

Source: JICA Project Team

- **Strategy 3: Silver Economy**

This strategy consists of 2 programs with 10 projects in total. Both Program 1 Development of Promotion of Commerce for Local Economic and Income Generation and Program 2 Development of Promotion of Commerce for Local Economic and decreased household expenditure have five (5) projects each. The number of projects implemented as planned is one (1), while those in process and delayed are 3 and 6, respectively.

Compared to the other strategies in the 10-year strategy, this strategy has the slowest progress. There was only 1 project implemented as planned, which is career training, and the implementation of this project is now suspended due to COVID-19 prevention measures. The other projects are mainly delayed, because the Tssaban has not started to propose or implement such projects. Also, these projects have to be assigned to a main responsible organization.

In Program 2, there are 3 projects which are in the process of being integrated into the next LSDP (2023–2027). Meanwhile, two projects (projects 2-4 to 2-5) are in the process of moving to Strategy 5 Development of Technology system for Elderly Health as the projects are related to the online program and will be proposed in the next LSDP.

The progress and constraints of Strategy 3: Silver Economy are elaborated in Table 3.7.9.

Table 3.7.9 Progress of Strategy 3: Silver Economy

No.	Name of Project	Status				Relevant Organization	Key Constraint				Remark	
		Plan	Prep	Imple	Detail		COVID-19	Budget Reg.	Research	Personnel		
<b>Program 1 Development of Promotion of Commerce for Local Economic and Income Generation</b>												
1-1	Promotion of career training and income generation		■	x	Integrated into LSDP 2018-2022 in strategy 4; FY2021. Operated by social welfare division to give a career training for elderly.							It has not started implementing yet.
1-2	Promotion of Online-Market by technology		x		No progress.							Waiting for assignment of main responsible division.
1-3	Promotion of Sales, Exhibition, Product and Marketing		x		No progress.							Waiting for assignment of main responsible division.
1-4	Promotion and Development of OTOP standard		x		No progress.							Waiting for assignment of main responsible division.
1-5	Development of brand for elderly products		x		No progress.							Waiting for assignment of main responsible division.
<b>Program 2 Development of Promotion of Commerce for Local Economic and decreased household expenditure</b>												
2-1	Increasing of decreased household expenditure - Workshop for building awareness for the management of decreased expenditure - Training for producing household appliance		x		No progress.							Waiting for assignment of main responsible division.
2-2	Promotion of community Saving		x		No progress.							Waiting for assignment of main responsible division.

No.	Name of Project	Status				Relevant Organization	Key Constraint						
		Plan	Prep	Imple	Detail		COVID-19	Budget Reg.	Research	Personnel	Remark		
2-3	Training for seeing through a trick of financial risk for elderly persons		<input type="checkbox"/>		Integrated into LSDP 2023-2027. Providing the financial knowledge for elderly operated under social welfare division.						N/A		
2-4	Development of registration system for taking care of elderly persons and those who need to generate an income		<input type="checkbox"/>		From the review and update of the 10-year strategy, these projects are moved to strategy 5 Development of Technology system for Elderly health. (from project 2-4 to 2-5)							Restructure of the 10-year strategy. Waiting to integrate in LSDP 2023-2027. Waiting for new assignment of main responsible division. Same as above.	
2-5	Program for family-financial management		<input type="checkbox"/>		Same as above.								
		<b>Remark:</b>											<b>Remark:</b> Causes of delay are COVID-19, budget, regulation, required further research or information, and skills of personnel.
			On plan		● Keep implementing								
			In process		■ Done								
			Delayed		□ Under the process								
					×Suspended								

Source: JICA Project Team

- **Strategy 4: Public Space and Facility Development with Universal Design**

This strategy consists of two (2) programs with nine (9) projects. Program 1 Promotion of Self-renovation of Housing for Elderly Persons has four (4) projects, while Program 2 Promotion of Public Space Renovation has five (5). Of the nine projects, six (6) were implemented as planned, while three (3) were delayed.

This strategy has an advanced progress. In Program 1, three (3) projects are now being implemented to promote housing for the elderly. Mainly the manual of universal design was prepared to support the process. The Tessaban became a consultant to provide advice on constructing houses for the elderly. The detailed design and house plan were provided along the process to help those who are interested to renovate their houses using universal designs. As a result, the elderly or PWDs have better quality of life from the private facility while this will prevent any risks from house accidents. In this program, there is only one delayed project, which is the example of senior housing. Even though the Tessaban has a house model, they cannot find the land to build the house on as a showcase of a universally designed house.

In Program 2, there are three (3) projects that were implemented as planned. These are related to the enhancement of the public environment and public space. The projects include the renovation of places of worship such as temples, renovation of the public park, and improving footpaths. To collaborate with temples, the Tessaban provided advice to improve their own properties suitable for elderly persons. The Chalerm Phra Kait Park's walkways were renovated by adding slope and Braille blocks to guide the elderly and the blind. The footpath orderliness remained difficult even though the project has already approved. This is because it is related to the citizens' life. By managing the street vendor, their income may be reduced while Tessaban should prepare the other places for them.

The delayed project, i.e., construction of footpath and road for all, was suspended as it requires a feasibility study. Thus, the budget for it was rejected. However, the Tessaban integrated this project into the master plan for infrastructure development to support its implementation. Another delayed project (smart crossroad for elderly persons) in Program 2 was also rejected by the Tessaban because it was beyond their capacity and required further research. However, this project is expected to be developed by other organizations to complete the smart city approach.

The progress and constraints of Strategy 4: Public Space and Facility Development with Universal Design are elaborated in Table 3.7.10.



