SOCIALIST REPUBLIC OF VIETNAM
DA NANG PEOPLE'S COMMITTEE

DATA COLLECTION SURVEY ON SUSTAINABLE AND INTEGRATED URBAN DEVELOPMENT IN DA NANG

FINAL REPORT

MAIN TEXT

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Abbreviations & Acronyms

3R	Reuse, Reduce, Recycle
ADB	Asian Development Bank
API	Air Pollution Indices
ARD	Agriculture and Rural Development Department
ASEAN	Association of Southeast Asian Nations
BOD	Biological Oxygen Demand
BOO	Build-Own-Operate
BRT	Bus Rapid Transit
CBD	Central Business District
CDS	City Development Strategy
CFEZ	Central Focal Economic Zone
DaCRISS	Study on Integrated Development Strategy for Da Nang City and Its Neighboring Area in the Socialist Republic of Vietnam
DAIZICO	Danang Industrial Zones Infrastructure Development and Exploitation Company
DARD	Department of Agriculture and Rural Development
DOCST	Department of Culture, Sport, and Tourism
DIEPZA	Danang Industrial and Export Processing Zones Authority
DOC	Department of Construction
DOET	Department of Education and Training
DOF	Department of Finance
DOFA	Department of Foreign Affairs
DOH	Department of Health
DOIA	Department of Internal Affairs
DOIC	Department of Information and Communications
DOIT	Department of Industry and Trading
DOLISA	Department of Labor, Invalids and Social Welfare
DONRE	Department of Natural Resources and Environment
DOST	Department of Science and Technology
DOT	Department of Transport
DPC	Danang People's Committee
DPI	Department of Planning and Investment
EIA	Environment Impact Assessment
EPC	Environment Protection Center
EU	European Union
EVN	Electricity of Vietnam
EWEC	East–West Economic Corridor
EZ	Economic Zone
FDI	Foreign Direct Investment
FEZ	Focal Economic Zone
FS	Feasibility Study
GDP	Gross Domestic Product
GMS	Greater Mekong Sub-region
GOJ	Government of Japan
GOV	Government of Vietnam
GRDP	Gross Regional Domestic Product
GSO	General Statistics Office
GSTC	Global Sustainability Tourism Criteria
GIZ	GesellschaftfürInternationaleZusammenarbeit
GTZ	GesellschaftfürTechnischeZusammenarbeit
GWP	Global Water Partnership
HAIDEP	Comprehensive Urban Development Program in Hanoi Capital City
HCMC	Ho Chi Minh City
HH	household
HIS	household interview survey
HPC	Hanoi People's Committee
HRD	Human Resource Development
ICT	Information–Communication Technology
IDA	International Development Association
IEE	Initial Environmental Examination

ERR	Internal Economic Rate of Return
ILO	International Labor Organization
IMF	International Monetary Fund
IMO	International Maritime Organization
IT	information technology
IZ	industrial zone
JBIC	Japan Bank for International Cooperation
JETRO	Japan External Trade Organization
JICA	Japan International Cooperation Agency
JPY	Japanese Yen
KfW	KreditanstaltfürWiederaufbau
MICE	Meeting, Incentives, Conference and Exhibition
MLIT	Ministry of Land, Infrastructure, and Transport
MOC	Ministry of Construction
MOCST	Ministry of Culture, Sports and Tourism
MOF	Ministry of Finance
MOI	Ministry of Industry
MONRE	Ministry of Natural Resources and Environment
MOST	Ministry of Science and Technology
MOT	Ministry of Transport
MP	Master Plan
MPI	Ministry of Planning and Investment
NCEST	National Center for Environmental Science and Technology
NGO	Non-Government Organizations
NH	National Highway
O&M	Operations and Maintenance
OD	Origin-Destination
ODA	Official Development Assistance
OECD	Organization for Economic Cooperation and Development
PC	People's Committee
PCU	passenger car unit
PIIP	Priority Infrastructure Investment Program
PMU	Project Management Unit
PPP	Public Private Partnership
R&D	Research and Development
SEA	Strategic Environmental Assessment
SEDP	Socio-Economic Development Plan
SME	small and medium-sized enterprise
SOE	state-owned enterprise
SOHO	small office/home office
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TDM	Traffic Demand Management
UMRT	Urban Mass Rapid Transit
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UPI	Urban Planning Institute
USD	US Dollar
VAT	value added tax
VGF	Viability Gao Funding
VCCI	Vietnam Chamber of Commerce and Industry
VND	Vietnamese Dong
WB	World Bank
WTO	World Trade Organization
WWTP	Waste Water Treatment Plan

SUMMARY

1) Background and Objective of the Study

1. **Background:** Urbanization of Danang has started to make rapid progress, accelerating population growth, industry accumulation, and large-scale development. The exponential expansion of the city has caused negative impacts on sustainable development of the city. Uncontrolled development at the urban center as well as peri-urban areas and a widening gap in necessary economic and social infrastructure such as roads, ports, urban transport, water supply, sewage and drainage systems, and solid waste disposal management are becoming increasing concerns of the city.

2. Japan International Cooperation Agency (JICA) signed a comprehensive partnership agreement with the City of Yokohama in October 2011. Subsequently, Danang City signed the "Memorandum of Understanding on Technical Cooperation for Sustainable Urban Development" with the City of Yokohama in April of 2013. Hence Yokohama's experience will serve as a general basis for many of the proposals made in this study.

3. **Objective:** The study is aimed at formulating capacity development directions related to urban development issues of the Danang City administration[1], as well as action plans for the challenges in three areas in urban development, which the two cities identified with the support from the City of Yokohama. The three identified areas are the following:

(i) Integrated urban development;

(ii) Self-sustaining financial management; and

(iii) Public Private Partnership (PPP) promotion.

4. An important aspect of the study is to conduct the above in a much enhanced partnership and dialogue of the two cities in extensive support of JICA and the study team through forums, study tours, and series of meetings including private sector.

2) Summary of the Urban Development Forums

5. During the study period from December 2014 to March 2016, the Danang Urban Development Forum was conducted four times, i.e., once in Yokohama City and three times in Danang City. Besides attending the Yokohama forum, public officials were invited twice to Yokohama City to examine its urban infrastructure and to meet with representatives of private companies located in Yokohama. The forum was set-up based on the agreement among Danang City, City of Yokohama as a tripartite cooperation. The objectives and schedules of each forum are listed below.

[1] In 2010, the JICA completed the "Study on Integrated Development Strategy for Danang City and Its Neighboring Area in the Socialist Republic of Vietnam (DaCRISS).

Table S.1 Summary of the Discussion Points and Outputs of the Danang Urban Development Forums

Date	Discussion Points	Outputs
1st Forum 22–23 Dec 2014 Danang City, Vietnam	• Identification of current issues on socioeconomic, infrastructure development and urban development management • Identification of future problems on the City's urban development management • Future development strategy of Danang city • Challenges for urban planning and development • Challenges for effective financial management for sustainable urban development • Direction of technical cooperation on sustainable and integrated urban development management with City of Yokohama • Potential areas of action plan and cooperation on urban development management • Way-forward for the tripartite cooperation	• Identifying the urban development issues and potential areas of tripartite cooperation. • Discussion on further elaborating urban development planning and coordination among planning agencies. • Discussion on financial management for urban development sectors, involving capital investment, O&M, and on prioritization method for capital investment, in line with PPP scheme.
2nd Forum 13–14 May 2015 Danang City, Vietnam	• Suggested approach toward sustainable and environmental city, implications from the study results • Issues on fiscal management and PPP scheme project development, implications from the study results • Proposed action plans (Draft 1)	• Danang, City of Yokohama (CoY) and JICA agreed on the basic framework of the action plan, consisting of six cross-cutting actions and six major programs. • Danang agreed to adjust its institutional arrangement, and CoY proposed to assign bureaus in charge, corresponding to the counterpart departments of Danang for the tripartite cooperation depending on the draft action plan.
3rd Forum 31 Aug 2015 Yokohama City, Japan	• Proposed action plans (Draft 2)	• The delegation from Danang City visited Yokohama City to observe urban infrastructure and discuss with working-level officials of CoY on urban development issues. • Short-term priority actions and associated sub-components were basically accepted by Danang City and it was agreed among three parties that the study team would further elaborate by the last forum.
4th Forum 23 Dec 2015 Danang City, Vietnam	• Goals and strategies toward sustainable urban development • Proposed action plans (Final draft) • Way forward to building further deepening tripartite cooperation	• Action plan proposed by the study team was agreed by three parties. Danang City requested further assistance to Japanese side and CoY responded that it would work together with Danang City to foster sustainable and integrated urban development.

Source: JICA Study Team

3) Profile of Danang City

6. **Socioeconomic Development:** The population of Danang has been growing at about 2–2.5% /year during the last decades which is expected to grow at faster rate in the next decade. The city has experienced drastic economic growth and structural change. The agriculture composed of over 20% of overall GRDP in 1976, decreased by nearly 2% in 2014. Service sector developed rapidly from contribution less than 50% of overall GRDP in 1976, and over 60% in 2014.

7. Danang, core city of Central Focal Economic Zone (CFEZ) is handicapped compared to Northern Focal Economic Zone (NFEZ) lead by Hanoi and Southern Focal Economic Zone (SFEZ) lead by HCMC in terms of market size, accumulation of industry and infrastructure. There is a widening gap among NFEZ, SFEZ, and CFEZ. Nonetheless, the CFEZ has to be another competitive edge of the nation. The gross outputs of foreign direct investment (FDI) sector improved in 2010, 2011, but the growth slowed down significantly in recent years. More than half of FDI in Danang is for the real estate and tourism sector.

Table S.2 Key Socioeconomic Indicators

Indicator		Unit	1976	1997	2010	2013	2014
Population	Average Population	'000 person	453	672	926	993	1,008
	Average annual growth rate		-	1.90%	2.50%	2.36%	1.51%
	Unemployment rate	%	-	-	6.68%	3.58%	3.46%
	Poverty rate		-	-	8.74%	0.84%1)	0.32%
GRDP	GRDP at constant 2010 price	Bill. VND	983	7,617	28,923	38,183	41,900
	Compound annual growth rate	%	-	10.24%	10.81%	9.70%	9.73%
	GRDP at current prices	Bill. VND	0.248	3,209	28,923	46,821	52,600
	GRDP per capita at current prices	'000 VND	2.171	11,327	31,234	38,458	41,581
GRDP by sector	Agriculture, forestry and fishing	Bill. VND	205	749	867	996	937
	Industry and Construction	Bill. VND	317	2,602	11,655	13,788	15,254
	Services	Bill. VND	463	4,266	16,401	23,399	25,709
GRDP structure	Agriculture, forestry and fishing	%	20.85%	9.83%	3.00%	2.61%	2.24%
	Industry and Construction	%	32.25%	34.16%	40.30%	36.11%	36.41%
	Services	%	47.10%	56.01%	56.71%	61.28%	61.36%
GRDP annual growth rate	Agriculture, forestry and fishing	%	-	6.36%	1.13%	4.73%	-5.92%
	Industry and Construction	%	-	10.54%	12.23%	5.76%	10.63%
	Services	%	-	11.15%	10.91%	12.58%	9.87%
Development investment capital	Development investment capital at current prices	Bill. VND	-	1,625	22,380	29,842	32,782
	Average annual growth rate	%	-	-	22.35%	10.07%	9.85%
Value of Exported Goods	Value of Exported Goods	Mill. USD	2	155	634	1,019	1,126
	Compound annual growth rate		-	23.02%	11.44%	17.14%	10.50%
FDI	Number of FDI Projects (accumulated)		-	43	181	281	367
	Total registered (*) capital2)	Mill. USD	-	427.8	2749.2	3316.4	3441.6
	Implemented capital in year	Mill. USD	-	22.6	286.0	246.4	155.5

Note: 1) Data on 2012,
2) Including supplementary capital to licensed projects in previous years.
Source: JICA Study Team

8. **Environment and Disaster Management:** Despite the effort to improve the environmental quality of Danang City, there are a number of environmental issues that are not fully resolved and exacerbated due to rapid urbanization and industrial development. The main concern for the future is environmental management. With a population estimated to reach 2.1 million by 2025, the promotion of sectors such as tourism, effects of further land reclamation, infrastructure construction, and air pollution, among others.

9. **Municipal Finance:** Danang city's local budget revenue is expected to be stable, while land revenue fluctuated during the last few years. Budget expenditure including development investment expenditure plans to steadily increase. The city's finance is affected by the country's fiscal status, since the city's decentralized revenue, revenue after subtraction from the central government, and transfer from the central government are the main sources for investment development expenditure. The availability of sources to fund various investment projects has always been a concern of the government, and the use of private finance and borrowing will be possible alternatives.

10. **Orientation of Current Danang city Plans:** The SEDP and General Master Plan (M/P) are two upper level plans of the city. They refer to the central regional plans developed by the central government such as Coastal Economic Zone Development Plan to 2020 and Socioeconomic Development Plan of Central Focal Economic Zone (CFEZ) to 2020 and Vision to 2030.

11. Danang City has reviewed and incorporated DaCRISS's outputs into their socioeconomic development plans and the amendment of the Master Plan to Year 2030 and Vision to 2050. The city predicts its population will be 2 million by 2020. It also takes the concepts of spatial structure of the city and transportation network including the necessity of public transport including a mass transit network.

12. Danang City foresees the development of the city to a major economic center in the central region and also by the country in 2025. The city will focus on service sector and information technology as its core industries. In terms of environment, the city formulated the roadmap "Building Danang – an Environment City by Year 2020," which stipulates the key environmental indicators to be reached by 2020. The major indicators set for the next 10 years are:

(i) GRDP (at constant 2010 prices): 6–8% per year;
(ii) GRDP per capita by 2020: 4,500–5,000 USD;
(iii) Service sector growth rate: 13–14% per year;
(iv) Industry and construction growth rate: 8–9% per year (where industry 10–11%);
(v) Budget revenue increase rate: 5–6% per year;
(vi) Investment for development: 10–11% per year;
(vii) New job opportunity: 33,000 jobs per year;
(viii) Poverty ratio (new city poverty line[2]): 2.32%;
(ix) Clean water accessibility in urban and rural areas: 100%; and

[2] Poverty line is VND800,000 /person/month (rural) and VND 1 million/person/month (urban). Source: Five Year Socioeconomic Development Plan of Danang City (2016-2020). DPI. January 2015.

(x) Solid waste collection and treatment coverage: 100%.

13. **Municipal Cooperation of Danang City:** Danang City is actively working in cooperation with 15 cities from 8 nations, of which 5 are Japanese cities[3]. Major activities of these cities include personnel exchange, study tours and business match-making. Yokohama, Kawasaki, and Sakai have signed MOUs for enhanced future cooperation.

4) Identified Main Urban Issues of Danang

14. **Complexity of urban issues:** The complexity of urban problems manifests in the fact that one component induces another problem, and then another, eventually forming a negative chain of cause and effect. The major impacts and pressures on the urban development of Danang are: (1) Population increase mainly due to in-migration from other provinces; (2) Motorization, which shows in the further increase in motorcycle ownership and the gradual shift from motorcycles to cars; (3) Economic growth due to an increase in externally sourced investments and visitors due to the expanding movement of goods and people; and (4) Growing impact of climate change.

15. **Population Growth and Migration:** Population growth will accelerate mainly because of migration to the city. While population growth rate was 1.5% up in 2015, it will accelerate and current population growth of 1 million will become 2.1 million in 2025. Rapid population increase, particularly caused by social increase, will strain more social costs and adverse environmental impacts, such as further development of basic infrastructure, affordable housing, more educational and health service delivery, and air, noise pollutions and pressure on ecosystem. Therefore, it will be the one of critical issues to Danang City to encounter a highly possible population increase in the near future.

16. **Motorization and Traffic Congestion:** In Danang city, due partially to a lack of parking space and concentration of traffic to the city center, traffic congestion is already observed and it is anticipated that motorization and traffic congestion cause adverse socioeconomic impacts, such as time loss, economic loss and adverse impact to environment.

17. **Impact of Climate Change:** Danang City has a long coastline with beautiful beaches and natural landscapes together with a mountainous region. But, at the same time, it is constantly influenced by typhoons and tides and has a high risk for tsunami disasters. Under the climate change scenario B2 (Medium Emission Scenario) developed by the Intergovernmental Panel on Climate Change, temperature and sea levels are estimated to rise.

18. **Economic Growth:** Economic development is becoming more and more critical for sustainable growth of the city. Main issues include the following:

(i) Modernize existing industries to make them more competitive and nonpolluting;

(ii) The city's economic competitiveness level is not as strong as that in other cities, such as Ho Chi Minh, Hanoi, and Haiphong. Productivity is relatively low and the sector is rather dominated by SOEs. There is no significant industry that steers the economy. Meanwhile, the management of most of the industrial estates is not so satisfactory as to attract investors;

(iii) Because the city is handicapped by a limited market (i.e., small population size), lack of infrastructure (i.e. logistics facilities, such as railway, port, depot, warehouse, etc.), and

[3] Yokohama, Kawasaki, Sakai, Nagasaki, and Mitsuke

remoteness from large growth centers in the country and the world, adopting conventional methods of growth strategies to attract manufacturing industries to the city by developing industrial estates and providing incentives would not be a long-term success;

(iv) There is a need to find Danang's competitive edge or supremacy over NFEZ and SFEZ, and to establish a much more strategic approach to economic development, one that will help guarantee the sustainable development of the city and CFEZ; and

(v) Promote and support locations of private sector investment.

19. **Investment Climate:** The City's development potential in the marine, forestry and human resources sectors are not fully tapped. Moreover, the constraints and threats facing the region include: small population, lack of infrastructure, vulnerability to natural disasters, weak private sector, weak connectivity with global markets and growth hubs, and impact of climate change.

20. Due to the small market of the region, Danang and CFEZ do not have a choice but to venture outside the region in search for a larger market and further opportunities to accelerate and sustain its growth. For that, the region needs to be attractive enough for potential residents, investors, and tourists.