**Table 3.7.10 Progress of Strategy 4: Public Space and Facility Development with Universal Design**

No.	Name of Project	Status				Relevant Organization	Key Constraint				Remark	
		Plan	Prep	Imple	Detail		COVID-19	Budget	Reg.	Research		Personnel
<b>Program 1 Promotion of self-renovation of housing for elderly persons</b>												
1-1	Promotion of renovation for suitable elderly house		■	●	Integrated with LSDP 2018–2022. Operated by social welfare division and public work division to develop the suitable housing for elderly and disable.	N/A						N/A
1-2	Example Elderly House Model for supporting the elderly's life		■		Already has the elderly housing model.							No land for constructing the example house
1-3	Elderly-Housing Consultant Center		■	●	Providing advice for elderly and those who are interested to construct elderly housing. Operated without budget by public works division.							N/A
1-4	Development of housing for supporting elderly and disable persons in daily life		■	●	Integrated into LSDP 2018–2022; FY 2021.							N/A
<b>Program 2 Promotion of Public Space Renovation</b>												
2-1	Construction and renovation of footpath and road for all		■		Request the budget in LSDP 2018–2022; FY2018 but rejected.							An activity under the feasibility study on infrastructure development.
2-2	Promotion of renovated environment in religious places for supporting elderly persons		■	●	Operated without budget, providing advice for religious places where are interested in the improvement for elderly environment.							N/A
2-3	Renovation of official building, place, and public park to have suitable environment for elderly persons		■	■	Completed in 2018 using the Tessaban's budget under the project on construction of walkway for PWDs in Chalerm Phra Kait Park.							N/A

**Final Report, Vol. 2: Model City Projects**

No.	Name of Project	Status				Relevant Organization	Key Constraint				Remark	
		Plan	Prep	Imple	Detail		COVID-19	Budget	Reg.	Research		Personnel
2-4	Footpath Orderliness		■	×	Integrated into LSDP 2018-2022; FY 2021. Operated by clerk office but has not started implementing yet.							The main division has not started implementing yet.
2-5	Smart Cross Road for Elderly Persons				Rejected to be added in the 10-year strategy.							The project is complicated as it requires further research. Not within the Tessaban's mandate.
		<b>Remark:</b>				<b>Remark:</b>						
		On plan			● Keep implementing	Causes of delay are COVID-19, budget, regulation, required further research or information, and skills of personnel.						
		In process			■ Done							
		Delayed			□ Under the process							
					× Suspended							

Source: JICA Project Team

Tessaban Nakhon Phitsanulok has recently proposed four projects under Strategy 4 for FY2021, as shown in the table below.

**Table 3.7.11 Proposed Projects for Strategy 4 in FY2021**

	<b>Project</b>	<b>Description</b>	<b>Responsible Org.</b>
1	Long-term health care for elderly persons under the improvement of Phra Ong Khao Community Health Center	<ul style="list-style-type: none"> <li>- Taking care of in-home elderly and on-bed elderly or LTC group.</li> <li>- Developing the head of volunteers and relatives</li> <li>- Integrating the spatial network covering 4 dimensions for social-bound elderly</li> <li>- Provide activities suiting for context and demands of each target in each area</li> <li>- Brainstorming to attract people to join activities</li> <li>- Set clear goals</li> <li>- Provide mega projects for elderly groups covering throughout tessaban's areas</li> <li>- Take action to evaluate the results according to the indicators.</li> <li>- - Taking lesson learn and finding solutions</li> </ul>	Division of public health and environment
2	Project to design and improve infrastructure using universal designs. (Operation and preparation of guideline)	<p><b>1) Elderly School Guideline</b></p> <ul style="list-style-type: none"> <li>- Arrange activities for social bound elderly every week</li> <li>- Visiting and monitoring LTC groups</li> <li>- Arrange exercise activities at 4 aerobic yards</li> <li>- Training local nurses.</li> </ul> <p><b>2) Elderly House Guideline</b></p> <ul style="list-style-type: none"> <li>- Planning and design for improving public space in Tessaban Nakhon Phitsanulok according to universal design concept.</li> <li>- PR the elderly houses for anyone who are interested in.</li> </ul>	Division of public works
3	Construction of facilities for seniors	The senior complex is functioned as comprehensive elderly care center. The center will have several facilities for elderly to play and learn. Currently, the project is under detailed design in consultation with the target group and partners to respond to all demands of users.	Division of social welfare
4	Smart city project: Aider system	This project is related to database system, online program, and IT services. Some projects in the 10-year strategy has been integrated into this project (from program 2 in strategy 1). This project focuses on the data collection and the use of data base system to provide public services and assistance especially for elderly, LTC group, and disable person.	Division of social welfare

Source: JICA Project Team

The key challenges of Tessaban Nakhon Phitsanulok is the dissemination of project benefits to other areas, particularly, during the COVID-19 period. The people are also not fully interested in the projects; hence, the Tessaban needs to promote them more intensively. To invite more people, the Tessaban requires to provide more information to its citizens. As the main actors in elderly healthcare services are village health volunteers (VHV), their role has shifted to COVID-19 prevention. In addition, their community visits have been reduced.

On the progress of the 10-year strategy, Tessaban Nakhon Phitsanulok has prioritized the promotion of quality elderly life through capacity building and health care system as well as public participation. This is expected to increase the capacity of people to develop other aspects. Small projects like training and advisory activity have built awareness among the elderly as a first step. Once they have a strong understanding and awareness about their

quality of life, other aspects, such as economy and full construction (like elderly house) will be developed accordingly.

Along with these actions, the Tessaban is expected that the elderly will have good physical, mental, and social, health. Also, quality public health services, including rehabilitation, will be accessible to all. Data collection will be used to identify issues and to provide suitable services for its citizens.

For the next step, the Tessaban has planned to integrate the project that has not been implemented into the next LSDP. Also, an issue-based working group will be established to focus on each issue. Capacity building and collaboration with other organizations will be enhanced to complete the projects that are, according to the mayor, beyond their capacity. Importantly, the plan will be continually evaluated and monitored to gain the lessons and to figure out the best solutions within the current context.

### 3.7.3 Status and Future Direction of the Pilot Project

This section focuses on the status of the pilot project supported by JICA. This also aims to evaluate how the Tessaban utilizes the output of the pilot project and how they operate and maintain the quality of the project. Some challenges and plans are also identified.

To materialize the 10-year Strategy for Sustainable Ageing Society, Phra-Ong-Khao Community was selected as the target area for the JICA pilot project. The link between the 10-year strategy and the JICA pilot project is presented in Figure 3.7.2.



Source: JICA Project Team

**Figure 3.7.2 Link between SFC Plan and JICA Pilot Project**

The JICA pilot project comprises three (3) components, i.e., peopleware, hardware, and software development. It introduced new systems and new development perspective to support the Tessaban in pursuing a sustainable ageing society.

**Table 3.7.12 Outputs of the JICA Pilot Project by Component**

	<b>Component</b>	<b>Description</b>	<b>Output</b>
1	<b>Peopleware Development:</b> Capacity Development for Municipal Staff and the Community	Capacity development focuses on the development of human resources. It was emphasized not only on the officials, but also on the community because the officials are the people who make the plans and provides the services for the citizens, and the community is comprised of the people who live in the community and use those services. Referred to as "Change Agents", (developed actors and stakeholders who promote and enable change) they included current officers from officials of Phitsanulok Municipality, community leaders, urban elderly groups and associations, and civil society in Phitsanulok city. Capacity development can be divided into two main projects.	<p>- <b>Target 1</b> (Municipal Staff): Capacity building through the process of developing the 10-year strategy and includes team building workshops, design activities, and project assessment.</p> <p>- <b>Target 2</b> (Community Leaders &amp; Elderly Groups in the Pilot Community): (i) Training of leaders of elderly groups and volunteers for elderly care, (ii) workshops and other activities for elderly people in the community such as creating life plans, promoting health, transferring Thai traditions to young people, and learning computer skills.</p> <p>To reflect the needs and demands of elderly, <b>Phra Ong Khao community health center</b> have been improved and used as a center to conduct those activities.</p>
2	<b>Hardware Development:</b> Introduction of Universal Design to Facilities	To prepare the software or database, it is important to reach an understanding between the community and officials. Integration of data should also be considered to avoid duplicated information. Therefore, the existing data from the municipality and relevant organizations, particularly Phuttachinnarat Hospital and provincial M-Society, should be reviewed before preparing the scope of data collection.	<p>- <b>Model for Elderly Housing:</b> A model elderly house using universal design principles was developed as an example for the elderly who will renovate their houses.</p> <p>- <b>Manual on Elderly Housing:</b> This manual aims to deepen the understanding of developing and operating facilities for elderly people.</p>
3	<b>Software Development:</b> Integrated Health Care Database System	In order to meet with elderly demands, the universal design should be introduced in the infrastructure and facilities in Phitsanulok City. The Universal Design and city's context were reviewed in order to identify the critical issues and find an efficient solution. In the discussion between the municipality and local consultant, the model of elderly house was developed to be an example for elderly persons and to inspire them for the renovation of their places. In addition, the municipality collaborated with the provincial army to volunteer to renovate the houses of the elderly in each community	<p>- <b>A database</b> on elderly health care was developed to help provide the elderly with a better quality of life. The database provides information on physical and mental health, social and intellectual ability of the elderly in the community, as well as their environmental and economic conditions.</p> <p>- <b>A trial collection of data</b> was done in the pilot community, and the collected data was stored in the database.</p> <p>- In this database, users can search for data and add/delete information by <b>application</b>.</p>

Source: JICA Project Team

Tessaban Nakhon Phitsanulok has disseminated the project outputs to other areas and has been updated or adapted them into the current context. In other words, the pilot project jump-started the elderly care project in Tessaban Nakhon Phitsanulok. In addition, the pilot project is continually monitored to respond to the needs of citizens and users in all aspects. The equipment from JICA were installed in the Phra Ong Khao Community Health Center

and they have been maintained in good condition. The Tessaban has checked them quarterly. The outputs of the pilot project are summarized below.

**1) Phra Ong Khao Community Health Center**

The Phra Ong Khao Community Center has been operated by the division of public health and environment under Tessaban Nakhon Phitsanulok. There are two (2) key missions under this project, which are the (i) promotion and enhancement of public health and (ii) provision of public health services. The future direction of these two projects is summarized in Table 3.7.13.

**Table 3.7.13 Future Direction of Phra Ong Khao Community Health Center**

Mission	Objective	Future Direction
Promotion and Enhancement of Public Health	to promote and enhance physical and mental health as well as society and wisdom of elderly people	<ol style="list-style-type: none"> <li>1. Take care of elderly persons who are on-bed, in-home, and LTC.</li> <li>2. Developing the leader of volunteer and relatives</li> <li>3. Integrating the health networks in the area covering 4 dimensions.</li> <li>4. providing good activities fitting with the context and target of the area.</li> <li>5. Brainstorm to find strategies for attracting the public to participate in the activities.</li> <li>6. Set clear goals</li> <li>7. There are mega-projects for the elderly group covering the entire municipality in a concrete way.</li> <li>8. Do the assessment according to the indicators</li> <li>9. Take the lesson and find solution.</li> </ol>
Provision of Public Health Services	Providing public health service and rehabilitating health of elderly and disable persons.	<ol style="list-style-type: none"> <li>1. Adding the project implementations into LSDP (FY2018-2022) for the projects that exceed the capacity of LAOs. This is to carry out the construction and improvement of Phra Ong Khao community health center.</li> <li>2. Develop the disciplinary team under 4 dimensions (physician, nurse for health rehabilitation, public work division, social welfare division, and education division) to analyze the situation and health status of elderly and disable people. Also, the programs for rehabilitating elderly health should be formulated for the leader of elderly group and nurse.</li> <li>3. Developing skills and process of elderly health rehabilitation for elderly leaders and staff.</li> <li>4. Develop a rehabilitation model for the elderly or the disabled leaders and staff.</li> <li>5. Study the rules, regulations and ordinances for the operation, budget disbursement and the service fee charge according to the rights of the participants and taking the lesson-learn.</li> </ol>