21. **Living Conditions:** Living conditions in Danang has significantly improved in the last decade, but there is a still room for improvement.

(i) **Water supply:** Water supply coverage is almost 100% of households; yet, all water treatment plants are currently operating at full capacity and will not be able to meet the demand in the near future, and another issue is a relatively high ratio, 15%, of non-revenue water ratio.

(ii) **Drainage and Sewerage:** Low sewerage connection rates and limited sludge collection for domestic wastewater plus a lack of rigorous control of industrial wastewater exacerbates water pollution. The coverage ratio of domestic wastewater is a mere 21%. Nonetheless, sludge collection is carried out in a limited area due to the termination of subsidies. With regard to industrial wastewater, although three out of six industrial parks have treatment facilities, they are not rigorously managed by discharged sources and/ or controlled by the local administration.

(iii) **Solid Waste Management:** In general, solid waste has been increasing in the city due to the growing population. According to an updated estimate, the current landfill will be entirely filled by 2019 unless effective countermeasures are taken. In addition, industrial and hazardous waste are not strictly controlled, creating the potential for contamination.

(iv) **Mobility and Accessibility:** The ownership of cars and motorcycles is continuously increasing in the city and expected to accelerate in the future. Currently, traffic congestion is limited. However, the poor situation of public transport services is leading to difficulties in commuting and studying, thereby encouraging private vehicle ownership and boosting the possibility of traffic congestion in the future.

(v) **Housing:** While Danang has relatively good housing conditions, substandard and overcrowded housing is still an issue in central communes. Housing needs will change in proportion to the increase in people's income. There will be increased needs for new townhouses with car access and apartments for the medium-income group, as well as villas for the high-income group, while old townhouses will continue to dominate the housing stock of the low-income group.

(vi) **Healthcare and Education:** While basic coverage is better than other medium-sized cities, Danang lacks high-quality and tertiary services appropriate for a regional center and a tourism/industry hub. The city is home to Danang University and has a Central Hospital in the city center, but the number of tertiary-level healthcare and education services is clearly lacking for a city with a 2–3 million population and one that functions as a regional center.

22. **Environmental Management:** Danang is rich in fauna and flora especially in Son Tra Peninsula. However, in recent years, a substantial part of the city's previously protected areas has seen a number of resort development. Hence, these areas are under threat and under protected with poor greenery preservation measures.

23. By comparing the population distribution and the calculated land development suitability level, it is clear that many people continue to reside in areas rather unsuitable for development and most vulnerable to disasters. Although disaster prevention efforts in general have advanced greatly in recent years, including raising awareness along with climate change adaptation policy, dissemination efforts are still limited.

24. **Spatial Development Management:** Urban areas of Danang have been expanding quickly to outer areas in low density, while high-rise building are being built in the city center. When the current trend continues as population increases, in limited lands and space, Danang will soon have to face various negative impacts on livability, competitiveness, environmental sustainability, urban landscape, and decrease in external investments.

25. **Regional Connectivity:** Even though Danang has geographical advantage as well as the potential as the center of CFEZ, its full potential has not been flourished because of scarce of institutional regional connectivity, i.e. regional cooperation with surrounding local governments and also provinces in the CFEZ, is limited. According to Danang City, the current regional cooperation mechanism is not well functioning and has not produced significant output It is fair to say that main issue of regional connectivity is that physical infrastructure to connect Danang City and CFEZ and GMS still has a room for improvement and development, and how to build more effective institutional coordination system and practical mechanism to foster the economic development is a major challenge for Danang City and the region.

5) Opportunities for Sustainable Development of Danang City

26. The sustainable growth of Danang City as an environmental city must be achieved under the context of accelerated growth, because the growth of CFEZ is highly dependent on the growth of Danang City and vice versa. Ensuring the city's sustainable growth and development, as well as those of CFEZ, is a tremendous responsibility. Assuming that the current trend continues, wherein SFEZ grows the fastest, followed by NFEZ, the gap between CFEZ and the latter two focal economic zones may further widen.

27. Therefore, the most fundamental policy for Danang City to pursue is to establish a firm and long-term accelerated growth strategy to enable the city to function as the third-important growth center in the country whose role is to facilitate the physical and socioeconomic integration of the two stronger focal economic zones, and in the process serving as the link to a more realizable national integration. Without a strong growth area in the center of Vietnam, the country would find it hard, or even impossible, to integrate the northern and southern growth centers and distribute the benefits of development to other areas in Vietnam, including the hinterland mountain regions as well as the Greater Mekong Subregion along the East-West Economic Corridor.

28. Given these preconditions, some areas for development opportunities lie firstly in its strategic location, geographically positioning itself in the center of Asia. If the city can establish a competitive international gateway (airport, port, international roads), this will accelerate the movement of people, goods, and finance between Danang and the outside world, expanding its originally small market. Secondly, the city's proximity to 3 major World Heritages is quite a rare case especially in Asia, and coupled with the beach and mountains of Danang, the city is by far rich in tourism resources over its competitors. Given the difficulty for Danang to catch up with Hanoi and HCMC through industry-led development, tourism development and high-quality service provision will be the key for Danang to establish its own economic growth model.

Table S.3 Comparison with International Indicators and Benchmark for Danang in 2025

Strength	Weakness
• Strategic location • Rapid economic growth • Proximity to World Heritages • Good educational environment	• Limited linkage with global marketplace, low FDI attraction • Small-scope economy • Vulnerable to natural disasters • Fewer cultural and historic sites compared to Hue and Hoi An • Lack of good organization in urban development and land use efficiency. • Ineffective in motivating economical role in the central region.
Opportunity	**Threat**
• Competitive international gateway • Well-known tourism destination with high quality services • Increase in FDI	• Rapid urbanization, mechanization, industrialization • Land and housing development • Commercial development • Increase in income gap • Traffic congestion and accidents • Decrease in quality of living • Lack of housing for the medium and low-income people

Source: 1st Forum in Danang City (December 23rd, 2014, DPI of Danang City)

6) Proposed Development Strategies

(a) Need for Integrated and Strategic Approach

29. There are serious challenges in the promotion of sustainable development and realization of the envisioned Environment City when the population is expected to increase rapidly and a great amount of needs for socio-economic activities emerge in the coming years. They must be satisfied in the limited space for urban development while the environment is preserved. Thus, it is critical to update the current development plans and policies with comprehensive and coordinated viewpoints. Strategic projects and actions must be identified, designed, and implemented timely.

(b) Approach to Sustainable Development (Vision and Goals)

30. In order to pursue sustainable and balanced development, Danang City sets their city development vision in the Amended Master Plan of Danang City to Year 2030, Vision to Year 2050 as "Construct and develop Danang City to become specialized city at national level, with orientation to become a sustainable developed urban center at international level." From this, the study team proposes a redefined vision as follows:

Commitment to Environment City through competitive industries, high-quality human resource and efficient city management for and by all

31. It is becoming increasingly critical that the growth of Danang City is interacted with those of the region CFEZ. CFEZ needs a growth hub. Handicap confronting cities and provinces in CFEZ can only become competitive in the globalizing market when they are closely integrated, and the roles are shared complementarily. Key factors to promote competitive and sustainable growth of Danang include the following.

(i) Danang must be prepared to grow from a million to a 2-3 million big city.

(ii) Danang has an increasingly important role as the engine of growth of CFEZ.

(iii) Danang is expected to demonstrate as a first model of competitive and sustainable Environment City in Vietnam.

(iv) Danang must develop new types of industries with comparative edges against those of NFEZ and SFEZ.

32. Danang must develop its urban area to accommodate existing and emerging activities in livable, disaster resilient, eco-preserved, and public transport-oriented manner.

(c) Key Strategies for Sustainable Development

33. This section details the key strategies that can facilitate to link the vision and goals with specific projects and actions, provide broad directions for other projects and actions, and serve as guidance to monitor the implementation of related sectors. Based on the study and discussions held in the forums, the following are the key strategies to promote the vision and goals of Danang City:

(i) **Regional Integration:** In order for Danang to function as a driving force in Central Vietnam, the key concept is “regional integration.” Regional integration refers to many aspects such as economic and industrial development, environmental management, housing provision, tourism promotion, health, and education, among others. The most critical aspect is transportation connectivity, which is perceived at three levels, i.e. at international/regional level, national level and CFEZ level.

(ii) **Competitive Economic Development:** For Danang, competition with Hanoi and HCMC is most vital to its success in attracting foreign investment, and considering the characteristics of Danang, types of industries to expand and focus will include more high technology-based, environment-related, tourism, education, medical care, and other services. The industrial development of Danang has also to bear in mind that it must be considered not only in the territory of Danang, but also in CFEZ. For this, Danang’s basic role is to become a high quality service center and international gateway of CFEZ.

(iii) **Spatial Development Control and Management:** Establishment of core urban infrastructure, which will guide effective expansion of urban area, must be elaborated in the current approved urban master plan. It is preliminarily suggested to consider following the three points:

a. Emphasis on Environmental Considerations: Natural asset will become more valuable assets as the city urbanizes and develops further. However, there are factors that cause natural disasters, thus, the natural environment needs to be properly managed in the process of urban development. The concept of Environmental Zoning discussed in DaCRISS is worth a revisit.

b. Concept of Metropolitan Danang: Considering the environmental factor mentioned above, the logical expansion of Danang’s urban area should be towards the south,

beyond the administrative boundary of the city. It is necessary for Danang to formulate an integrated and coordinated urban land use plan, which includes the adjoining areas of Quang Nam province. The concept of a Metropolitan Danang is recommended.

c. Development of Mass-Transit Backbone: In order to ensure adequate mobility and accessibility of the people in urban area with 2 to 3 million population, it is inevitable that the area is provided with a competitive network of public transport. For Danang to be able to promote a public transport-based urban area, a transit backbone connecting the north and south in a way that it integrates CBDs in the north, central, and the south and cover main urban activity areas along the route is necessary. This north-south transit backbone must be further connected with secondary and feeder transit lines to form a hierarchical public transport network.

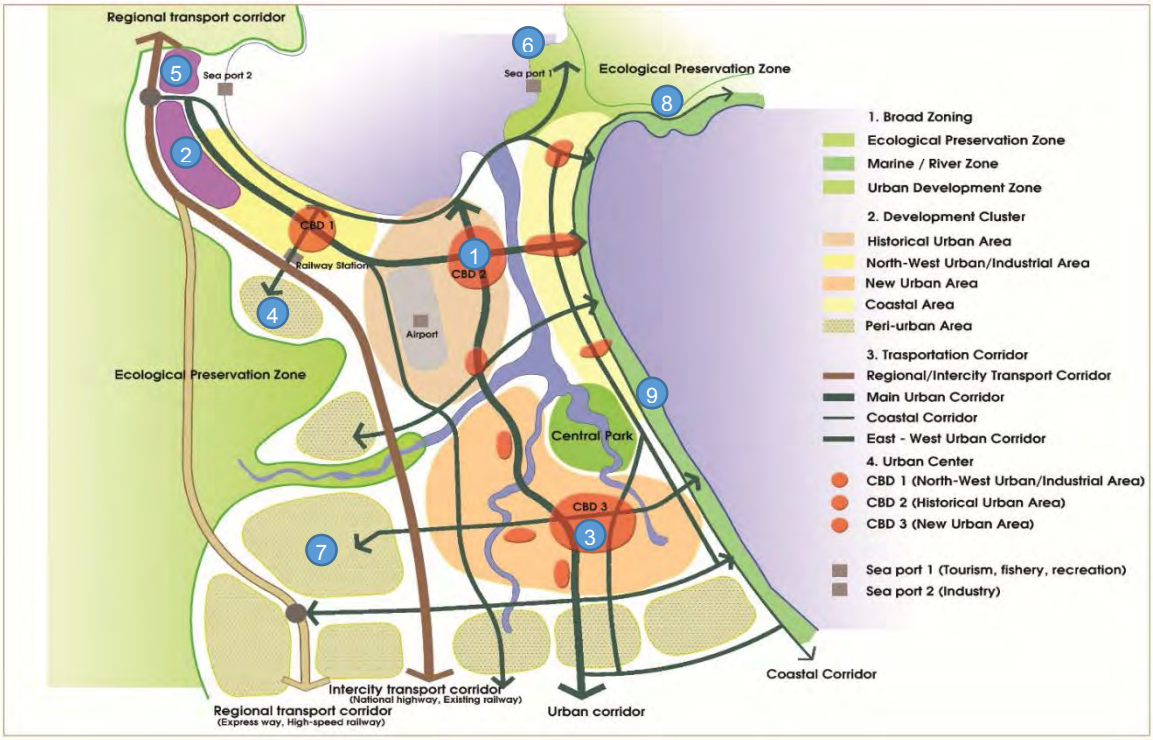
(iv) **Management of Urban Area by Cluster:** In order to enhance urban space value from socio-economic environment and cultural aspects collectively, it is desirable to classify the entire city area and identify clusters, which require special attention.

Table S.4 Possible Development Clusters (Tentative)

Broad Zoning	Cluster Type	Major Characteristics
Urban Development Zone	(1) Historical urban area with old CBD	• Public services • Business and commercial hub • Low-rise old town development coupled with new low to medium rise development
	(2) Northwest urban/ industrial area with new CBD	• Public services • Business and commercial hub • Medium to high rise development
	(3) New urban area with new CBD	• Public services • Business and commercial hub • High-rise new development
	(4) Hi-tech cluster	• Hi-tech industry, innovative industries
	(5) Lien Chieu cluster	• Conventional industry, shipping
	(6) Tien Sa cluster	• Tourism, fishery, recreation
Quasi Urban Development Zone	(7) Peri-urban area	• Agricultural production • Preservation of a semi-rural landscape
Ecological Preservation Zone	(8) Son Tra cluster	• Well-preserved fauna and flora (restricted development) and organized operation of national parks, etc.
Marine/ River Zone	(9) Coastal area to Quang Nam	• Beach resort development in harmony with nature

Source: JICA Study Team

Figure S.1 Proposed Spatial Structure and Identified Main Urban Cluster



Source: Modified from DaCRISS

(v) **Strategic Infrastructure Development:** As the urban area is expanded further beyond the current municipal boundary, infrastructure development needs will expand both in quantity and quality. Main points of considerations for specific type of infrastructure are briefly as follows:

a. **Transportation:**

- **International transport** refers to (1) further development of air transport especially expansion of air routes and services between Danang and main cities in the world through direct flights; (2) development of competitive port system comprising existing Tien Sa port and planned Lieu Trieu port as the gateway and logistics hub for CFEZ and GMS; (3) further improvement to accommodate international cruise shipping; and (4) further improvement of east-west roads and cross-border procedures.
- **Intercity transportation** refers to (1) improvement of national roads including NH1 and others which interconnect main growth centers in CFEZ; (2) early completion of North-South Expressway; (3) upgrade of existing north-south railway facilities, operation, and services; (4) preparation for future planned north-south high-speed railway development; (5) improvement of coastal shipping services; and (6) expansion and strengthening of domestic air transport connections.
- **Urban roads** refers to (1) construction of roads and bridges in such a way that they can configure efficient and hierarchical network; (2) to ensure provision of adequate road maintenance; and (3) introduction and expansion of low emission vehicles such as EV and PHEV.
- **Public transport** development must be considered from long-term and short-term

viewpoints including (1) preparation for development of rail mass-transit, which forms a backbone to support the urban area in the most effective manner; (2) continuous strengthening of bus transport services of different types to cover existing and emerging urban areas; (3) improvement of intercity bus transport to system for the people and tourists moving in the region.

- **Traffic management** refers to (1) ensure smooth and safe vehicle flow on roads; (2) provide safe and comfortable walking environment; (3) provide adequate parking facilities; (4) strengthen traffic enforcement capacities; and (5) introduce IT measures, etc., and
- **Expansion and improvement of inland water transport** includes improved use of water space along rivers and water space.

b. **Water Supply:** Considering the growing future demand of water, it is vital to expand water treatment plant, distribution networks, and reconstruct the deteriorated facilities. In order to make the sustainable business plan, it is vital to set water and sewerage tariff structure at the same time.

c. **Wastewater and Storm Water Management:** To improve service coverage ratio of wastewater treatment, control of industrial wastewater, water quality needs to be monitored attentively in order to balance the economic development and environmental safety. Measures for flood control is also required.

d. **Environment Management:** While manmade pollution can be reduced through provision of improved infrastructure facilities and services, Danang must pay more attention to (1) protection of ecosystems both in marine and forests; (2) reduction in hazard risks and strengthening of disaster preparedness; (3) further response to climate change issues; (4) preservation of cultural and traditional values, among others.

(vi) **Human Resource Development:** In order for Danang to grow as a service sector oriented environment city, the quality of human resource is a key to success. The improvement of human resource is necessary across all industry sectors in both public and private. A more comprehensive approach is required with participation of the government, communities, and private sector.

(vii) **Urban Sector Management:** The way to ensure sustainable growth of the city. It is very important to strengthen capacities of Danang City in terms of: (1) planning and project preparation; (2) institutional framework to control and guide private sector development; (3) budgeting; (4) control of expenditure; (5) value capture and PPP project design and implementation; and (6) public information and participation, etc.

7) Effective Fiscal Management

34. **Issues on Fiscal Management:** Ensuring the funding is a critical part to realize urban development and appropriate fiscal management is required. Some issues on fiscal management relate to regulatory and institutional frameworks that are defined under the central government, and it would be difficult for Danang City to challenge it in the short and medium term. The issues that could be dealt with by the city are summarized below.

(i) **A mid-long term projection of the budget:** Since most of the infrastructure investments are expected to contribute to the economic and social activities of citizens and businesses for the long term, strategic development and funding plans will be required.

(ii) **Limited flexibility:** The city needs to have a better linkage between the development goal

and the investment plan. Prioritization of the investment plan is not always based on the objective and scientific appraisal method in relation to the central government and other constraints.