Source: JICA Project Team

The key challenge to implement this project in the future is the dissemination of outputs to other communities. It requires a working experience in taking care of the elderly in each area. Meanwhile, the role of village health volunteers (VHVs) has changed, so the frequency of community visits is reduced. This makes Tessaban lacking in professional staff who have knowledge of elderly health rehabilitation and health care services.

Another challenge is the participants of each activity. The project and services should be promoted more in the community to get more participants. At the same time, the collaboration with other sectors and the healthcare network should be enhanced and expanded. These will contribute more comprehensive services, and the citizens will be more involved.

To provide an efficient public health service, it requires more understanding of the regulations, rules, and other ordinances. Particularly, service fees should be affordable for all people.

The public health service is the key component, especially in COVID-19 situation. The quality of services has become crucial to facilitate the physical and mental health of elderly persons. Particularly, social connectivity especially for the elderly, remote communication, activity, and service are necessary to be provided in the current situation.



Under the JICA pilot project, 10 equipment/devices were provided to the Phra Ong Khao Community Health Center to provide better health services for the elderly. These are personal computers (desktop and laptop), a wheelchair, an electronic fowler bed, a digital weighing scale, portable suction machines (2), blood pressure monitors (3), walkers (10), bedsores gel cushion (12), and air mattresses (4). All equipment is in the good quality and quarterly checked up and maintained.

## 2) Introduction of Universal Design in Facilities

The universal design concept was introduced to Tessaban Nakhon Phitsanulok under the JICA pilot project. As a result, the Tessaban has applied the experiences in several projects and in their existing facilities for elderly persons. By using the concept of universal design, the Tessaban intends to prepare a manual and guidelines for building schools for the elderly and to promote these to locals when constructing or renovating their houses using elderly house models. To efficiently operate and manage this, the Tessaban has shared the tasks to its divisions and has proposed the future direction to respond to all needs of the users. The objective, future direction, and main organization of each project are summarized in Table 3.7.14

**Table 3.7.14 Future Direction of Phra Ong Khao Community Health Center**

Project	Key Org.	Objective	Future Direction
Manual of Elderly School	Division of public health and environment	<ol style="list-style-type: none"> <li>1. Improving quality of elderly life in the pilot zone (Phra Ong Khao) by using participation together with passive and proactive strategies. This development covers all aspects, including health, social, economic, and basic physical aspects.</li> <li>2. Expanding Health promotion in 4 health centers.</li> <li>3. Promoting and rehabilitating public health especially abilities of intellectually impaired groups.</li> <li>4. Build health leaders for the elderly in the community</li> </ol>	<ol style="list-style-type: none"> <li>1. Organize activities for the elderly in social groups every week</li> <li>2. Visit the elderly who are stuck in the house, bedridden, and the handicapped according to the health promotion project for the elderly and the underprivileged group.</li> <li>3. Organizing exercise activities at 4 aerobic yards, yoga, Pétanque, and dancing activities for elderly persons.</li> <li>4. Train local nurses</li> <li>5. Take the lesson and find solution.</li> </ol>
Manual on Universal Design	Division of public works	<ol style="list-style-type: none"> <li>1. Study on the feasibility of preparing a master plan and basic design for infrastructure development in Tessaban Nakhon Phitsanulok</li> </ol>	<ol style="list-style-type: none"> <li>1. Develop the system of spatial space and environment under universal design concept in all areas.</li> </ol>
Elderly house model	Division of public works	<ol style="list-style-type: none"> <li>1. Provide advice and suggestion on the construction of elderly houses and those who are interested.</li> <li>2. Providing elderly house plan for elderly people and those who are interested.</li> </ol>	<ol style="list-style-type: none"> <li>PR the elderly house plan for elderly and those who are interested.</li> </ol>

Source: JICA Project Team

The key challenge is the dissemination of the outputs to other communities, especially to provide knowledge on how universal design in the built environment is crucial to behavioral changes. Universal design is a new concept for most of citizens. Therefore, the advisory services on universally designed house are crucial to raise the awareness of locals. PR activities are a way to promote the concept and to attract interest. Together with PR, some

incentives should be given to get more people to renovate their houses and other facilities. In addition, COVID-19 also impacted the pilot project. Some activities had to be suspended and the renovation or any construction were not recommended to start. However, to cope with this challenge, the online platform should be utilized to provide an information about universal design and to raise awareness of the citizens.

### **3) Integrated Health Care Database**

The integrated health care database was developed only in Phra Ong Khao community under the JICA pilot project. The Tessaban has efficiently utilized and expanded the system to cover all aspects. Mainly, the database is used as a tool to provide public health services and to assist the elderly in emergency situations. Thus, the Tessaban intended to complete the database on the elderly to provide and manage social welfare and services, especially for the target groups, such as bedridden patients and LTC groups. Besides this, the database is used to examine the needs of citizens and to forecast them toward a plan and strategy of Tessaban Nakhon Phitsanulok.

To increase the efficiency of the integrated database, the Tessaban is required to work with several organizations like hospitals. The data will be shared among the partners to provide efficient services to its citizens, to avoid duplication and manage resources more efficiently, and to provide either services or assistances on time and properly. To reach this point, the following activities are prepared:

- Proactive healthcare to the elderly who are in-house and bedridden by using the database to find them. Then, visiting and providing health services for them. After that, recording the additional data into the database. Also, coordinating with a team to design a comprehensive welfare plan throughout the Tessaban. Besides these, promoting the activities for health promotion for elderly persons in accordance with the situation and context gained from the database.
- Housing and Environment dimension, applying data to find the elderly and disadvantaged persons to promote suitable house designs for the elderly, PWDs, and the poor. Also, formulating a plan to raise awareness on elderly housing among the elderly who live in unsuitable houses but can afford to have them redesigned.

Toward the future database system, the Tessaban has prepared to expand the coverage of the database to the surrounding LAOs. This aims to create an integrated database system at the provincial level. By doing this, Tessaban Nakhon Phitsanulok will be the lead or center of healthcare services. With efficient and comprehensive services, the Tessaban can be a model in promoting a sustainable ageing society in the region.

Furthermore, Tessaban Nakhon Phitsanulok has set the target to completely collect data on the elderly for promoting quality of life in all aspects and all people. Such data will be integrated and transferred into an application software. The app will be an alternative channel for the locals to communicate about and access public health information and services. This will also be matched with a GPS system to support healthcare services, especially in assisting with urgent cases or vulnerable groups in a timely manner. In another case, the GPS can support the city in disasters or any emergency.

However, the key challenge to this project is the lack of professional staff to integrate inputs and disseminate outputs to other areas. As the system needs to be updated periodically, it requires a regular staff to operate the whole system. Another key challenge is the suspension of data collection due to COVID-19. At the same time, the dissemination of outputs has become difficult.

During COVID-19, however, the Tessaban utilized the database to provide services and support to the communities, especially to the vulnerable groups. In other words, the database system helped the Tessaban to identify the vulnerable groups whom it had to prioritize, thereby saving them a lot of time.

#### **4) Outcomes of the Pilot Project**

The Tessaban has applied the planning process and utilized the outputs of the pilot project toward a future direction. Also, the capacity of the Tessaban has been strengthened, especially in public participatory processes. The key outcomes of the pilot project are listed below.

- Based on the outcomes gained from the implementation of 10-year strategy, Tessaban Nakhon Phitsanulok sets long-term vision to address the progressive aging of the society which consists of three aspects, i.e., hardware development (age-friendly facilities), software development (accumulation of accurate data), and peopleware development (human resources for supporting a sustainable aging society). Such comprehensive measures are necessary to develop a sustainable aging society.
- To address the issue of an aging society sustainably, capacity development for people who support the elderly was placed at the core of the initial action to realize the 10-year strategy.

#### **3.7.4 Lessons Learned**

An ageing society has become a significant global challenge. The growing number of elderly persons has impacted the changes in personal needs and increased demand for public health services. In many areas, the elderly are vulnerable to exclusion and marginalization. By realizing a society for all ages, Tessaban Nakhon Phitsanulok has focused on a sustainable ageing society to ensure that everyone can live longer and healthier with security and dignity.

Tessaban Nakhon Phitsanulok established a 10-year strategy for a sustainable ageing society as the main driver toward a sustainable city. The 10-year strategy not only pledged to ensure quality of life and public health services but also to create an ageing-friendly environment and balance the intergenerational relationships using the participatory approach. To materialize the strategy, the LSDP is an effective tool to implement the project. To accelerate the implementation of the pilot project, the Tessaban spent their own budget to complete the plan. As an initial step, the Tessaban focused on the activities of elderly persons. This is mainly to raise the awareness of their citizens. From the elderly's perception, the activities and awareness can be transferred to their family, friends, and relatives.

In the capacity building under the pilot project, the remarkable outcome was the

participation of the elderly in society. The project enhanced the opportunities for them to be reintegrated into society. By doing so, they got involved in associations and clubs, worked as volunteers, while staying economically active. From the career training, the elderly have gained more income while practicing their own skills to keep them active. Active seniors relatively have higher quality of life and are healthier. Hence, this will not only enhance their quality of life but also that of society. In addition, the activities with all ages have been promoted by Tessaban Nakhon Phitsanulok. Various age groups worked and discussed together to design the projects and plans. This participation has provided opportunities among various groups of citizens to share and exchange their own perspectives. As a result, too, the Tessaban is now able to develop plans by balancing all needs and demands. This also supports social inclusion of all.

The universal design concept has contributed to an age-friendly environment. The promotion of elderly housing is crucial to make a supportive environment. As the capacity of elderly persons decline, they are often required for the transition. The Tessaban has provided advice on elderly housing which is useful for the citizens to adapt their homes to become more functional, safe, independent, and comfortable. The Tessaban has also promoted universal designs in public spaces. The city's public space is a crucial element of a city as it has a major impact on the quality of life and mobility of the elderly. This also affects their ability to enjoy public spaces and to enhance their socialization.

The integrated database showed the advance progress of Tessaban Nakhon Phitsanulok. Reflecting the digital age, technological advances and the IT system help the city become more efficient in their operations and provision of services. With the database, the Tessaban can now identify issues based on qualitative and quantitative data, as well as spatial data. At the same time, the Tessaban can forecast the demand or risks of citizens to provide assistance in a proper and timely manner. The data is also used in policy making and planning.