(iii) **Increasing recurrent expenditure:** Recurrent expenditure is increasing due to the recent investment in major city infrastructure and tighten the budget for development expenditure.

(iv) **Appropriate procedures and monitoring frameworks:** Alternative sources of funding will be required to meet the investment demand. The use of PPP and direct financing could be options for necessary infrastructure investments, but current procedures do not incorporate such alternative sources of funding from outside the state budget.

(v) **Insufficient data and information:** Available data and information for planning are not sufficient and objective enough. Further improvements in the integration of exiting data and databases to assess the flow and the stock of assets and liabilities will be required.

(vi) **Effective management of budget expenditure:** The criteria of the budget expenditure are the basis to PM decision, MPI guidance and various allocation norms. Flexible fiscal management and linkage between project's performance and its budget expenditure will be required.

35. **Key Interventions and Strategies for Fiscal Management:** In order to manage fiscal balance and secure alternative sources effectively, coordinated mid-long term fiscal planning, Investment plan and funding strategy will be required continuously.

a. Long-term fiscal plan

Since most of the infrastructure investments are expected to contribute to economic and social activities of citizens and businesses for a long term, strategic development plan will be required.

b. Investment Plan

The city needs to have a better linkage between development goal and investment plan. It will be also necessary to consider life cycle costs including O&M from the initial investment period, and efficient operation and maintenance for a long term will need to be promoted and incorporated in investment planning.

c. Funding strategy

The use of PPP, direct financing can be options for necessary infrastructure investment and a procedure incorporates such kind of alternative sources of funding from outside of state budget. Appropriate investment procedure (including assessment of long-term fiscal impacts) and monitoring framework (including fiscal performance index or external rating) will be required to increase the borrowing capacity and assure good financial health at the same time. In addition, further improvement in integration of exiting data and database to assess flow and stock of assets and liabilities will be required in this plan.

8) Infrastructure Development Based on PPP Scheme

36. **Issues on Infrastructure PPP Development:** Given the rapid urbanization, the private investments are an alternative to meet infrastructure demand. Following issues are identified for PPP promotion.

(i) **Tariff and Budget:** Even under the PPP, it is indispensable to cover the Capex and the O&M cost through user charges for financial sustainability. With the increased

demand, higher technologies will be required (e.g. a shift from direct landfill to incineration on waste disposal). Higher tariff will also be required to cover the Capex and the O&M cost. Since there is a limitation to use public funds to fill the gap in the future, the city is required to increase tariff to let infrastructure projects financially sustainable.

(ii) **Appraisal of Projects:** The new PPP decree stipulates that the People's Committee develops the contents of the project proposal in the phase of conceptual notes. A preliminary analysis of the financial plan, the risk allocation, and the technical requirements are necessary at this stage where it might be difficult without professional support.

(iii) **Promoter:** The PPP project includes construction with a significant amount of investment and O&M, which leads to the involvement of many government agencies. Related agencies need to coordinate with each other to successfully implement PPP projects.

(iv) **Risk Allocation:** In infrastructure business, some risks, such as changes in laws and governmental policies, site risks, demand fluctuation risks, etc., are typically not manageable by the private sector. Usually, international investors cannot take such risks, and appropriate risk allocation between private and governmental parties is crucial for them to apply for the project.

(v) **Government Guarantee:** Although the awarding party is local government, its creditworthiness is not enough to raise funds. The central government guarantee and other guarantees for the payment of the local government are necessary to raise funds from them.

(vi) **Unsolicited Proposal:** There will be a 5% incentive for the investor who proposed a project. It is disappointing for investors that the projects they proposed have to be tendered without a reasonable incentive, but both the local government and the investors have to prepare for projects pursuant to the new legislation.

37. **Key Interventions and Strategies for Development of Infrastructure PPP :** It is required to solve the above mentioned issues in order to realize the PPP project in Danang. The following measures are recommended to solve those issues.

(i) Project Scheme

1. **Tariff and budget for Viability Gap Funding (VGF):** Allocating some of the budget to PPP projects is required to be able to find the viability gap (e.g. receiving a budget from the central government and/or the general account of Danang City) .until the principle of cost recovery is applied. For a mid-term period, it is important to implement both the reduction of fiscal expenditure for PPP projects and the expansion of the principle of cost recovery.

2. **Risk Allocation:** In order to set the best suitable risk allocation, government officials need to learn about the typical risk allocation for each infrastructure PPP. So it is also recommended that Danang City hire an external PPP advisor to figure out the optimal risk allocation among stakeholders, while taking project conditions into account. In addition, in order to implement PPP projects smoothly and quickly, it might be profitable to develop a "Risk allocation guideline" and/or the model contract for PPP (pilot project).

3. **Government Guarantee:** Guarantees for payment obligations and currency convertibility by the central government will be the key to attract investors. Danang City needs to

discuss the matter closely with the central government and work out a credit support mechanism.

(ii) Procurement

4. **Applied technologies:** In some projects, there might be many kinds of technologies to be applied, possible technologies need to be compared and the best suitable technology should be selected. It is also useful for Danang City to hire an independent engineering consultant reviewing investor's proposal and FS report.

5. **Project Appraisal:** To appraise a candidate project, government officials should be knowledgeable about PPP, namely the alternatives (structure patterns) to PPP and international case studies (i.e. successful projects and projects that resulted in failure). The following measures would help with appraising a project: such as introduction of educational program; secondment to the private sector; and transaction advisors' support and hiring experts from the private sector. It might be helpful to develop a "PPP process guideline" for procurement processes, if necessary, after the PPP circular is enacted.

6. **Promoter:** Although the promoting agency needs to be the lead for the implementation of a PPP, they do not have enough experience to do so. A general advisor for the promoting agency could be helpful. In addition, setting up a dedicated unit for PPP will also be helpful in boosting the PPP project development.

9) Proposed Action Plan

38. Proposed action plans and programs were formulated based on the study's discussions held with relevant Departments through a total of four forums and separate meetings. The following proposed Action Plan was proposed to Danang City prior to the 4th Forum and obtained shared understanding.

Table S.5 Proposed Actions and Programs

	Actions and Programs	Main Coordinating Agency	Time Frame
Cross Cutting Actions	1. Elaborate Integrated and Sustainable Urban Development Strategies More concrete integrated and sustainable urban development strategies shall be elaborated, based on the existing urban development master plan, sectoral plans, Environment City Plan, and the envision of new economic development strategies, which is to be a driving force of Central Focal Economic Zone (CFEZ) and a metropolitan city in the central region	Department of Planning and Investment (DPI) Department of Construction (DOC)	Short (1-3 years)
	2. Redefine and Elaborate Development Strategies based on Focal New Industries to Increase Competitiveness Create employment for a city with 2 – 2.5 million population, develop strategies and stimulate globally and domestically competitive new industries, such as tourism, high-quality medical care, services, high-tech & Research and Development (R&D), Information Technology (IT), environment, Meeting, Incentive, Conference and Exhibition (MICE) education & human resource development It is also vital to empower and stimulate Small and Medium Enterprises (SMEs) and supporting industries. Vitalize local economy by empowering SMEs, encourage economic diversification, and take necessary measures for expanding labor market.	Department of Planning and Investment (DPI)	Short (1-3 years)

	Actions and Programs	Main Coordinating Agency	Time Frame
	3. Update "Environment City of Danang" and Formulate an Integrated Strategic Plan for a new "Environment City" Manifesto Update the "Building Danang – An Environment City" in accordance with Decision No. 41/2008/QD-UBND, 21st August 2008 and Decision No. 5182/QĐ-UBND, 4th August 2014, and promote advanced and proactive policies and measures, as well as a tangible plan beyond 2030. In addition, formulate an environment protection plan based on the Environmental Protection Law.	Department of Natural Resources and Environment (DONRE)	Short (1-3 years)
	4. Build a Sustainable Funding Mechanism and an Infrastructure Development Method In response to an increase in the infrastructure development needs, effectively utilize fiscal funds. Formulate a long-term financial plan, an effective investment plan, and an efficient financing plan, in order to build a sustainable financial management system. In addition, to promote infrastructure development by utilizing private funds and know-how. Develop bankable PPP projects and carry out capacity building so that the City will be able to evaluate, appraise, screen proposals of PPP projects.	Department of Finance (DOF) Department of Planning and Investment (DPI)	Short to Mid-term
	5. Establish a Comprehensive Human Resource Development System Promote Danang City as a center of human resources development in Vietnam and also for GMS. As one of new pillar industrial development strategies, set capacity development of public sector, human resources development of private sectors, closely linked with new industrial development strategies, and develop integrated human resources development system in Danang City.	Center for Promotion of Human Resources Development (CP-HRD)	Short (1-3 years)
	6. Spatial Plan Management Strengthen administrative capacities and establish an effective institutional system to promote desirable land-use and urban development, and to prevent sprawl (unregulated low-density urban area expansion), which is a major obstacle against environmentally sustainable urban development, i.e. public transport based compact urban city with low carbon society.	Land Fund Development Center (LFDC) under DONRE	Short (1-3 years)
Programs/Projects	1. Scale-up Environment Improvement Projects Structure an environment improvement measures, taking existing and future urban area and land-use into consideration, and carry out such measures. Sub-components of the environment improvement primarily include drainage, sewage treatment and solid waste management including separate collection and treatment, and also include but not limited to, air, soil, noise, seawater, surface water, underground water, coastal area, eco-preservation, etc.	Department of Construction (DOC)	Short (within 1 year)
	2. Develop Integrated Danang Port System (Lien Chieu and Tien Sa Ports) Develop Lien Chieu port and Tien Sa port as international gateway of East-West Economic Corridor (EWEC), Greater Mekong Sub-region (GMS) and CFEZ. Building up integrated port development plan and cooperative mechanism for Lien Chieu logistics port, Tien Sa passenger terminal and Danang bay	Department of Transport (DOT)	Short (within 1 year)
	3. Develop a Comprehensive Public Transport Network and Transit-oriented Development (TOD) Lay down policies and plans to develop compact, low carbon-emission and public transport based urban area. Cleary articulate functions of Urban Mass Rapid Transit (UMRT) and integrated urban development strategies for urban area. Strengthen connectivity, growth centers and promote integrated urban development with bordering area of Quang Nam province, i.e. the direction to Hoi An city, and Hue province.	Department of Transport (DOT)	Short (1-3 years)
	4. Develop Mixed-Use Multifunctional New Town(s) Carry out in conjunction with above 3 and 4, formulate plans to develop an integrated large-scaled new town at southern part of Danang City, bordering Quang Nam province, in order to deliver suitable living environment to anticipated ballooning population in near future.	Department of Construction (DOC)	Short to Mid-/ Long-term

	Actions and Programs	Main Coordinating Agency	Time Frame
	5. Strengthen Natural Disaster Management System Conduct surveys and draw up preventive and mitigative plans to mitigate natural disaster risks (flooding, mudslide, typhoon, etc.) in existing and planned urban areas. Uphold plans and activities to strengthen disaster management system.	Department of Natural Resources and Environment (DONRE)	Short (1-3 years)

10) Opportunities and Constraints for Infrastructure Funding

39. In order to ensure sustainable growth of the city, it is very important to strengthen capacities of Danang City in terms of: (1) planning and project preparation; (2) institutional framework to control and guide private sector development; (3) budgeting; (4) control of expenditure; (5) value capture and PPP project design and implementation; and (6) public information and participation, etc.

(a) Capacities and Opportunities for Infrastructure Funding

(i) **Estimated Budget Envelop:** The availability of sources to fund various investment projects has always been a concern of governments. However, public facilities and infrastructures have not always been funded by public money alone but can be done a lot by the private sector and users of services, if the projects and institutional setup are properly designed. Therefore, it is worth a try to first determine the financial capacity of Danang covering all stakeholders, that is, the government, private investors, and users. As a rule of thumb, it is estimated that the budget envelop Danang city could mobilze for 2016-2013 and 2021-2025 will be USD 2.9 and USD 4.3 billion, respectively based on the assumptions that GRDP will growth at 8%/year, 40% of GRDP can be mobilized for infrastructures.

(ii) **Key Interventions and Strategies for Fiscal Management:** In order to manage fiscal balance and secure alternative sources effectively. Coordinated mid-long term fiscal planning, Investment plan and funding strategy will be required continuously.

(iii) **PPP Infrastructure Projects:** The PPP requires further interventions with particular regard to Viability Gap Funding（VGF）, risk allocation, government guarantee, applied technologies, project appraisal and promotors capacity.

11) Proposed Institutional Arrangements

40. **Land Capture of "Sold" Land:** Unearned increments in land value is an increase of value in land or property without any cost to the landowner. The following makes an attempt to categorize existing mechanisms to share the benefits of unearned increment with the general public which each carry a different context and weight on the points mentioned in the preceding paragraphs. The mechanisms are categorized into three groups: taxation, planning conditions and obligations, urban development methods.

41. **Leveraging National Funds:** Yokohama City's case can provide insights on how to leverage national funds in an effective way. Back in the 1960s, the core development requirements and the ever-increasing necessities for public services and infrastructure required a considerable amount of funding and the financial requirements were overwhelming Yokohama City's own financial capabilities. The city, therefore, made various efforts to mobilize financial resources and cooperated with various entities to ease its financial burden

and stave off monetary obligations. A determined effort at coordination and networking with central government and private entities resulted in funding becoming available. Thus, the construction of the expressway network and the Bay Bridge were realized with financing from the public cooperation ; the revitalization of the central district was supported by private land owners who provided some portion of their lands for public use as provided for in the Land Readjustment Act; the Kanazawa District Reclamation Project was funded by foreign bonds (Mark Bond of former West Germany and Swiss Franc Bond); and the Kohoku New Town Project was built by the Urban Renaissance Agency former Japan Housing Corporation .

42. **Inter-sectoral Organization Setting:** Yokohama City is a successful example of how the city did away with vertical sectionalism and succeeded in organizational reform in city administration. Yokohama carried out administrative action not through the traditional vertical method but through a dynamic framework that accommodated needed organizational and administrative reforms and adjustments. Yokohama City established the Planning and Coordination Unit (later called Bureau) and conferred on it a centralized authority with enhanced coordinative mandate among relevant departments. A systematic urban development policy like the Six Major Strategic Projects necessitated a comprehensive coping mechanism that could handle issues and concerns beyond the borders of departments and hierarchical sections in the City Hall.

12) Key Considerations

43. It is stressed that Danang City shall take necessary actions formulated through this study and incorporate the plans, strategies and feedbacks through the activities to the upper plans and strategies. When formulating a next SEDP, it is underlined that the City needs not only to set target indicators, but also, and more importantly, set economic development strategies based on the above mentioned process, and establish a mechanism to prioritize investment plans for urban development. Once such mechanism is established, the City shall define “selection and concentration” on capital investment for economic and urban development, in order to more effectively utilize budget, which will likely be limited in the future.

44. It is a critical challenge for the City that it sustains its revenue by keeping economic and industrial development, in order to keep providing satisfactory level of sustainable public services, and also investing for public infrastructure development. Again, it is essential that the City formulate practical strategies and investment plans to foster SMEs and strategic industries, such as tourism and IT industry. An approach of “value capture of sold land” is one thing that the City might want to take a swift action since it can be carried out without new investment, but by reviewing and re-evaluating the existing land assets of the City.

45. The last key consideration is a challenge against “economies of scale” when the City formulates economic and urban development strategies. The economic market of Danang itself is not significantly large, once the City considers investing a mega infrastructure development project, such as port and public transport. Therefore, regional cooperation with surrounding areas and most importantly with CFEZ is a very critical factor for the City. Danang City understands the regional cooperation is one of the important factors to sustain and farther develop the city. Since the mechanism for such regional cooperation already exists, it is underlined that the City takes an initiative to select one action and/or project to start, so that the City will be able to learn what could be done through such regional cooperation and what would be the issues for fostering such regional cooperation. Regional cooperation and coordination is one of key solutions for the City to expand its “economies of scale” and sustain and farther develop the city.

1 INTRODUCTION

1.1 Background

1.1 Danang is the biggest city in the central region of Vietnam, one of five centrally controlled municipalities in the country, and also a major port city. It is expected to be the logistics hub of the Mekong region due to its location at the eastern edge of the East-West Economic Corridor that connects Laos, Thailand, and Myanmar. Moreover, it is located within 100km of several UNESCO World Heritage Sites, including the Imperial City of Hue, the Old Town of Hoi An, and the My Son ruins.

1.2 Urbanization has started to make rapid progress, accelerating population growth, industry accumulation, and large-scale development. The exponential expansion of the city has caused negative impacts on sustainable development of the city. Uncontrolled development at the urban center as well as peri-urban areas and a widening gap in necessary economic and social infrastructure such as roads, ports, urban transport, water supply, sewage and drainage systems, and solid waste disposal management are becoming increasing concerns of the city.

1.3 Japan International Cooperation Agency (JICA) signed a comprehensive partnership agreement with the City of Yokohama in October 2011. Subsequently, Danang City signed the “Memorandum of Understanding on Technical Cooperation for Sustainable Urban Development” with the City of Yokohama in April of 2013. Hence Yokohama’s experience will serve as a general basis for many of the proposals made in this study.

1.2 Objective

1.4 In 2010, the JICA completed the “Study on Integrated Development Strategy for Danang City and Its Neighboring Area in the Socialist Republic of Vietnam (DaCRISS). Danang City has incorporated this in its Socio-Economic Development Plan (SEDP) and continues to strive for developing urban infrastructure.

1.5 The study is aimed at formulating capacity development directions related to urban development issues of the Danang City administration, as well as action plans for the challenges in three areas in urban development, which the two cities identified with the support from the City of Yokohama. The study team will, therefore, carry out surveys in the three areas to identify issues in order for Danang City to maintain sustainable and holistic urban development. The three identified areas are the following:

(i) Integrated urban development (with well liaison among sectors);

(ii) Self-sustaining financial management; and

(iii) PPP promotion (formation and administration of PPP infrastructure development business).