With those remarkable outcomes, the key success of Tessaban Nakhon Phitsanulok is its improved capacity. Firstly, the mayor has strongly prioritized work on the ageing society, so it ensures that the 10-year strategy will be implemented continually and smoothly. Secondly, the capacity of the Tessaban's staff has increased through the capacity building project. Through the SFCI, the planning approaches, such as comprehensive, regional, and participatory ones, have been reflected in the Tessaban's work. The Tessaban has learned to prepare plans systematically in collaboration with stakeholders and other partners.

Besides this, the organizational structures in SFCI have been utilized by Tessaban Nakhon Phitsanulok. Particularly, at the local level, PT meetings have been periodically conducted to examine and assess the outcomes of the 10-year strategy. With the vision of the mayor, the 10-year strategy has been reviewed and updated. The strategy has become more complete and clearer by adding a new strategy, i.e., Strategy 5: Development of Technology System for Elderly Health.

Despite having positive results, Tessaban Nakhon Phitsanulok has faced several challenges to develop a sustainable ageing society. Mainly, there is a lack of professional workers to provide healthcare services. This is also because the roles of village health volunteers have

changed. This made for less interaction with the community. Also, the public relations work for the project needs to focus on attracting the citizens to join activities and projects. Obviously, COVID-19 has impacted all these efforts. Prevention measures have obstructed project dissemination and collaboration with the citizens. Regulations and rules on service provision need to be formulated, particularly for service fees.

To sum up, Tessaban Nakhon Phitsanulok has reflected all aspects of urban life, including the physical environment, social environment, in its services to ageing people. In the physical environment, housing and public spaces have been developed and promoted. At the same time, the Tessaban has also emphasized the elderly's social participation and civic engagement, and health services have been provided in different ways while communication and information have been promoted.

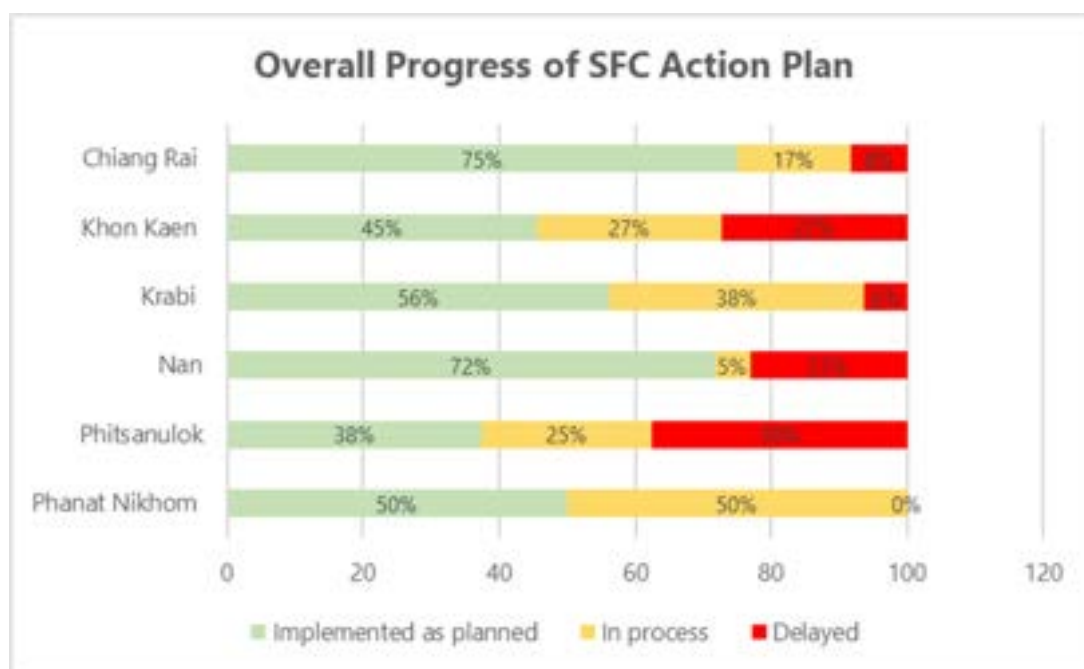
From these comprehensive development toward a sustainable ageing society, Tessaban Nakhon Phitsanulok has become a leader in ageing society development. In the future, it plans to expand their projects on sustainable ageing to a provincial scale. This emphasizes the strong experiences of the Tessaban. With a forward-thinking mindset, healthcare services, and experience of the SFCI of the Tessaban, they can share their experiences with other local cities. By exchanging experiences with local cities, it can also create a partnership network. Tessaban Nakhon Phitsanulok is willing to accept study tours from all organizations to disseminate their experiences and outputs.

### 3.8 Conclusion and Recommendations

The monitoring activities have been done mainly to assess the progress of the respective SFC Plans of the model cities in Phase 1. The monitoring presented several positive aspects, potential plans, budget channels, and integration of local development policies at the provincial or national level. Besides these and along the SFCI process, the ambition of the six tessabans, collaboration with various organizations, utilization of the SFC process, and the importance of technical support from diverse agencies were identified as positive results. In addition, the pilot projects' key successes and challenges have been reflected in the reorientation of the projects.

This section includes the conclusion of the SFC Plans to identify potential budget sources and implementation bodies, as well as the challenges caused by project delay. The status of the pilot projects are summarized by highlighting the utilization of the JICA pilot projects and future directions. Then, lessons learned are described and recommendations for future actions are proposed at the end of this section.