1.6 An important aspect of the study is to conduct the above in a much enhanced partnership and dialogue of the two cities in extensive support of JICA and the study team through forums, study tours, and series of meetings including private sector.

2 DANANG URBAN DEVELOPMENT FORUM FOR TRIPARTITE COOPERATION ON SUSTAINABLE DEVELOPMENT

2.1 Summary of the Urban Development Forums

2.1 During the project period from December 2014 to March 2016, the Danang Urban Development Forum was conducted four times, i.e., once in Yokohama City and three times in Danang City. Besides attending the Yokohama forum, public officials were invited twice to Yokohama City to examine its urban infrastructure and to meet with representatives of private companies located in Yokohama. The forum was set-up based on the agreement among Danang City, City of Yokohama as a tripartite cooperation.

2.2 The objectives and schedules of each forum are listed in the table below.

Table 2.1.1 Summary of the Discussion Points and Outputs of the Danang Urban Development Forums

Date	Discussion Point	Output
1st Forum 22–23 Dec 2014 Danang City, Vietnam	• Identification of current issues on socioeconomic, infrastructure development and urban development management • Identification of future problems on the City's urban development management • Future development strategy of Danang city • Challenges for urban planning and development • Challenges for effective financial management for sustainable urban development • Direction of technical cooperation on sustainable and integrated urban development management with City of Yokohama • Potential areas of action plan and cooperation on urban development management • Way-forward for the tripartite cooperation	• Identifying the urban development issues and potential areas of tripartite cooperation. • Discussion on further elaborating urban development planning and coordination among planning agencies. • Discussion on financial management for urban development sectors, involving capital investment, O&M, and on prioritization method for capital investment, in line with PPP scheme.
2nd Forum 13–14 May 2015 Danang City, Vietnam	• Suggested approach toward sustainable and environmental city, implications from the study results • Issues on fiscal management and PPP scheme project development, implications from the study results • Proposed action plans (Draft 1)	• Danang, CoY and JICA agreed on the basic framework of the action plan, consisting of six cross-cutting actions and six major programs. • Danang agreed to adjust its institutional arrangement, and CoY proposed to assign bureaus in charge, corresponding to the counterpart departments of Danang for the tripartite cooperation depending on the draft action plan.
3rd Forum 31 Aug 2015 Yokohama City, Japan	• Proposed action plans (Draft 2)	• The delegation from Danang City visited Yokohama City to observe urban infrastructure and discuss with working-level officials of CoY on urban development issues. • Short-term priority actions and associated sub-components were basically accepted by Danang City and it was agreed among three parties that the study team would further elaborate by the last forum.
4th Forum 23 Dec 2015 Danang City, Vietnam	• Goals and strategies toward sustainable urban development • Proposed action plans (Final draft) • Way forward to building further deepening tripartite cooperation	• Action plan proposed by the study team was agreed by three parties. Danang City requested further assistance to Japanese side and CoY responded that it would work together with Danang City to foster sustainable and integrated urban development.

Source: JICA Study Team

2.2 First Forum (22–23 December 2014)

2.3 The first Danang Urban Development Forum was carried out in Danang on the 22nd and 23rd of December 2014. The forum aimed at launching the tripartite cooperation among Danang City, City of Yokohama and JICA for fostering sustainable and integrated urban development in the Danang city. Three focal themes, integrated urban development, effective fiscal management for sustainable urban development and impelling PPP scheme, were set and agreed among the parties to further discuss and to be elaborated to draw up action plans to foster the urban development in Danang.

2.4 Geographical features and advantages, socioeconomic and public administrative challenges, and future vision of city management and socioeconomic development strategies were introduced by Danang, while CoY presented about the tripartite cooperation, the importance of city to city cooperation for sustainable urban development and the experience of Yokohama's integrated urban development and effective financial management for it and the application of PPP scheme at City of Yokohama.

1) Discussion Points

2.5 The major points discussed during the first Danang Urban Development Forum are the following:

(a) Advantages of Danang City

- Gateway of East-West Economic Corridor (EWEC 1) and planned EWEC2.
- Designated strategic port in the central region to be the international gateway for marine transport.
- Situated on cultural heritage road stretching from Quang Binh to Quang Nam provinces.
- Close to three World Heritage sites, i.e., Hoi An Ancient Town, Hue Ancient Citadel, and My Son Sanctuary.
- World-renowned beach and tourism destination.
- Relatively stable and high increase in FDI.
- Ranked first on the Provincial Competitive Index in 2013 for best outstanding city for business environment and one of three national communication centers in Vietnam.

(b) Identification of Current Issues on Urban Development

- Limited linkage with global market and market size is relatively small.
- Lack of good governance in urban development and effective land-use measures and planning.
- Ineffective in motivating economical role in the central region of the country.
- Inconsistence in transport management and lack of public transportation.
- Environment matters have not been received adequate attention, resulted in number of projects have lagged behind the schedule.

(c) Identification of Future Issues on Urban Development

- Rapid urbanization and excessive burden on natural and socioeconomic environment.
- Potential increase in income gap.
- Traffic congestion and accidents.
- Degrading in quality of living.
- Lack of housings for medium and low-income people

Box 2.2.1 Program of the First Danang Urban Development Forum

22 December 2014, Monday

Time	Program
8:00-8:15	Inaugural speech: Mr. Nguyen Ngoc Tuan, Deputy Chairman of DPC
8:15-8:30	Keynote speech: Mr. Tetsuya Nakajima, Director General, Center of Co-Governance and Creation, Policy Bureau, City of Yokohama
8:30-8:45	About the tripartite cooperation: Mr. Hidetoshi Irigaki, Director General, Southeast Asia and Pacific Department, Japan International Cooperation Agency (JICA)
8:45-9:00	Importance of city to city cooperation for sustainable urban development: Mr. Takashi Kondo, Manager, International Technical Cooperation Division, Center of Co-Governance and Creation, Policy Bureau, City of Yokohama
9:00-9:20	Future Vision of City Management of City of Danang through implementation of the Danang Urban Development Forum: Mr. Tran Van Son, Director, Department of Planning and Investment, Danang City
9:20-9:40	Future Development Strategy of Danang: Dr. Nguyen Phu Thai, Director, Danang Institute for Socio-economic Development, Danang City
9:40-10:00	*Tea Break*
10:00-10:20	Steady Development of Hoa Lien Water Supply PPP Project with Earnest Supports from Danang City, JICA & ADB: Mr. Kozo Bando, Senior Supervisory Engineer, Kajima Corporation
10:20-10:40	Challenges to materialize WTE PPP project in Danang: Mr. Gen Takahashi, Deputy General Manager, Business Development, Asia Pacific Division, JFE Engineering Corporation
10:40-11:00	Towards Sustainable Development-Yokohama Port Corporation: Mr. Atsushi Fujii, Executive Director, Corporate Policy Dept. Engineering Dept., Yokohama Port Corporation
11:00-11:15	Q&A Session
11:15-11:35	Brief introduction of the survey: Mr. Osamu Abe, Deputy Team Leader, JICA Study Team
11:35-11:40	Closing remarks: Mr. Nguyen Ngoc Tuan Deputy Chairman of DPC
11:40-13:30	*Lunch*
14:00-14:30	Site visit to Hoa Lien Water Supply Plant -
14:45-15:15	Site visit to Golden Hill
15:30-16:00	Site visit to FPT City

23 December 2014, Tuesday

Time	Program
8:00-8:10	Opening speech: Mr. Tran Van Son, Director, Department of Planning and Investment, Danang City
8:10-8:30	Challenges for Urban Development in Danang: Mr. Le Tung Lam, Deputy Director, Department of Construction, Danang City
8:30-8:45	Q&A Session
8:45-9:05	Experience of Yokohama (Integrated urban development): Mr. Toru Hashimoto, Director for International Technical Cooperation, Center of Co-Governance and Creation, Policy Bureau, City of Yokohama
9:05-9:25	Q&A Session
9:25-9:40	Details about the survey (Urban development): Dr. Shizuo Iwata, Team Leader, JICA Study Team
9:40-10:00	*Tea Break*
10:00-10:20	Challenges for effective financial management for sustainable urban development in Danang: Mr. Pham Cu, Deputy Director, Department of Finance, Danang City
10:20-10:35	Q&A Session
10:35-10:55	Experience of Yokohama (Effective financial management for sustainable urban development): Mr. Hiroki Miyajima, Deputy Manager, International Technical Cooperation Division, Center of Co-Governance and Creation, Policy Bureau, City of Yokohama
10:55-11:15	Q&A Session
11:15-11:30	Details about the survey (Effective financial management): Ms. Mariko Ogawa, JICA Study Team
11:30-13:30	*Lunch*
14:00-14:20	Application of PPP scheme for infrastructure in Danang: Ms. Le Thi Kim Phuong, Head of Division, Foreign Economic Relations Division, Department of Planning and Investment, Danang City
14:20-14:40	Q&A Session
14:40-15:00	*Tea Break*
15:00-15:25	Experience of Yokohama (Application of PPP scheme): Mr. Toru Hashimoto, Director for International Technical Cooperation, Center of Co-Governance and Creation, Policy Bureau, City of Yokohama
15:25-15:45	Q&A Session
15:45-16:00	Details about the survey (PPP): Mr. Satoshi Takesada, JICA Study Team
16:00-16:20	Wrap-up and closing remarks: Mr. Tetsuya Nakajima, Director General, Center of Co-Governance and Creation, Policy Bureau, City of Yokohama, and Mr. Hidetoshi Irigaki, Director General, Southeast Asia and Pacific Department, JICA

Source: JICA Study Team

2) Points Agreed Upon

2.6 Based on the major points discussed during the first Danang Urban Development Forum, the participants agreed upon several points, as follows:

(a) Vision for Socioeconomic Development

- "The City will develop toward the direction of knowledge economy, and friendly, peaceful and attractive destination with good living conditions"
- Establish a metropolitan region with Danang City as center and shared the growth with surrounding cities.

(b) Urban Planning Management

- Needed for evaluating City's master plans and sectoral plans and selecting priority projects to implement.
- Needed for restructuring city center area, such as renovating and developing newly built urban areas and re-adjusting land-use.
- Necessity of developing public transport system (buses and UMRT).
- Needed for developing new urban clusters (sub-core centers) with engagement of stakeholders.
- Needed for improving institutional and human resource capacities at urban planning agencies.
- Necessity of developing and improving urban infrastructure, such as water supply, wastewater treatment plants, solid waste management facilities.
- Necessity of expanding and improving the functions of Tien Sa port and develop Lien Chieu port.
- Necessity of expediting the measures and planning for environment projects.
- Necessity of long-term plan to improve institutional and individual capacities for planning and administration, monitoring and evaluation.

(c) The Way Forward

- Cooperation on above mentioned urban development issues and potential areas of tripartite cooperation.
- Discussion on assessment of urban development planning and a coordination mechanism to coordinate activities among planning agencies.
- Discussion on financial management for a number of sectors, involving capital investment, operation and management, in particular, prioritize infrastructure development projects under financial constraints.
- Support in building mechanisms for implementing infrastructure projects in line with PPP scheme and institutional and individual capacity development for PPP projects.

2.3 Second Forum (13–14 May 2015)

2.7 The second forum was carried out in Danang. Prior to the forum, a delegation from the city visited Yokohama in February. The delegation visited the city office, Minato Mirai area, Kanazawa industrial zone, Kohoku New Town and urban infrastructure facilities, such as water supply plant, Yokohama Port and railway and recycling companies located in Yokohama. Main findings that the delegation presented at the forum were:

(i) consistent, coherent effectiveness in design and implementation of CoY's six strategic projects and community participation in urban management;

(ii) sharing financial burden in urban development process among the city government, the central government and private sector;

(iii) Yokohama G30 plan and 3R solid waste management;

(iv) CoY's experience to respond to rapid population raise by developing strategic urban centers; and

(v) the importance and necessity of transit-oriented development (TOD) and public transport network development.

2.8 **Thematic Meetings:** Two thematic meetings were held, one on sewerage and another on industrial and urban complex development. The meeting about sewerage was attended by working-level public officials to exchange opinions on sewerage operation and management. The meeting about business opportunity was attended by DPI, IPC and private sector to exchange information of JGC's business and business opportunities in Danang.

1) Discussion Points

2.9 The major points discussed during the second Danang Urban Development Forum are the following:

(a) Suggested Approach toward Sustainable and Environment City

- Rapid expansion of urban area to the northwest, west, south and coastal areas causes environment degradation.
- Outline of negative chains which impede sustainable urban development, such as lack of land-use control, low density urban area expansion and high-rise building in city center, delay and inefficiency in infrastructure development, lack of investment budget and budget management, lack of urban management capacity of related agencies and individual officials, and so on.
- Urbanization to outer urban area: decrease in population at the city center and increase in population in outer area.
- Expansion of urban areas and public transport in other public transport advanced cities.
- Spatial structure concept regarding the connectivity of Danang City and the central region and within the City.

(b) Effective Fiscal Management

- Difficulty to have a mid and long-term fiscal plan because development goal and priority areas are defined annually by the DPC and affected by the development directions of the central government.

- Legal framework of budgeting makes less flexibility in planning of budget, and the budget amount for capital investment is limited compared to the demand.
- Because of recent increase in infrastructure investment and economic downturn since 2012, the budget for recurrent expenditure is getting tighter.

Box 2.3.1 Program of the Second Danang Urban Development Forum

13 May 2015, Wednesday

Time	Program
8:00-8:05	Introduction of Participants: Representative of DPI
8:05-8:15	Opening speech: Mr. Nguyen Ngoc Tuan, Deputy Chairman of DPC, Danang City
8:15-8:25	Keynote speech: Mr. Tetsuya NAKAJIMA, Executive Director for Development Cooperation, International Bureau, City of Yokohama
8:25-8:55	Study tour report: Urban development (MM21, New Town Development) and Solid Waste Management (3R: Reduce, Reuse, Recycle, Reduction of Solid Waste G30): Mr. Nguyen Van Duy, Deputy Head of Urban Management Division, Danang DPC Office
8:55-9:25	Q&A Session
9:25-9:55	Practice of urban center redevelopment Minato Mirai 21 District: Mr. Tetsuya Nakajima, Executive Director for Development Cooperation, International Bureau, City of Yokohama
9:55-10:20	*Tea Break*
10:20-10:35	The overview of Port of Yokohama: Mr. Masakazu Okuno, Manager, Development Cooperation Department, International Bureau, City of Yokohama
10:35-10:50	The overview of sewage works of City of Yokohama: Mr. Hiroaki Muto, Assistant Manager, Development Cooperation Department, International Bureau, City of Yokohama
10:50-11:30	Q&A Session
11:30-13:30	*Lunch*
14:00-14:30	Study on integrated urban development under cross-sectoral coordination: Findings, implications from the study results, and suggestions for Danang City to be a sustainable and environmental city: Dr. Shizuo Iwata, Team Leader, JICA Study Team
14:30-14:50	Q&A Session
14:50-15:10	*Tea Break*
15:10-15:40	Study on fiscal management situation and issues of Danang City: Implications from the study results and suggestions: Ms. Mariko Ogawa, JICA Study Team
15:40-16:10	Q&A Session
16:10-16:40	Study on development of infrastructure projects based on PPP: Implications from the study results and suggestions: Mr. Satoshi Takesada, JICA Study Team
16:40-17:10	Q&A Session
17:10-17:30	Wrap-up of the first day: Mr. Osamu Abe, Deputy Team Leader, JICA Study Team

14 May 2015, Thursday

Time	Program
8:00-8:05	Opening and Presentation of the purpose of the Action Plan and the expected results: Mr. Osamu Abe, Deputy Team Leader, JICA Study Team
8:05-8:45	Presentation of the Draft Action Plan: Mr. Osamu Abe, Deputy Team Leader, JICA Study Team
8:45-10:15	Discussion on the Draft Action Plan
10:15-10:35	*Tea Break*
10:35-10:55	Wrap-up speech: Mr. Tetsuya Nakajima, Executive Director for Development Cooperation, International Bureau, City of Yokohama
10:55-11:15	Wrap-up speech: Way Forward: Mr. Noriji Sakakura, Dep. Director General, Southeast Asia Division, JICA
11:15-11:30	Closing remarks: Mr. Nguyen Ngoc Tuan, Deputy Chairman of DPC, Danang City
11:30-13:30	*Lunch*

Source: JICA Study Team

(c) Development of Infrastructure Projects based on PPP Scheme

- Although the government stipulated new PPP decree, guidelines and practical administrative procedures for sub-national governments are not yet produced.
- Lack of practical experience and enough knowledge to access potential PPP projects.

- Typical risk allocation for respective infrastructure project is not set out

(d) Action Plan for Sustainable Development of Danang City

- Six cross-cutting actions and six programs/projects, including objective, key considerations and candidate sub-actions, were proposed.

Programs

(i) Program 1: Development a competitive public transport network

(ii) Program 2: Promote and accelerate environment improvement projects (wastewater treatment plant, solid waste management, solid waste disposal treatment plan and Hoa Lien water supply plant)

(iii) Program 3: Development of integrated Danang port system (Lien Chieu and Tien Sa ports)

(iv) Program 4: Develop new CBDs and retrofit existing CBDs

(v) Program 5: Develop mixed used multifunctional new town(s)

(vi) Program 6: Strengthen natural disaster management system

Cross-cutting Actions

(i) Cross-cutting Action 1: Elaborate integrated sustainable urban development

(ii) Cross-cutting Action 2: Draw up new industrial development strategies

(iii) Cross-cutting Action 3: Redefine “Environment City of Danang” and formulate an integrated strategic plan for a new “Environment City” manifesto

(iv) Cross-cutting Action 4: Build a sustainable funding mechanism and an infrastructure development approach

(v) Cross-cutting Action 5: Establish a comprehensive human resource development

(vi) Cross-cutting Action 6: Strengthen land-use and development control

2) Points Agreed Upon

2.10 Based on the major points discussed during the second Danang Urban Development Forum, the participants agreed upon several points, as follows:

(a) Suggested Approach toward Sustainable and Environment City

- Necessity of promoting more compact urban areas; how to manage the expansion of urban area in more effective manner.
- Necessity of promoting industries with comparative advantages.
- Necessity of the development of transit network with TOD.
- Necessity of developing strategic growth centers, such as High-tech Park, retrofitted CBD, new CBD, new towns and gateway (port and airport).
- Necessity of the implementation of comprehensive environmental management.
- Necessity of strengthening regional integration (metropolitan Danang, CFEZ, GMS and the rest of the world).
- Necessity of enhancing and strengthening urban planning and management capacity.
- Necessity of strengthening the involvement of the central government to the development of Danang, which is the growth engine of CFEZ.