#### 3.8.1 Progress of the SFC Plans of First Phase Model Cities



Source: JICA Project Team

**Figure 3.8.1 Progress of the SFC Action Plans of First Phase Model Cities**

Looking at the overall progress of the SFC action plans, all cities have shown outstanding performance. Most of the projects in the SFC plans have been completed through the LSDPs with budget from the tessaban. All six model cities initially proposed the projects in their own plan to get budget support. This is the main budget source to avoid project delays. Some completed projects were conducted without budget, while some spent a small amount of budget. This is a good step for the tessaban to reach further development. Also, it shows their high capacity and ambition to complete the projects under SFC Plan. Interestingly, the six tessabans started project implementation as a showcase to attract the

attention of other relevant agencies. With the projects' outputs and increased awareness of the citizens about them, the process to request budget support from other organizations became easier.

Besides this, the tessabans utilized the potential of their urban areas. Some projects were integrated into the provincial development plans or provincial cluster development plans. At the provincial level, the outputs of these projects benefited not just the tessaban concerned but also the people living outside the tessaban. Thinking out of tessaban boundaries made it easier for such projects to get approved.

At the regional level, some cities, such as Phanat Nikhom and Khon Kaen, have utilized their potential for regional development. Despite Phanat Nikhom being a small city, the Tessaban has leveraged its potential for being a residential area to propose its project to the EEC. Meanwhile, Khon Kaen, being a regional center in northeastern Thailand, has initiated a holistic transportation development in their city and has collaborated with several organizations and neighboring tessaban to achieve the project's purposes.

However, the six tessabans faced several challenges to propose their projects. Currently, the COVID-19 pandemic has dealt them a big blow. The local governments had to allocate some budget to ease the situation the six tessaban found themselves in with their respective pilot projects. Covid-19 prevention measures limited their activities. Particularly, the social distancing measures restricted the mobility of people so that the latter could not join project activities, while some construction and budget approval had to be suspended.

Budget allocation has always been a key limitation for the tessabans. In this context, some projects have not been prioritized leading to budget rejection. However, the tessabans have not ignored such projects. The projects are re-proposed every year. Also, some tessabans proposed the projects to other budget sources or collaborated with the private sector to initiate the projects.

The lack of regulations has limited some activities or projects of the tessabans to promote further development. Another essential issue is that some projects are new for the city, requiring a deeper understanding and knowledge before they could be implemented.

This could reflect into the capacity of personnel and the need for further research. The capacity of tessabans needs enhancement. The number and quality of professional staff in every field and at various levels must be increased and developed. Also, further research is required to complete the projects efficiently. The tessabans tended to collaborate with local universities and the private sector for technical support. This is to boost their own skills and create innovations responding to the demands of their people.



### 3.8.2 Status of Pilot Projects

The JICA pilot projects functioned as tangible outputs which the six model tressabans used to drive further project implementation. With this purpose, Tressaban has magnified the outputs of JICA pilot projects in various positive ways.

In the six model cities, the JICA pilot projects could be grouped into three types namely: (i) construction-based projects, (ii) activity-based projects, and (iii) data-based projects.

Construction-based projects were implemented in Tressaban Mueang Krabi, Tressaban Mueang Nan, and Tressaban Mueang Phanat Nikhom. These cities showed remarkable outcomes: One tressaban completed the construction and are at the operations and management phase; another has assigned regular staff to maintain the quality of the constructed project; and still another tressaban completed the construction and added improvements. To be specific, Krabi has used the detailed design prepared under the JICA pilot project to complete the improvement of the Andaman Cultural Center. Meanwhile, Nan has assigned regular staff at Long-Nan center to give information to tourists. Phanat Nikhom has utilized the detailed design of subcommunity 9 to improve the other parks in the city.

Meanwhile, the activity-based projects spilled over to other areas. While pilot project activities were conducted at the pilot zones, the tressabans applied the process in and disseminated the pilot project outputs to other communities. This could be seen in Tressaban Nakhon Chiang Rai, Tressaban Mueang Nan, and Tressaban Nakhon Phitsanulok. To illustrate, Chiang Rai expanded the U3A course to other communities and completed the construction of the Doi Saken learning center as formulated in the SFC plan. Nan disseminated the knowledge on proper waste management to other communities. Phitsanulok expanded public health services and elderly activities to cover the entire tressaban. The dissemination to other areas drove the tressabans to complete all projects to help achieve a sustainable city.

The data-based projects were conducted in Tressaban Nakhon Khon Kaen and Tressaban Nakhon Phitsanulok, which used data to support their decision making, especially in the formulation of strategies and plans. Both cities also expanded the data collection to cover all aspects of development. In addition, they also planned to integrate data at the provincial and regional levels to support public use.

To complete the comprehensive database, collaboration with other agencies is essential. The cities integrated data with several relevant agencies to provide better services for their citizens. For instance, in Khon Kaen, the database focused on transport; the city collected the data together with songthaew operators and Khon Kaen university. The data was not only useful for the tressabans to plan a new transport mode; it could also recognize new business development areas. For Phitsanulok, a public health database was developed. The tressabans integrated the data from the provincial hospital to assist vulnerable groups. Also, the data was used to forecast the risk of emergency cases and to prepare the healthcare plan.

With all these outputs and their dissemination, the JICA pilot projects have initiated the

further development of the six tessabans. Combined with the SFCI process, their capacity was enhanced. At the same time, their citizens have recognized the importance of the pilot projects through their participation in them. This has led to a sense of project ownership and more collaboration within the Tessaban.

In terms of quality of construction, the tessabans maintained all construction and equipment in good condition. The cities have assigned the right division to operate and serve those who use such facilities. Some cities, such as Khon Kaen, also utilized software applications to get feedback from users. To maintain cleanliness, some cities outsourced the work, while some have the community cleaning the area. Quality check has been done monthly and quarterly. Any damages are expected to be repaired or replaced by the tessabans.