- Necessity of expanding private sector participation.

(b) Effective Financial Management

- Necessity of formulating a mid and long-term fiscal plan for infrastructure investments.
- Necessity of formulating an investment plan to have better linkage between development goal and investment plan.
- Necessity of considering life cycle costs, including operation and management (O&M) from the initial investment period.
- Necessity of drawing up an appropriate investment procedure and monitoring framework to increase the borrowing capacity and assure financial health.

(c) Development of Infrastructure Projects based on PPP Scheme

- Necessity of practical experience and understanding of a variety of different project structures, technologies and risk allocations are required for public officials who are in charge for PPP project scheme.
- Necessity of developing a risk allocation guideline for PPP scheme projects.

(d) Action Plan for Sustainable Development of Danang City

- Priority programs and cross-cutting actions were proposed and agreed upon by the stakeholders in the following order. The main coordinating agencies for the respective actions and programs were assigned, as well.

  Programs

  (i) Promote and accelerate environment improvement projects (DOC)
  (ii) Development of integrated Danang port system (DOT)
  (iii) Development of a competitive public transport network (DOT)
  (iv) Develop new CBDs and retrofit existing CBDs (DOC)
  (v) Develop mixed used multifunctional new town(s) (DOC)
  (vi) Strengthen natural disaster management system (DONRE)

  Cross-cutting Actions

  (i) Elaborate integrated sustainable urban development (DPI)
  (ii) Draw up new industrial development strategies (DPI)
  (iii) Update “Environment City of Danang” and formulate an integrated strategic plan for a new “Environment City” manifesto (DONRE)
  (iv) Build a sustainable funding mechanism and an infrastructure development approach (DOF and DPI)
  (v) Establish a comprehensive human resource development system (Center for Promotion of Human Resources Development)
  (vi) Strengthen land-use and development control (Land Fund Development Center under DONRE)

2.11 **Action Plan:** The Action Plan, which comprises six cross-cutting actions and six programs, were presented by the JICA Study Team (see Table 2.3.1). At the forum, Danang side commented the order of priority and main coordinating agency for respective action. Danang, CoY and JICA agreed on the basic framework of the action plan. The three parties also agreed to further elaborate the subcomponents proposed in the action plan, in

terms of order of priority, financial resources, cost estimates, and time frame of implementation, all of which would be discussed in the next forum.

Table 2.3.1 Action Plan (1st Draft)

Cross-cutting Action	Coordinating Agency
1. Elaborate Integrated and Sustainable Urban Development Strategies: Based on the existing urban development master plan, sectoral plans, Environment City Plan, and the vision of new economic development strategies, which are to be a driving force of Central Focal Economic Zone (CFEZ) and a metropolitan city in the central region, tangible integrated and sustainable urban development strategies shall be elaborated.	• Department of Planning and Investment (DPI)
2. Draw up New Industrial Development Strategies: Create employment for a city with 2–2.5 million population, develop strategies and stimulate globally and domestically competitive new industries, such as tourism, high-quality medical care, services, high-tech & Research and Development (R&D), Information Technology (IT), environment, Meeting, Incentive, Conference and Exhibition (MICE) education & human resource development It is also vital to empower and stimulate Small and Medium Enterprises (SMEs) and supporting industries. Vitalize local economy by empowering SMEs, encourage economic diversification, and take necessary measures for expanding labor market.	• DPI
3. Update "Environment City of Danang" and Formulate an Integrated Strategic Plan for a new "Environment City" Manifesto: Update the "Building Danang – An Environment City" in accordance with Decision No. 41/2008/QD-UBND, 21st August 2008 and Decision No. 5182/QĐ-UBND, 4th August 2014, and promote advanced and proactive policies and measures, as well as a tangible plan beyond 2030. In addition, formulate an environment protection plan based on the Environmental Protection Law.	• Department of Natural Resources and Environment (DONRE)
4. Build a Sustainable Funding Mechanism and an Infrastructure Development Approach: In response to an increase in infrastructure development needs, effectively take advantage of fiscal funds. Formulate a long-term financial plan, effective investment plan, and an efficient financing plan to build a sustainable financial management system. In addition, to promote infrastructure development by utilizing private funds and know-how. As well as carry out the formation of a bankable public-private partnership (PPP) project, carry out capacity building so that Danang People's Committee will be able to evaluate, appraise, screen proposals on PPP projects.	• Department of Finance (DOF) • DPI
5. Establish a Comprehensive Human Resource Development System: Promote Danang City as a center of human resources development in Vietnam and also for GMS. As one of new pillar industrial development strategies, set capacity development of public sector, human resources development of private sectors, closely linked with new industrial development strategies, and develop integrated human resources development system in Danang City.	• Center for Promotion of Human Resources Dev't (CP-HRD)
6. Strengthen Land-use and Development Control: Strengthen administrative capacities and establish an effective institutional system to promote desirable land-use and urban development, and to prevent sprawl (unregulated low-density urban area expansion), which is a major obstacle against environmentally sustainable urban development, i.e. public transport based compact urban city with low carbon society.	• Land Fund Development Center (LFDC) under DONRE
Program	**Coordinating Agency**
1. Promote and Accelerate Environment Improvement Projects: Structure an environment improvement measures, taking existing and future urban area and land-use into consideration, and carry out such measures. Sub-components of the environment improvement primarily include drainage, sewage treatment and solid waste management including separate collection and treatment, and also include but not limited to, air, soil, noise, seawater, surface water, underground water, coastal area, eco-preservation, etc.	• Department of Construction (DOC)
2. Develop Integrated Danang Port System (Lien Chieu and Tien Sa Ports): Develop Lien Chieu port and Tien Sa port as international gateway of East-West Economic Corridor (EWEC), Greater Mekong Sub-region (GMS) and CFEZ. Building up integrated port development plan and cooperative mechanism for Lien Chieu logistics port, Tien Sa passenger terminal and Danang bay.	• Department of Transport (DOT)
3. Develop a Competitive Public Transport Network and Transit-oriented Development (TOD): Lay down policies and plans to develop compact, low carbon-emission and public transport based urban area. Cleary articulate functions of Urban Mass Rapid Transit (UMRT) and integrated urban development strategies for urban area. Strengthen connectivity, growth centers and promote integrated urban development with bordering area of Quang Nam province, i.e., the direction to Hoi An town, and Hue province.	• DOT
4. Develop New Central Business Districts (CBDs) and Renovate the Existing CBDs: Envision the city will be an international city with population at about 2–2.5 million, it is inevitable to develop new competitive CBDs. In conjunction with above, lay out and carry out new urban development strategies taking housings for low and middle income groups into consideration. At the same time, establish practical mechanism to preserve, improve and develop existing congested city center. Develop the City to be a smart city.	• DOC
5. Develop Mixed Used Multifunctional New Town(s): Carry out in conjunction with above 3 and 4, formulate plans to develop an integrated large-scaled new town at southern part of Danang City, bordering Quang Nam province, in order to deliver suitable living environment to anticipated ballooning population in near future.	• DOC
6. Strengthen Natural Disaster Management System: Conduct surveys and draw up preventive and mitigative plans to mitigate natural disaster risks (flooding, mudslide, typhoon, etc.) in existing and planned urban areas. Uphold plans and activities to strengthen disaster management system.	• DONRE

Source: JICA Study Team

2.12 **Institutional Rearrangement for Tripartite Cooperation:** Danang commented that it would adjust Executive Board and Tasks Board accordingly to manage the sustainable and integrated urban development efficiently. CoY also agreed to assign bureaus in charge for actions and programs in the action plan, corresponding to the main coordinating agencies of Danang.

2.13 **Future Orientation of Economic Development:** Danang stressed that it had a geographical advantage to be a transit hub of GMS and CFEZ. The city has seaport, a gateway to EWEC1 and EWEC2, and the first-class international airport in the center of the city. Danang is not only a gateway for transport, but also for international submarine optic fiber, directly connected to Japan and ASEAN countries. It is considered one of advantages of Danang to develop the IT industry. Danang's statistics show the tourism sector, which is recently growing fast, accounts for 7.1% of the GRDP, while the IT industry accounts for 4.1%. Considering labor productivity per capita of IT industry is three folds compared to tourism industry, IT industry is truly promising industry for the city in the future. Thus, it was stressed at the forum that the city's economic development orientation, apart from tourism, was to promote the development of high-tech and IT industries. Although the city has strived to promote the High-tech Park to attract further FDI, it is not only envisioning the investment to the High-tech Park, but also to FPT town, IT Park and others where private enterprises are developing.

2.14 **Danang Integrated Port System:** In the past, JICA has supported many port projects and learned by experience that those ports have encountered difficulties because of inefficient operation system and less competitiveness with other ports in areas. Thus, regarding to the development of Lien Chieu port in connection with the expansion of Tien Sa port, JICA commented that a coordination mechanism as well as functional demarcation of two ports should be clarified first, considering the management of Tien Sa Port was privatized and currently managed by a private company.

2.4 Third Forum (31 August 2015)

2.15 The third forum was held in Yokohama on August 31. Prior to the forum, a delegation from Danang visited urban infrastructure in Yokohama. The delegation was led by the vice chairman of Danang's People Committee, consisting of 12 public officials and one person from public corporation, Danang Drainage and Wastewater Treatment Company.

2.16 The delegation was divided into three groups, urban planning, urban infrastructure and fiscal management. Three groups set out on tours where locations were selected based on the interest of the delegation and the action plan, such as public transport system, port, new town development, wastewater treatment plant and so on. During the site visits, the members of delegation raised questions and exchanged opinions with the officials assigned from CoY. They are all working-level officials from respective bureaus related to the sites, so the members of the delegation could gain more practical and closely related information to their daily works. The site visits were resulted in very fruitful experience for both sides and becomes a good implication for further elaborate the details of the action plan.

2.17 On the last day of the visit, CoY organized Y-PORT activity, "Public and Private Dialogue Session on Water Business," by inviting private companies in Yokohama to introduce current situation on water supply service delivery in Danang and to have opportunity for introducing themselves to the delegation.

2.18 The third forum was held after the Y-PORT activity. The forum aimed at further discuss about the action plan, i.e., subcomponents of respective actions which basic framework was agreed in the previous forum. The study team presented key strategies to promote sustainable development of Danang and action plans for urban development, fiscal management and PPP.

Table 2.4.1 List of Danang Delegation

Organization	Division	Title	Name
1. City 's People Committee	-	Vice Chairman	Mr. Nguyen Ngoc Tuan
2. Department of Planning and Investment	-	Director	Mr. Tran Van Son
3. Department of Foreign Affairs	-	Director	Mr. Luong Minh Sam
4. Danang Institute for Socio-Economics Development	-	Director	Mr. Nguyen Phu Thai
5. Department of Finance	-	Deputy Director	Mr. Pham Cu
6. Department of Construction	Planning Management and Urban Development Division	Head	Mr. Bui Huy Tri
7. Department of Planning and Investment	Foreign Economics Relation Division	Head	Ms. Le Thi Kim Phuong
8. Department of Planning and Investment	Capital Investment Division	Head	Ms. Dinh Thi Bich Lieu
9. Department of Natural Resources and Environment	Environment Protection Office	Head	Mr. Dang Quang Vinh
10. Department of Transport	Urban Transport Management Div.	Deputy Head	Mr. Ho Quang Vinh
11. City People's Committee Office	Urban Management Division	Deputy Head	Mr. Nguyen Hoang Viet
12. City People's Committee Office	Urban Management Division	Staff	Ms. Nguyen Thi Hong Hanh
13. Department of Construction	Infrastructure Management Division	Deputy Head	Mr. Tran Viet Dung
14. Danang Drainage and Wastewater Treatment Company	-	Director	Mr. Mai Ma

Source: JICA Study Team

Box 2.4.1 Program of the Third Danang Urban Development Forum

31 August 2015, Monday

Time	Program
13:15–13:30	Registration
13:30–13:40	Opening Speech: Mr. Nguyen Ngoc Tuan, Vice-chairman, Danang People's Committee, Danang City
13:40–13:50	Opening Speech: Mr. Makoto Sekiyama, Director General, International Affairs Bureau, City of Yokohama
13:50–14:30	Presentation (1): Action Plan (Urban Planning subcomponents and way forward): JICA Study Team
14:30–15:00	Presentation (2): Action Plan (Fiscal Management & PPP subcomponents and way forward): JICA Study Team
15:00–15:20	*Tea Break*
15:20–16:30	Q&A Session
16:30–16:40	Wrap-up: Way Forward: Mr. Nguyen Ngoc Tuan, Vice-chairman, Danang People's Committee, Danang City
16:40–16:50	Wrap-up: Way Forward: Mr. Hidetoshi Irigaki, Director General, Southeast Asia and Pacific Department, JICA
16:50–17:00	Closing Remarks: Mr. Tetsuya Nakajima, Executive Director, Development Cooperation, International Affairs Bureau, City of Yokohama

Source: JICA Study Team

1) Discussion Points

2.19 The major points discussed during the third Danang Urban Development Forum are the following:

(a) Approach toward Sustainable and Environment City

- Need for strengthening regional integration: Danang cannot grow alone to be a global city and CFEZ cannot grow without Danang either.
- Need for promoting development of compact and green growth city: Urban area has started to spread out to suburban, inefficient use of lands and decrease in green and open space are perceived, which leads to increasing risks against natural disasters and loss of eco-systems.
- Need for transforming existing monocentric urban structure to polycentric urban structure to relieve the stress of urban center's infrastructure and environment.
- Need to select types of industry with competitive edges in the region, Vietnam and Asia
- High opportunities for more expanded and diversified tourism development: Danang should tap its large potentials through diversification of activities.
- Need for more comprehensive approach to environmental management.
- Need for institutional development: It is needed to elaborate and/or update existing plans to integrate into strategies, and implement necessary institutional reform to materialize those strategies, in particular, strengthening capacities for planning and plan management are required.

(b) Fiscal Management and PPP

- Difficulty to have a mid and long-term fiscal plan because development goal and priority areas are defined annually by the DPC and affected by the development directions of the central government.
- Legal framework of budgeting makes less flexibility in planning of budget, and the budget amount for capital investment is limited compared to the demand.

- Because of recent increase in infrastructure investment and economic downturn since 2012, the budget for recurrent expenditure is getting tighter.
- Although the government stipulated new PPP decree, guidelines and practical administrative procedures for sub-national governments are not yet produced.
- Lack of practical experience and enough knowledge to access potential PPP projects.
- Typical risk allocation for respective infrastructure project is not set out

2) Points Agreed Upon

2.20 Based on the major points discussed during the third Danang Urban Development Forum, the participants agreed upon several points, as follows:

(a) **Short-term Priority Actions for sustainable and integrated urban development:** Short-term priority actions and action plans with sub-components were basically accepted to further elaborate by next forum.

- Environmental conditions upgrading
  (i) Wastewater infrastructure development in the east costal area
  (ii) Water supply plant development based on PPP
  (iii) Solid waste management program
- Upgrading of sustainable development planning capacity
  (i) Update of city development strategies and plans
  (ii) Institutional arrangement for strengthening regional and sectoral linkages
- Mobility improvement
  (i) Expansion of low-emission transport (EV, PHEV(Plug-in Highbred Electric Vehicle), etc.)
  (ii) Upgrading and expansion of public transport (BRT, bus, UMRT, etc.)
  (iii) Strengthening of traffic management
- Update of economic growth strategy
  (i) Expansion and diversification of tourism industry
  (ii) Maximization of the capacity of High-tech Park
  (iii) Strengthening of spatial management (land-use control, city center beatification, etc.)

(b) Short-term Priority Actions for Fiscal Management and PPP

- Necessity of practical experience and understanding of a variety of different project structures, technologies and risk allocations are required for public officials who are in charge for PPP project scheme.
  (i) Develop a long-term fiscal plan for strategic fiscal management
  (ii) Develop monitoring measures of creditworthiness
  (iii) Prioritize investment projects to meet city's development policies and needs
  (iv) Develop a financing plan with alternative source of funding
  (v) Develop effective tools for disclosure of appropriate financial information
- Necessity of developing a risk allocation guideline for PPP scheme projects.

- Allocate budget to PPP projects to fund a viability gap
- Discuss detailed funding structures with transaction advisor, whom recommended to hire

2.21 The presentation from the study team was affirmatively comprehended by all participants and the delegation stated that Danang accepted the revised action plan and requested to further elaborate in detail before it would be finalized in the last forum in December. It was also stated by the leader of the delegation that the priority short-term action plans, presented in this forum, Danang side recognized that study team has given the actions closed to reality, according to the city's study and plans. Also, the improvement of the environment is put on top priority and the set-out indicators are consistent with our expectations.

2.22 Danang side agreed to four issues and four short-term actions and agreed with the specific programs under the four short-term actions. However, comparing the short-term action plan with the major program, the construction of Lien Chieu Port was not included in the short-term action plan. Lien Chieu Port is located in a very favorable location for investment. The port city of Yokohama has a lot of experience in port construction. Lien Chieu Port is a relatively big project, so the government of Vietnam and Danang City have big responsibilities for building this port. Thus, Danang side suggested to include the feasibility study of Lien Chieu Port into short-term action plan, so that Danang would have a basis for stepping forward to formulating the port development plan.

2.23 Danang side also requested the study team to consider and propose timeframe, breakdown of plan, resources for implementation for the proposed short-term action plans. Consequently, the agencies in charge will coordinate closely with the study team to finalize the action plans.

2.24 The same was said by Japanese side. JICA stressed that what is important would be how to materialize the action plans. JICA already dispatched a team for a feasibility study on wastewater treatment project since July 2015. It is considered the first step to materialize the action plan. To continue the effort to realize the programs and projects in the action plan, as the leader of the delegation mentioned, it is important to set a tangible timeframe for the entire action plan as well as for each action, to identify necessary budget amount, taking into account the budgetary balance of the city and a mechanism to implement the action plan at the Danang government. Necessary actions are identified for the city's sustainable development and agreed by the city. JICA stated that it would prioritize potential areas where JICA could go forward to providing support in the future.

2.5 Fourth Forum (23 December 2015)

2.25 The last forum was held in Danang on the 23rd of December. Prior to the forum, officials of CoY who accepted the visit from Danang in August visited Danang for the first time. The delegation of CoY was led by the executive director of Development Cooperation Department, International Affairs Bureau, consisting of nine members.

2.26 On the first day, the members were divided into three groups and visited urban infrastructure and development areas in the city. The following day, based on the observation of urban infrastructure and exchange of opinions, the groups had thematic meetings, urban planning, port development and logistics, sewerage and solid waste management.

Table 2.5.1 List of the Delegation from CoY

Job title	Occupation
Executive Director	Development Cooperation Department International Affairs Bureau
Manager	Development Cooperation Division Development Cooperation Department International Affairs Bureau
Assistant Manager	Development Cooperation Division Development Cooperation Department International Affairs Bureau
Assistant Manager	Sewerage Project Coordination Division Sewerage Planning and Coordination Department. Environmental Planning Bureau
Assistant Manager	Resources and Waste Policy Division General Affairs Department Resources and Waste Recycling Bureau
Deputy Manager	Minato Mirai 21 Promotion Division City Center Redevelopment Department Urban Development Bureau
Assistant Manager	Planning and Coordination Division Planning and Coordination Department Port and Harbor Bureau
Deputy Manager	Business Development Division Growth Strategy Promotion Department Economic Affairs Bureau
Staff	Development Cooperation Division Development Cooperation Department International Affairs Bureau

Source: JICA Study Team

2.27 The last forum under the JICA study aimed at concluding the action plan and discussing further tripartite cooperation after the study period. The forum was attended by all city agencies which related to urban development, JICA, CoY and three private companies from Japan.

Box 2.5.1 Program of the Fourth Danang Urban Development Forum

23 December 2015, Wednesday

Time	Program
8:00–8:05	Introduction of participants
8:05–8:20	Opening speech: Mr. Nguyen Ngoc Tuan, Vice-chairman, Danang People's Committee, Danang City
8:20–8:40	Presentation of Action Plan Dr. Shizuo Iwata, Team Leader of the JICA Study Team
8:40–9:20	Keynote Speech: Mr. Tetsuya Nakajima, Executive Director of Development Cooperation, International Affairs Bureau, City of Yokohama
9:20–9:40	Proposal for further cooperation: Mr. Tran Van Son, Director of Danang Planning and Investment, Danang City
9:40–10:00	*Tea Break*
10:00–11:30	Q&A Session
11:30–11:40	Wrap-up: Way Forward: Mr. Tetsuya Nakajima, Executive Director of Development Cooperation, International Affairs Bureau, City of Yokohama
11:40–11:50	Wrap-up: Way Forward: Mr. Noriji Sakakura, Deputy General Director, Southeast Asia and Pacific Department, JICA
11:50–12:00	Closing remarks: Mr. Nguyen Ngoc Tuan, Vice-chairman of Danang People's Committee, Danang City

Source: JICA Study Team

1) Discussion Points

2.28 The major points discussed during the fourth Danang Urban Development Forum are the following:

(a) Regional Integration

- Danang to be the center of the central region and to function as the third major international gateway of the country, in terms of air, sea and land.
- Danang to strengthen connectivity in the CFEZ: transport, role-sharing among provinces for integrated regional development.

(b) Competitive Economic Development

- Danang to be an internationally competitive service center for CFEZ.
- Danang needs to establish conducive investment environment to promote industries with comparative advantages to HCMC and Hanoi regions.

(c) Sustainable Urban Development and Management

- Expansion of urban area to sustain 2 million people and much enhanced economic activities.
- Necessity to provide improved living conditions to citizens, especially for low-income group and visitors.
- Preparedness against natural hazard risks and pollutions.

(d) Sustainable Urban Development and Management

- City administration needs to strengthen urban planning and development management capacity.
- Municipal fiscal management and expanding opportunities and mechanism for PPP based infrastructure development.
- Further improvement in the investment environment to attract quality investments.

2) Points Agreed Upon

2.29 Based on the major points discussed during the fourth Danang Urban Development Forum, the participants agreed on several action plans, as follows:

- Update coordinated development strategies at national, provincial and city levels.
- Establish a development coordinating mechanism among provinces in CFEZ.
- Identify and elaborate potential functions of Danang as a regional service area.
- Promote new types of industry, such as eco-industries and business, smart city technologies and high-value added manufacturing.
- Develop expanded concepts on tourism
- Necessity of develop transit backbone (LRT, BRT)
- Necessity to develop new towns in integration with transit backbone
- Necessity of regenerating existing CBDs by improving resettlement and enhanced urban design
- Necessity of managing urban/rural landscape, including Han River and the coastal beach area
- Necessity of reorganizing the existing land use based on updated TOD based compact city concept
- Necessity of fostering regional coordination with neighboring provinces and with the CFEZ, by utilizing existing coordination mechanisms. (The current regional coordination mechanism is not well functioning since none of local government administration is taking an initiative to lead the coordination committee).
- Necessity of developing long-term municipal fiscal plan and management system
- Necessity of implementing PPP projects on pilot basis first and eventually scale up in compliance with formal institutions
- Necessity of formulating own development guidelines to permit development projects and to enhance overall values of urban lands and space
- Necessity of establishing knowledge exchange and technical assistance mechanism through partnership with other qualified cities, such as City of Yokohama

2.30 In his opening speech, the vice chairman of DPC mentioned that four strategic areas, redevelopment of urban area, solid waste management, port development and drainage and storm water management, were prioritized to set forward the development. These areas are considered to be the top priority of Danang's urban development by 2020. The vice chairman expressed that the action plans must be practical and tangible plans, and expected that JICA would support the technical cooperation between the two cities. He also expressed his expectation that CoY would dispatch an expert for enhancing the capacities of urban development planning and urban development management.

2.31 Regarding the development of Lien Chieu Port, Danang City will discuss with the central government about the demarcation of roles on the port development and clarify the related regulations. Danang City expects to keep working with CoY with a support from JICA to study for the development of the port. With regard to solid waste management, a PPP F/S has already completed, so Danang City expects further assistance from JICA to build a solid waste treatment plant under ODA scheme.

2.32 As for Hoa Lien water supply plant project, Danang City submitted an application for a grant for VGF to the ministry of foreign affairs in Japan. Danang City also expects technical assistance from CoY through Yokohama Water Co., Ltd. and a support from JICA to enhance the capacities to appraise and manage PPP projects.

2.33 Besides above, he expressed sustained cooperation from Japanese side regarding JCM project formulation on the upgrading pumping system of DAWACO's water purification plant, follow-up on the PPP feasibility study conducted by JICA for a solid waste treatment plant, and the expansion of cooperating areas and extension of MOU between two cities on technical cooperation.

2.34 In his keynote speech, the representative of CoY agreed the concept and direction of urban development of Danang, presented by the study team. He commented that a concept of compact city, in association with land-use control is very important, taking into account of the experience of CoY. Close linkage between railway development and urban core development, as well as TOD is essential concept for the development in the future in Danang. Thus, he stressed that the action plan, proposed by the study team, should come up with in tangible plans. He also stressed the cooperation and coordination among the related agencies and decisive leadership were important to get urban development forward.

2.35 In his presentation about the cooperation orientation for the future, the director of the DPI stated that the action plans would be a basis for Danang City to formulae a development orientation in the future and to have a clear plan to attract and promote the city to investors and donors, and to mobilize resources for the proposed programs and projects in the action plan. At the same time, he stressed that the action plan would be the basis for two cities to continue the cooperation in next three years, after the MOU is agreed in 2016.

2.36 He also expressed the expectation of Danang City on the following points; a) CoY and JICA would review and comment on a study report of Lien Chieu port, which Danang City has had already contracted out to a local consulting firm, b) Japanese side would support Danang City to formulate a project for an energy-from-waste facility using JCM scheme, c) Japanese side would keep supporting the on-going environment improvement study project funded by JICA, d) technical assistance on studying for MRT, building a system for landscape along the Han River and development of road network between Danang City and surrounding cities, e) various supports to develop SMEs, to enhance ICT industry, to promote High-tech park, to nurture component fabrication SMEs and to foster city-to-city cooperation between the two cities.

2.37 At the end of the forum, the representative of JICA made a speech to wrap up the forum. He introduced a nation-wide technical cooperation project for the capacity development for wastewater facility management. A new human resource development facility for wastewater business management is planned to be built in Hanoi, and it is intended that officials in charge for wastewater service will be able to receive training in that center in the future. He also mentioned that JICA would consider a probability of financial assistance toward Hoa Lien water supply project, once it is substantialized. As for port development, JICA will consider to support a feasibility study if Lien Chieu port is developed by a private investment and a request from Japanese enterprises are submitted. Yet, as mentioned in the past, Danang City needs to clarify the functional roles between two ports in Danang and to clarify who, either the MOT or Danang City, will be the main developer to develop the port. As mentioned several time in the past already, the first step is to coordinate with the MOT and the central government to clarify role demarcation and legal issues. At the end, he said that JICA intended to keep supporting Danang City in the abovementioned four fields, as discussed, with decisive support from CoY, and maybe other local governments in Japan which have wide-range of know-how and skills to be

useful for urban development and other issues

3 PROFILE OF DANANG CITY

3.1 Growth of Danang City

1) Brief Development History

3.1 Danang began as a small port town in the 16th century and gradually developed into a commercial port, which replaced Hoi An in the early 18th century when European shipbuilding was improved and large deep draught vessels could easily enter Danang Bay. By the early 20th century, Danang, then named Tourane, became one of the main trading centers in the country along with Hai Phong and Saigon.

3.2 After the retreat of the French forces in 1950, American marine units landed and started setting up a large military complex in 1965. American troops and the Saigon government built Danang as a political, military and cultural center. This led to the early development of major infrastructure such as roads, airport, and ports. The city gained complete independence in 1975 and officially became centrally governed in July 1996. Danang had a major development advancement in the 1990s and 2000s and turned into a first class city, and one of the five centrally controlled municipalities in Vietnam.

3.3 Danang city has been highly appreciated internationally as well as domestically in various aspects. The awards recently received were summarized as below. Danang has been recognized as one of the most accountable, environmentally managed, and competitive and beautiful tourist town in Vietnam (see Box 3.1.1).

Box 3.1.1 Ranking and Awards of Danang City

(i) No. 1 Provincial Competitive Index (PCI) from 2008 to 2010 and 2013 to 2014 based on the surveys of 9,859 private domestic businesses and 1,491 foreign-invested enterprises (FIEs), conducted by VCCI and USAID;

(ii) No.1 Provincial Governance and Public Administration Performance Index (PAPI) in 2015 measured by the participation of citizens on transparency, accountability, control of corruption, and provision of public services, conducted by the Vietnam Fatherland Front, CECODES and UNDP;

(iii) No.1 ICT Index (Indicators for the Readiness for the Development and Application of ICT In Vietnam) from 2012-2014 measured on infrastructure, human resources, IT application, production and institutions and policies;

(iv) Awarded as an ASEAN Environmentally Sustainable City in 2011;

(v) Selected as one of the 20 Low-carbon model cities by APEC energy meeting in 2012, owing to the four project proposals; battery powered bicycles, technologies to curb greenhouse gas emissions and to use renewable energy sources, a metro system (planned) and rapid bus transit (on-going);

(vi) Asian Townscape Award jointly with Hoi An by UN-Habitat Regional Office in Asia in 2013 in consideration of outstanding in landscape architecture; and

(vii) Selected as Top 10 attractive destinations in the region in 2014 by the Asian leading online tourism magazine, Smart Travel Asia,

Source: Formulated based on the various websites, and Danang City's information by the JICA Study Team

2) Socioeconomic Development

3.4 The population of Danang has been growing at about 2–2.5% /year during the last decades which is expected to grow at faster rate in the next decade. Compared to other cities in the country, Danang has a relatively affluent population and has a low poverty rate of 0.32% (0.18% in urban areas, 1.33% in rural areas) as of 2014. According to the HIS in DaCRISS, household sizes of the poorer were larger than the more affluent households, and infrastructure coverage and ownership of basic household goods were both substantially low.

3.5 The city has experienced drastic economic growth and structural change. The agriculture composed of over 20% of overall GRDP in 1976, decreased by nearly 2% in 2014. Service sector developed rapidly from contribution less than 50% of overall GRDP in 1976, and over 60% in 2014. Danang's export value has been significantly increasing as to over USD 1.1 billion in 2014. However, this was below the target turn over value of USD1.7 billion by 2010. The annual growth rate of Danang's GRDP is approximately over 10% in the past four decades, but the growth rate has been slightly decreased after 2010.

3.6 Unlike other major cities in Vietnam, the state sector had a large share in industrial production: 57% and employment: 40% in 2007 in Danang, while Hanoi's production: 31%, and employment: 31%, and HCMC's production: 32%, and employment: 10% respectively. Owing to restructuring the state industry, the percentage of state industry has been reduced in production: 30% and in employment: less than 20% in 2012 respectively[1]. Danang, core city of CFEZ is handicapped compared to Northern Focal Economic Zone (NFEZ) lead by Hanoi and Southern Focal Economic Zone (SFEZ) lead by HCMC in terms of market size, accumulation of industry and infrastructure. There is a widening gap among NFEZ, SFEZ, and CFEZ. Nonetheless, the CFEZ has to be another competitive edge of the nation.

Table 3.1.1 Key Socioeconomic Indicators

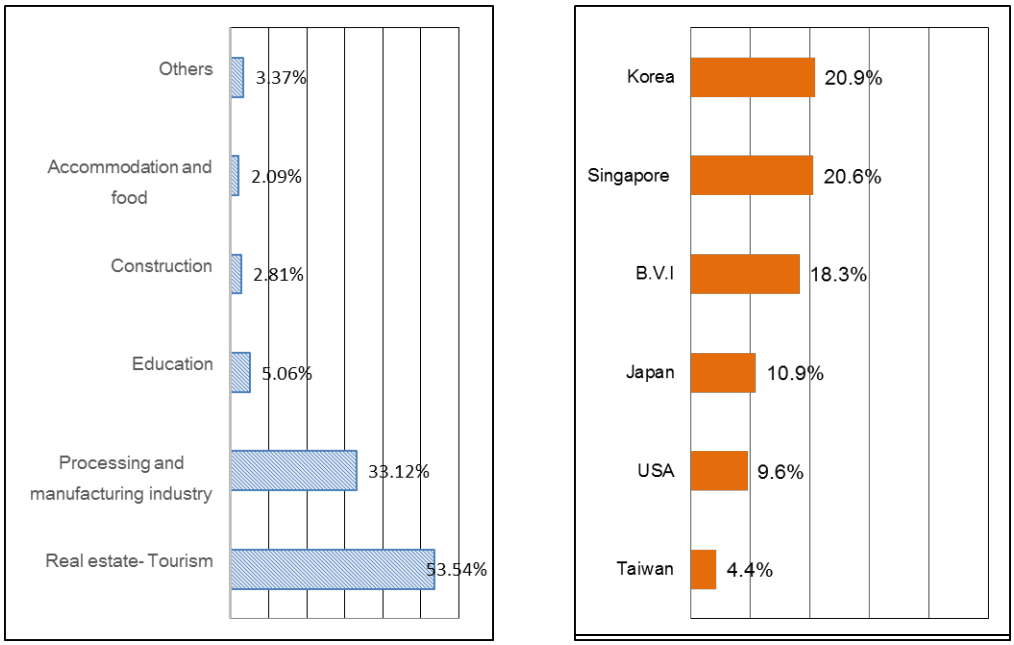
Indicator		Unit	1976	1997	2010	2013	2014
Population	Average Population	'000 person	453	672	926	993	1,008
	Average annual growth rate		-	1.90%	2.50%	2.36%	1.51%
	Unemployment rate	%	-	-	6.68%	3.58%	3.46%
	Poverty rate		-	-	8.74%	0.84%1)	0.32%
GRDP	GRDP at constant 2010 price	Bill. VND	983	7,617	28,923	38,183	41,900
	Compound annual growth rate	%	-	10.24%	10.81%	9.70%	9.73%
	GRDP at current prices	Bill. VND	0.248	3,209	28,923	46,821	52,600
	GRDP per capita at current prices	'000 VND	2.171	11,327	31,234	38,458	41,581
GRDP by sector	Agriculture, forestry and fishing	Bill. VND	205	749	867	996	937
	Industry and Construction	Bill. VND	317	2,602	11,655	13,788	15,254
	Services	Bill. VND	463	4,266	16,401	23,399	25,709
GRDP structure	Agriculture, forestry and fishing	%	20.85%	9.83%	3.00%	2.61%	2.24%
	Industry and Construction	%	32.25%	34.16%	40.30%	36.11%	36.41%
	Services	%	47.10%	56.01%	56.71%	61.28%	61.36%
GRDP annual growth rate	Agriculture, forestry and fishing	%	-	6.36%	1.13%	4.73%	-5.92%
	Industry and Construction	%	-	10.54%	12.23%	5.76%	10.63%
	Services	%	-	11.15%	10.91%	12.58%	9.87%
Development investment capital	Development investment capital at current prices	Bill. VND	-	1,625	22,380	29,842	32,782
	Average annual growth rate	%	-	-	22.35%	10.07%	9.85%
Value of Exported Goods	Value of Exported Goods	Mill. USD	2	155	634	1,019	1,126
	Compound annual growth rate		-	23.02%	11.44%	17.14%	10.50%
FDI	Number of FDI Projects (accumulated)		-	43	181	281	367
	Total registered (*) capital2)	Mill. USD	-	427.8	2,749.2	3,316.4	3,441.6
	Implemented capital in year	Mill. USD	-	22.6	286.0	246.4	155.5

Source: JICA Study Team
Note: 1) Data on 2012, 2) Including supplementary capital to licensed projects in previous years.