### **3.8.3 Lessons Learned**

#### **Japan Experiences as Inspiration**

The SFCI experiences generated several positive outcomes for the six model cities. Remarkably, the tessabans have inspired several urban developments from the Japan experiences. In different aspects, they followed the development direction from Japanese cities. For instance, Toyama City has inspired Khon Kaen, while Share-Kanazawa has inspired Chiang Rai. The tessabans have applied those experiences in their city and required further collaboration with those in Japan.

Besides this, the advice from SFCI has triggered new perceptions on urban development. Issue identification for setting development direction for cities has been clearer. The SFCI Guideline was also introduced to set the process of planning. The collaboration has also been strengthened, while the capacity of Tessaban was enhanced. The obvious example is the concern over the ageing society, a relatively new issue for Thailand and local cities. To tackle this issue, all generations are needed to be involved in the plan. Most model cities have utilized the SFCI to learn and prepare for an ageing society. This mindset will help achieve future urban sustainability and also shows the importance of technical support and advice from different organizations.

#### **Wider Perception of Development through Holistic Planning**

The tessabans usually limit their initiatives within their respective boundaries. However, through the SFCI, the holistic planning approach has encouraged the tessabans to think beyond their jurisdictions. Considering the daytime population and neighboring areas, they can increase the coverage of their public service and get support from other organizations like the provincial government offices. In addition, the tessabans can consider both benefits and drawbacks in each project comprehensively. This has contributed to wide-ranging benefits for the city, and at the same time it has raised the planning skills of the tessabans.

#### **Participatory Approach as Integrated Society**

Along with the SFCI approach, the six tessabans gained useful technical support. Throughout the process, the participatory approach has provided and tied the relationship between the tessabans, stakeholders, and relevant organizations. In addition, the tessabans

have created a closer relationship with the local universities and have built their own capacity by working with different organizations. They have gained new perspective regarding their development and have utilized their own resources more wisely and efficiently.

Besides this, through the pilot project, communities have become more involved in the urban development of their tressaban. This brings the sense of belonging. Combined with good outcomes, the communities have become willing caretakers of the pilot projects. At the same time, their awareness has increased. The people have recognized their own right and their part in decision making. This leads to an inclusive city.

#### **Involvement of the Private Sector**

This has also been highlighted throughout the process. The private sector has provided support and collaborated with the tressabans to achieve the latter's vision. Even though there was less collaboration in some cities, the tressabans have recognized the potential of the private sector to develop the future city.

#### **Stronger Partnership with Various Actors**

Besides networking with local universities, the tressabans have strengthened its relationship with the public sector at the provincial, regional, and national level. Throughout the SFCI process, the model cities have more opportunities to present their development plans, projects, and ideas. Particularly, at the provincial and national levels, the tressabans have gained more advice to improve their projects. Meanwhile, some cities also received budget support from relevant organizations.

In addition, the tressabans have networked among themselves to exchange their own experiences and get other ideas to apply in their own cities while the challenges and limitations have been shared with the national government. The network of local cities was strengthened by the Plenary Workshop in the course of the project. The cities have even started to conduct study tours for their respective personnel.

#### **Determination as Tressaban's Key to Success**

The determination of the tressabans to implement development projects to achieve future sustainability is pivotal to success. The six model cities have shown this strong determination as exemplified by their officials. Despite budget rejections, the tressabans kept proposing and improving their own plans. Their determination has been cultivated through the planning process, and the tressabans' efforts paid off; as they got more advice from various organizations during the many public participatory activities, they were able to gather budget support. This experience showed the tressabans that a strong leadership leads with a clear vision and development direction, both of which are crucial to driving the cities toward sustainability.

### **3.8.4 Recommendations for Future Action**

While the SFCI and JICA pilot projects have piqued the model cities' interest in sustainable development, they have focused on different development aspects. Hence, the collaboration among model cities should be continued, and their partnership with public

and private entities should be kept strong. The model cities have become experts in different aspects, so that they can learn from each other. In addition, such remarkable experiences should be promoted and disseminated to other local cities. The development issues in each city have been summarized in the table below.

**Table 3.8.1 Development Issues and Focal Sectors of the First Phase Model Cities**

<b>Tessaban</b>	<b>Development Issue</b>	<b>Urban Focus</b>
Tessaban Nakhon Chiang Rai	- Ageing society - Multigeneration activities - CBT	- Elderly capacity development (training courses) - Intergenerational balance - Natural tourism in the city
Tessaban Nakhon Khon Kaen	- Transportation - LRT - TOD	- Holistic transportation (e.g. transport system and TOD) - Integration of tessaban networks
Tessaban Mueang Krabi	- Art and cultural tourism - CBT - Natural resource conservation and promotion	- Sustainable tourism destination
Tessaban Mueang Nan	- Eco-cultural tourism by bicycle route - Waste management	- Eco-cultural tourism - Community waste management at its origin.
Tessaban Mueang Phanat Nikhom	- Universal design	Ageing friendly city with universal design
Tessaban Mueang Phitsanulok	- Ageing society - Public health services	Comprehensive ageing society

Source: JICA Project Team

The tessabans should also be more open to other financial sources and collaboration. Currently, there are several financial sources for urban development proposed as a special project or project-based funds. The tessabans should keep themselves updated about such financial sources while preparing their project proposals. The preparatory inputs such as research, detailed design, and clear purposes of project, has been important to get budget support.

Monitoring and evaluating the SFC Plans are essential to understanding their potentials and issues. By utilizing the results of monitoring and evaluation, the tessabans can plan for the future and search for new solutions to address forthcoming issues. The stakeholder's group should likewise keep evaluating the plans to see more opportunities and potential persons to join the projects. The tessaban should widen their network by including new agencies to increase the chances of achieving urban sustainability in the future.