[1] Danang Statistical Yearbook 2013

3.7 The gross outputs of foreign direct investment (FDI) sector improved in 2010, 2011, but the growth slowed down significantly in recent years. More than half of FDI in Danang is for the real estate and tourism sector. Korea and Singapore are the top two investors as shown in the following figures.

Figure 3.1.1 FDI by Sector and Country / Region as of October 2015



Source: Danang Investment Promotion Center (IPC) BVI: British Virgin Islands

3) Environment and Disaster

3.8 Despite the effort to improve the environmental quality of Danang City, there are a number of environmental issues that are not fully resolved and exacerbated due to rapid urbanization and industrial development. The main concern for the future is environmental management. With a population estimated to reach 2.1 million by 2025, the promotion of sectors such as tourism, effects of further land reclamation, infrastructure construction, air pollution, among others, the potential major environmental issues that will surface are as follows:

(i) Domestic and industrial wastewater is responsible for degrading the rivers in Danang City. The water bodies are polluted from pollutants such as coliform, nitrogen and oil. In particular, the Phu Loc River has been seriously polluted, which resulted in serious claims from residents. Most of the ground water in the city is polluted with high levels of coliform. The overall quality of coastal water is still in good condition, but poor fishery villages near the eastern coast causes sanitary and pollution problems. Water resource conservation and management needs to be improved in order to meet future demand and requirements for a sustainable development;

(ii) Overall the air quality in Danang City is still clean. Carbon monoxide pollution has yet to occur. The dust concentration at some transport intersections in the center of Danang City is 2-3 times higher than the Viet Nam standard.

(iii) Solid waste management due to the fragile institutional arrangement opted for by URENCO due to the uncertainty of its financial resources;

(iv) Effects of land reclamation on the natural environment due to the development of infrastructure, tourism and service facilities, and housing; and

(v) Management of risks, particularly floods, and possibly the transportation of hazardous matters as well as noise pollution due to the expected increase in air traffic.

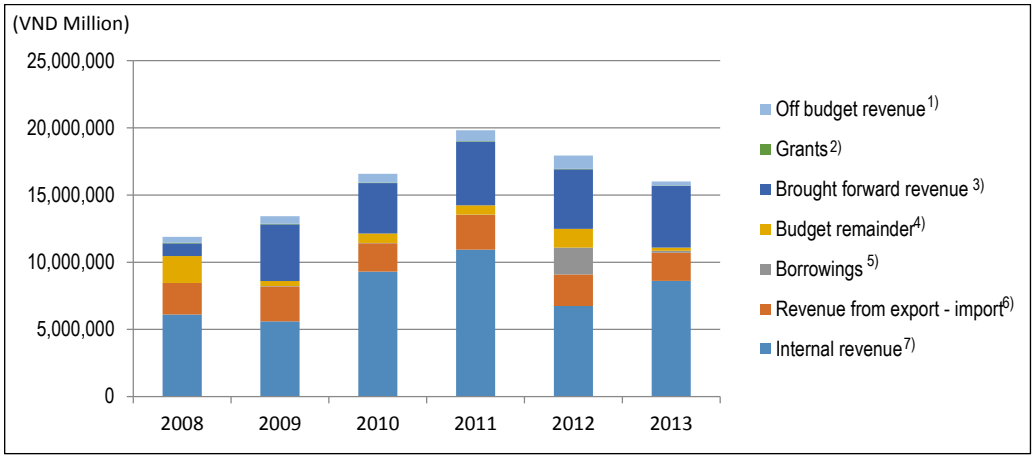
3.9 Danang is at risk from climate change impacts including in typhoons from the South China Sea with high tidal waves. The city is especially prone to increased annual droughts, flash floods in mountainous areas, coastal erosion, sea storms, saline intrusion, rising sea levels and more variable temperatures.

4) Municipal Finance

(a) Revenue

3.10 In recent years, total revenue in the area has been decreasing. Revenue dropped from VND 19,826 billion in 2011 to VND 16,016 billion in 2013. Of the total revenue, the internal revenue that comes from taxes, fees, and land remain to be the main source of budget revenue. However, the amount and its ratio to the total revenue fluctuate every year, which makes the total revenue of Danang City unstable.

Figure 3.1.2 Composition of Total Revenue in the Area (2008-2013)

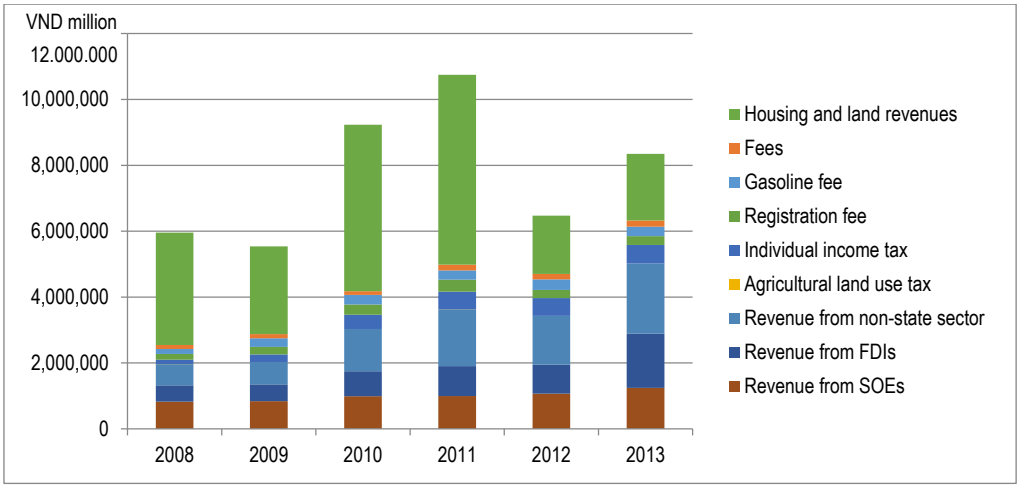


Source: Calculated based on DOF data
1) Off budget revenue: Tuition fee, health care fee, revenue from lottery and other fees
2) Grants: ODA from abroad
3) Brought forward revenue: Revenue that was not used and carried over from the previous year's budget.
4) Budget remainder: The remainder of the budget in the previous year.
5) Borrowings: Local bond and borrowing from central government
6) Revenue from export – import: Revenue on export/import taxes and belongs to central government
7) Internal revenue: Revenue from SOEs, FDIs and non-state sector, housing and land revenue and others

3.11 The main contributor in the total revenue is internal revenue. The largest item of the internal revenue is housing and land revenue that mainly comes from revenues in land sales (see Figure 3.1.3). It fluctuates depending on the economic situation, which results in difficulties in developing a stable budget in a long term. Internal revenue are shared between local and central governments by predetermined “sharing rate” which is kept stable for 3-5 years (known as a stability period). During the stability period of 2011-15, the sharing rate of 85:15 for Danang City and central government has been applied.

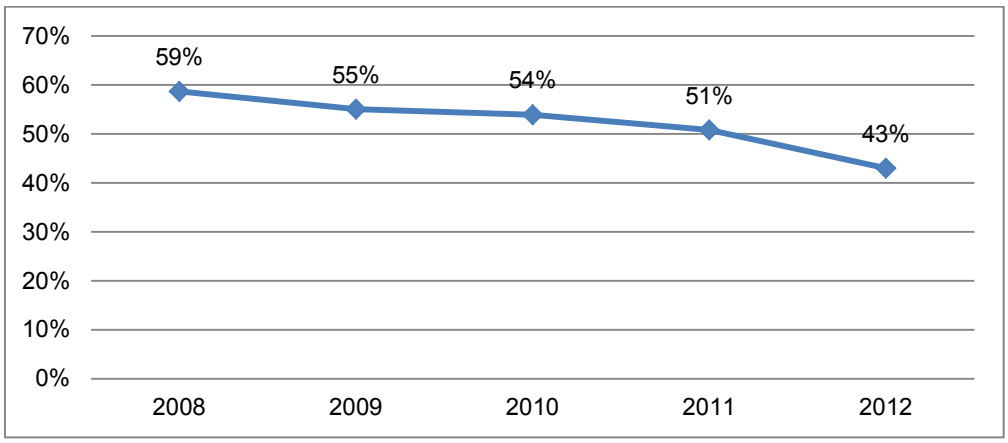
3.12 While the revenue of Danang City has increased in absolute value, its share to the GDP has decreased from 59% to 43% from 2008 to 2012 (see Figure 3.1.4). This is partly due to the tax reduction policy of the central government.

Figure 3.1.3 Composition of Internal Revenue (2008-2013)



Source : Calculated based on DOF data

Figure 3.1.4 Revenue as Share of GDP



Source : Calculated based on DOF data from 2008 to 2012

(b) Borrowings (Investment Mobilization)

3.13 Due to the real estate crisis, the decrease in land revenue directly affected the funds for developmental investment. Danang City had to look for other financing sources for its developmental needs.

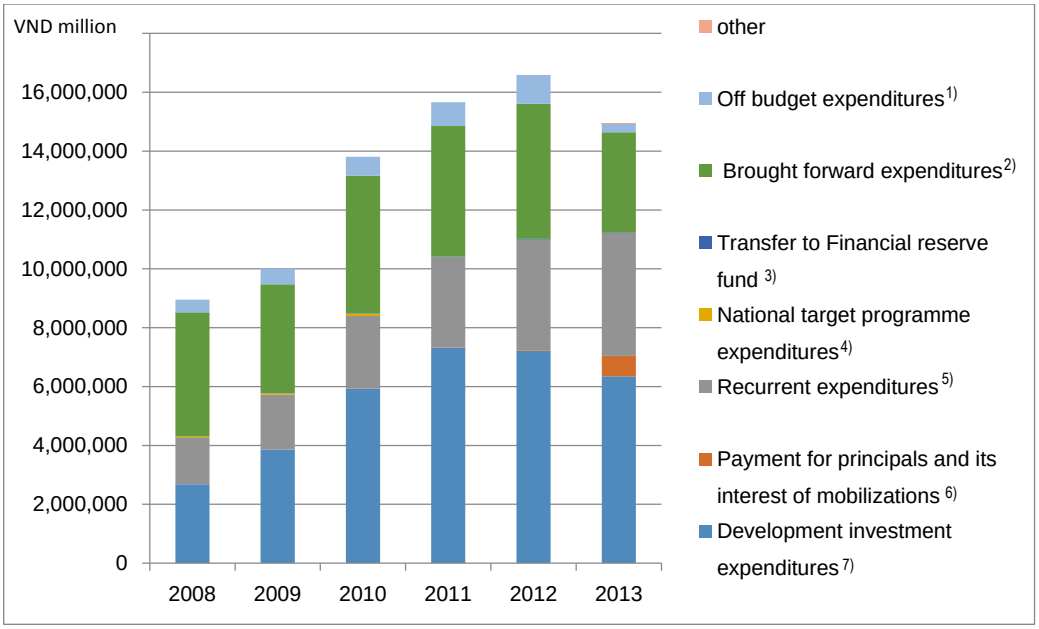
3.14 According to Article 8, Clause 3 of the State Budget Law (SBL), provinces and centrally controlled cities are allowed to raise capital in the domestic market, as long as it does not exceed 30% of its budget for annual construction capital. Meanwhile, Hanoi, Ho Chi Minh City and Danang City are exempted, and their limits are raised to 100%. Circular 34/2006 also states that Danang City can mobilize investment capital in the nation by issuing local bonds, and getting funds from the central government through the issuance of government bonds and other modes of financing as a source for developmental investment.

3.15 In 2012, Danang City successfully raised VND1,500 billion for investment in social welfare works. They issued a 5-year bond with an interest rate of 11% per annum. There are two investors that each holds VND 750 billion of the par value: Ocean Bank and Petro Vietnam Finance Company (PVFC) Vietnam. From 2013 to 2014, the city has made a total interest payment of VND 330 billion. In 2014, the local government bond, with a tenure of 5 years and a yield of 5.6%, was sold for VND1,100 billion.

(c) Expenditure

3.16 The development investment expenditure, which is applied to public investment, has the largest proportion in local budget expenditure. However, the proportion of development investment expenditure has fallen from 2011 to 2013. Meanwhile, the proportion of recurrent expenditures, which is applied to expenses in education, training, healthcare, welfare and other operating costs, has been growing year by year due to the need to cover the necessary expenditures for social policies and maintenance. In addition, the principal and interest payments are assumed to be growing, and will leave less room to increase or secure development investment expenditure in the future.

Figure 3.1.5 Budget Expenditure's Composition (2008-2013)

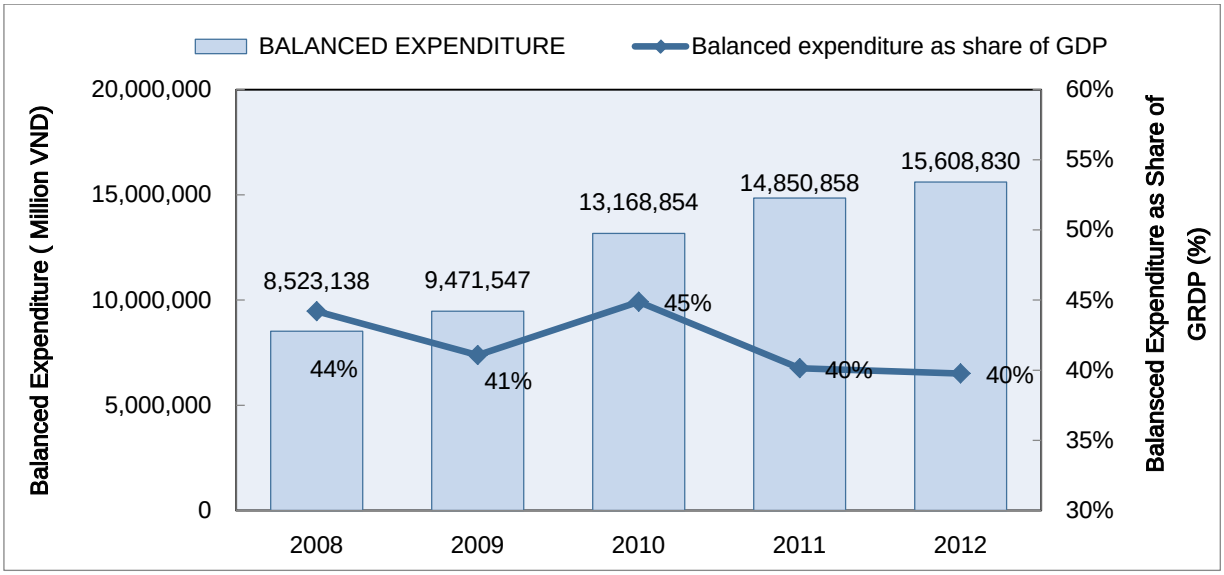


Source：Calculated based on DOF data

1) Off budget expenditures: Expenditure that is based on off budget revenue such as Tuition fee, health care fee, revenue from lottery and other off budget revenue,
2) Brought forward expenditures: Expenditures that is carried over from the previous year's budget,
3) Transfer to Financial reserve fund: Reserve amount for emergency,
4) National target program expenditures: Expenditure for National target program, which is authorized by Prime Minister. This program will be implemented by the ministries and the local government, and restrict overlapping actions to manage and effectively utilize the available funds,
5) Recurrent expenditures: Expenditures for education, training, health care, implementation of social welfare policy and other operating expenses;
6) Payment for principals and its interest of debts: Principals and interest payments and expenses relates to debts,
7) Development investment expenditures: Expenditures for public investment

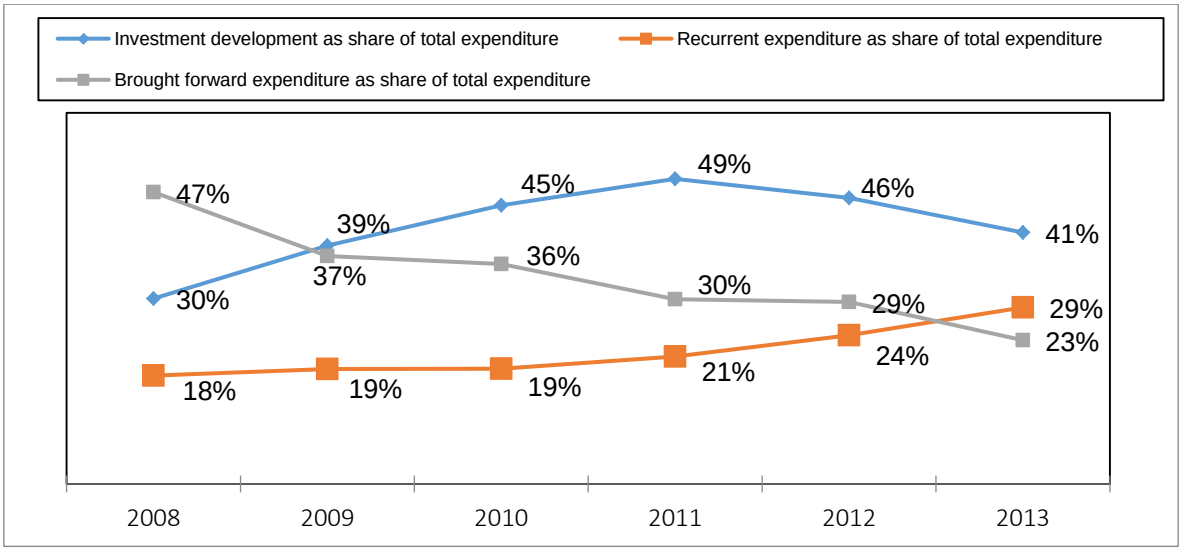
3.17 The total balanced expenditure in absolute numbers increased during the period, and its share of GDP was about 40-45%. The trend of the ratio of expenditure to GDP is similar to that of revenue since the financial management principle requires spending to be based on income and revenue.

Figure 3.1.6 Budget Expenditure



Source: Calculated based on DOF and GOS data

Figure 3.1.7 Composition of Expenditure as Share of Total Expenditure



Source: Calculated based on DOF data

3.18 Expenditure is mainly composed of investment development expenditure, recurrent expenditure, and brought forward expenditure[2]. Since investing in infrastructure is the first priority, investment development expenditure had the fastest growth rate from 30% of the total expenditure in 2008 to the highest of 49% in 2011. Danang City is developing into a modern city, and is expanding through new urban areas, new constructions, and infrastructure projects. For example, Danang City began with only 360 roads. It now has 1,500 named roads.

3.19 Recurrent expenditure growth has slightly increased its share of the total expenditure and covered the needs for social policies and maintenance. Recurrent expenditure for education and health care is prioritized and a limited amount is allocated to other public services.

[2] Brought forward expenditure: Carrying last year's expenditure over into this year's budget expenditure.

(d) Specific Mechanisms to Danang

3.20 The preferential financial and budgetary mechanisms is provided for Danang City[3] as summarized hereafter:

(i) The "sharing rate" was set at 85% for Danang for the stabilization period 2011-2015, i.e. 85% of the shared revenue remains at local level and constitutes the local budget share called "decentralized revenue", whereas 15% is transferred to the central budget (at central level).

(ii) Direct transfers from the central government correspond to targeted transfers for major projects/programs also referred to as National Target Programs (NTPs). The total amount of transfers basically depends on local budget and central budget financial capability; therefore it is not a predetermined figure.

(iii) Danang receives from the central Government a fixed percentage of 30% of the surplus annually (increased revenue generated at local level compared with the budget estimates), as a reward;

(iv) Danang may mobilize investment capital by issuing municipal bond[4] for development investment; the city shall pay principals, interests and related expenses.

(v) Danang may mobilize foreign loan capital for execution of major infrastructure projects that are to be funded on the city's budget. The PPC shall prepare a financing plan, seek loan sources, consult the MOF, the MPI and the State Bank of Vietnam (SBV) for the preparation of the loan contracts; the total debt balance of capital mobilized through the two above-mentioned forms must not exceed 30% of the city budget total capital for development investment.

(vi) Danang may provide low interest rates for organizations that borrow capital for investment in key projects capable of retrieving capital (investment in industrial parks, environmental, public sanitation and water drainage services, etc.). Specific levels of support and interest rates to be applicable to each organization and each project shall depend on the city budget's capability;

(vii) When allocating ODA capital to Danang, the central Government shall give priority to infrastructure projects incapable of retrieving capital;

(viii) For efficient use of land funds managed by the city, Danang PC may advance capital from the city budget and mobilize capital sources (municipal bonds and other mobilized sources) for infrastructure construction projects and for relocation of production and business establishments to the outskirts or into industrial parks of the city; and on that basis, to auction land-use rights or public property to generate capital for development investment;

(ix) The proceeds from the auction of land-use rights shall be used for repayment of capital advanced from the city budget and mobilized capital sources (municipal bonds for example).

[3] The Decision 13/2006/QD-TTg, of the Government and the related Circular 34/2006/TT-BTC of the MOF
[4] Circular 34/2006/TT-BTC

(e) Summary of Danang Fiscal Status

3.21 Despite its status of centrally-run urban center, Danang has no more authority than other local governments in fiscal policy. Revenue composition – tax and non tax revenue sources –, expenditure assignments and revenue sharing between the central and provincial levels are entirely decided at central level, whereas Danang has autonomy to determine such relationships with administrative sublevels (districts, wards and communes). The fiscal decentralization mostly concerns the lowest administrative levels. People's Committees of district and wards have autonomy in allocating the distributed budget. Similarly to other provincial governments, Danang's autonomy lies in particular in expenditure responsibilities (IMF, 2014). The local government plays a key role in public service delivery.

3.22 Among Vietnam's 63 cities/provinces of Vietnam Danang is also one of the only ones (out of 11 in total) that have succeeded in generating a "surplus" in revenue collected locally and transferred to the central budget compared to budget estimates. Danang has received a reward representing 30% of this surplus under the provisions of the law in force.

3.23 Danang is also one of the 4 provinces/cities that have issued local bonds since 2012 and the issuance of the related regulatory framework (Circular 81/2012/TT-BTC). Danang successfully raised VND1,500 billion in 2012 (USD 69,500,000) for investment in socio-economic development projects. Each bond has a 5-year term, and the interest rate is 11% per annum.

3.24 The estimated main trend of the fiscal situation in Danang City is listed below:

(i) The total local budget revenue is expected to be stable in spite of economic growth in the city.

(ii) The recurrent expenditure will increase steadily, and it will be difficult for Danang City to secure necessary development investment expenditures.

(iii) Payments on the principal and interest of bonds will be expected to grow due to the increase in the balance of bonds.

(iv) In terms of raising funds from the capital markets, fiscal data and information are not sufficient. In this situation, it is difficult for investors to assess the flow and the stock of assets and liabilities to ensure the fiscal resources.

3.25 In parallel of revising the 2002 State Budget Law (SBL)[5], Danang has proposed to Prime Minister a new decree on special financial mechanisms for investment, finance, and budget and management decentralization for the city. After MOF's submission of the proposal to Prime Minister, it needs to be approved at the National Assembly. The reasons justifying this request are to increase the "breakthrough" to promote socio economic development of the city and to create conditions for the city to become one of the country's major cities.

3.26 In this proposal, Danang PC requested to mobilizing domestic investment and funding support from the central budget. The proposals are;

(i) The total outstanding balance of the mobilized funds should not exceed 100% of the total investment capital budget estimates under the City People's Council decided annually.

[5] The Law on State Budget No. 01/2002/QH11, also referred to as the 2002 SBLs the key legal document regulating public finance management in Vietnam. The revised New State Budget Law will be in effect from the budget year of 2017

(ii) Central government prioritizes partial support from the central budget funds to the city budget to projects implemented in the form of PPP which serves for the region, locates in the city area.

(iii) Central government prioritizes allocating sufficient additional targeted funds for the city budget to implement City's socio-economic development projects and projects for Central and Central Highlands regions.

3.27 The city also proposed other preferential financial mechanisms allowing Danang PC to generate more revenue including:

(i) Raise the reward from 30% to 70% of the surplus generated by collecting exceeding taxes locally compared to the budget.

(ii) Additional targeted funds will be used by the city for payment for previous debt of the construction projects, the infrastructures projects, and the High-Tech Zone of Danang City.

3.28 The more detail of financial and fiscal management of Danang city is elaborated in the Appendix 3.

(f) Financing Strategy under PPP scheme

3.29 Central government released Decree No. 15/2015/ND-CP Public Private Partnership Investment Form, or the "New PPP Decree", in February 14, 2015. It took effect on April 10, 2015. After "New PPP Decree" took effect, DPC issued the list of candidate PPP investment projects on November 27, 2015. Danang City identified 19 candidates for the PPP project. In this list, there are many projects in which Pre-FSs have not been finalized yet, so all of projects may not be approved to implement by DPC and the related ministries. In addition, some projects might be too small to be structured as PPP projects. From the long list of candidate projects, it is important for Danang city to identify priority projects. Through implementing priority projects, Danang city is expected to accumulate the experience and know-how of PPP. These candidates are explained as follows:

Table 3.1.2 19 Candidates for the PPP Project

No.	Projects/Programs	Scope of investment	Proposed by	Total Investment Capital (Estimate) VND	Contracting Type
1	Industrial Waste Water Treatment System in Hoa Khanh IZ	• Replace the existing concrete sewerage network by DHPE pipeline with total length of 7.825.36m. • Upgrade the centralized waste water treatment plant to capacity 50.000m3/day.	PMU of Exports & Processing Zones	500 billion	BOT or O&M
2	Hoa Lien WTP	• Construction of Hoa Lien WTP with capacity of 120.000m3/day and construction of raw water pipeline	DAWACO	2,385 billion	BOT
3	North-West Axis Road	• Construction of this road will connect and complete the regional transport network by road in accordance with the approved master plan.	DOT	371 billion	BT
4	Road and Bridge over Co Do River.	• This road once completed will connect to Nguyen Tri Phuong Str., running to Hoa Quy ward under PIIP project, finishing at Truong Sa Str., which creates the main Est-West Axis to promote urban development towards South East of the city.	DOT	207 billion	BT
5	Trung Hoa WTP	• Construction of WTP with capacity of 10.000m3/day on a 10.000m2 area to provide	Hi-tech park PMU	54 billion	BOT

No.	Projects/Programs	Scope of investment	Proposed by	Total Investment Capital (Estimate) VND	Contracting Type
		water supply to Hi tech park and surrounding areas sustainably.			
6	Lien Chieu Port	• Construct container wharf 30,000 DWT, 250m long, 9m deep; construct cargo wharf of 10,000 DWT, 320m long, 7.5m deep.	DOT	4.000 billion	O&M or BOT
7	Soft-Tech Park No.2	• Construction of basic infrastructure for the Soft Tech Park.	DIC	2.828 billion	BOT
8	Poultry and agricultural Products market	• Create a trading place for poultry and agricultural products in Danang city; in order to eliminate the chaotic trading situation at slaughter-houses.	DoTC	668 billion	BOT
9	Solid Waste Management in Danang City	• Construct a solid waste treatment plant using incineration technology for electricity generation, capacity: 1500 tons/day, meeting the demand once Khanh Son landfill becomes overloaded.	URENCO	2,200 billion	BOT
10	Septic tank sludge treatment	• Construct a sludge treatment plant with a capacity of 500 m3 / day, using anaerobic technology, sludge drying machines. Outputs of the project is dry sludge, which is buried, used as fertilizer or burned into ash that can be used to produce building materials and methane, which is used to produce bioelectricity (if additional treatment on organic waste is processed).	URENCO	134 billion	BTL
11	Ngu Hanh Son Historical & Cultural Park	• Construct a spiritual, cultural and historical park combined with commercial services; create a tourist, entertainment attraction; promote the value of traditional stone village of Non Nuoc, cultural historical values of Ngu Hanh Son; meet the demand for entertainment of local people and visitors. • Landuse area: 92,46 ha in Hoa Hai ward, Ngu Hanh Son district.	DoCST	2,000 billion	BT
12	Telecommunication cable duct network	• Construct technical/utility duct and install cables along theroads as a part of the effort toundergrounding cablings along key roads of the city	DIC	90.3 billion	BOT
13	Tourist Destination	• Construct a tourist destination for sight-seeing, shopping and entertainment for local people and visitors; create a signature and incentive for tourism development of the city. • Landuse area: 6.100 m2 in Hoa Hiep Bac ward, Lien Chieu District.	DoCST	50 billion	BT
14	Smart Parking System	• The project will pilot investment on smart parking facility with fee collection in some city center areas in 2016 and expanding throughout the city in the following years.	DIC	23 billion	BOT
15	The City Theatre	• Construct a theatre where art performance by domestic and international delegations can be organized. • Traditional art performance can be promoted and organized to meet the entertainment need of local people • Art performance, competitions during Tet	DoCST	150 billion	BOT

No.	Projects/Programs	Scope of investment	Proposed by	Total Investment Capital (Estimate) VND	Contracting Type
		holidays or other holidays can be organized; hotels and other services facilities within areas under administration of the theatres authority. • Capacity: 3.000-5.000 seats, big hall, technical – admin area, outdoor stage, parking space, green space and other facilities.			
16	Medical Diagnosis Center	• Promote and apply new and advanced technologies in medical diagnosis and treatment for the people in Danang City.	DoH	400 billion	BTL
17	Hospital (Odonto & Stomatology)	• Meet the increasing demand for treatment of odonto &stomatology diseases of local people of Danang and from neighboring provinces and cities.	DoH	100 billion	BTL
18	Geriatric and endocrinology hospital	• To be a leading medical facility in treating and nursing elderly people, including treatment and rehabilitation for elderly people.	DoH	200 billion	BTL
19	Training Center as a part of High-Tech Park in Danang	• Construct a training center that train and develop human resources for high-tech sectors, providing qualified human resources for the HT Park.	Hi-tech park's PMU	110 billion	BOT

Source: JICA Study Team based on List of Candidate PPP Investment Projects in Danang City (9361./UBND-QLDT)

3.30 Among them, five projects are extracted by setting a priority in solving environmental issues: (i) Hoa Lien water supply plant, (ii) solid waste management, (iii) industrial waste water treatment system, (iv) Lien Chieu port and (v) septic tank sludge treatment. The study team summarized these projects and clarified issues in implementing those projects in the Appendix 3.

3.2 Development Orientation of City Plans

1) Main City Plans

3.31 The exponential expansion of the city has caused negative impacts on the natural and social environment. This has led to uncontrolled development at the urban center, and a deficiency in necessary economic and social infrastructure developments. This deficiency is deemed to be one of the obstructive factors in proper economic and social development. In 2010, the Japan International Cooperation Agency (JICA) completed the "Study on Integrated Development Strategy for Danang City and Its Neighboring Area in the Socialist Republic of Vietnam (DaCRISS). Danang City has incorporated this in its Socio-Economic Development Plan (SEDP) and continues to strive for developing urban infrastructure.

3.32 It is necessary that Danang City vigorously aim for a sweeping and cross-sectional urban development to make the city attractive to domestic and foreign investors, and to make it a livable and advanced urban city. In order to keep sustainable development, the city government needs to uphold the urban infrastructure development according to its SEDP and DaCRISS. It should be emphasized that an effective utilization of private capital will be a fundamental issue for the infrastructure development in the near future, whereas a PPP approach has been vigorously proposed for infrastructure development in recent years[6].

3.33 World Bank has also been active from early times as well, with many influential projects such as Priority Infrastructure Investment Project (PIIP) from 2008-2013, followed up by the Sustainable City Development Project (SCDP) from 2013-2019. More sector-specific projects include the Assessment of Housing for Low-income Groups (LIHAS) by the WB and the Environmentally and Climate Urban Development for Danang City Project (ECUD) by GIZ which has launched the updated Environmental City Report with DONRE. For transport, GIZ (then KfW) has been active in bus development and the WB has committed to a Bus Rapid Transit (BRT) project in the city. AfD (undertaking the Danang Local Climate Change Strategy component of the SP-RCC) and the Rockefeller Foundation (undertaking the ACCCRN project) have also been operating in the city in relation to climate change projects.

[6] 9361./UBND-QLDT, November 2015, Danang City

Table 3.2.1 Main City Plans Formulated in Danang City

Plan		2001–2010	2011–Present
City Plans	SEDP	• '05 5yr SEDP • '08 5yr SEDP	• '10 SEDP ('20, '30) • '10 5yr SEDP ('11–'15)
	Construction Plan	• '02 Amendment ('20)	• '13 Amendment ('30, '50)
	Land Use Plan	• '06 LUP ('20)	
	Transportation Plan		• '14 Transport Development Plan
	Environment Plan	• '00 Environment Strategy ('10, '20) • '07 Environment City	• '14 Roadmap Environment City
Related Regional Plan	Regional Development	• '04 LIHAS • '08 PIIP • '08DaCRISS	
	Transportation	• '99 DPIP	• '12 Urban Transport Master Plan in 2020 with the vision of 2030 (WB)
	Environment	• '09 ACCCRN • '09 ECUD • '10 SP-RCC	• '13 SCDP (WB)

Source: JICA Study Team
Note: Figures in parenthesis indicate the (target year, (vision year))
DPIP: Danang Port Improvement Project (JICA)
PIIP: Priority Infrastructure Investment Project (WB)
LIHAS: Assessment of Housing for Low-income Groups (WB)
DaCRISS: The Study on the Integrated Development Strategy for Danang City and It Neighboring Area (JICA)
SCDP: Sustainable City Development Project (WB)
ECUD: Environmentally and Climate Urban Development for Danang City Project (GIZ)
ACCCRN: Asian Cities Climate Change Resilience Network (Rockefeller Foundation)
SP-RCC: Support Program to Respond to Climate Change (AfD)

2) Orientation of Current Danang City Plans

3.34 The SEDP and General Master Plan (M/P) are two upper level plans of the city. They refer to the central regional plans developed by the central government such as Coastal Economic Zone Development Plan to 2020 and Socioeconomic Development Plan of Central Focal Economic Zone (CFEZ) to 2020 and Vision to 2030.

3.35 Besides the DaCRISS project, there was no comprehensive urban master plan formulated by international donors, while project-base projects were carried out mostly in water, sanitation, education and health sectors. Thus, DaCRISS provided the main contribution to and influenced urban planning in Danang City.

3.36 Danang City has reviewed and incorporated these outputs into their socioeconomic development plans and the amendment of (M/P) to Year 2030 and Vision to 2050. The city predicts its population will be 2 million by 2020. It also takes the concepts of spatial structure of the city and transportation network including the necessity of public transport including a mass transit network.

3.37 Danang City foresees the development of the city to a major economic center in the central region and also by the country in2025. The city will focus on service sector and information technology as its core industries. In terms of environment, the city formulated the roadmap "Building Danang – an Environment City by Year 2020," which stipulates the key environmental indicators to be reached by 2020.

3.38 The major indicators set for the next 10 years are:

(i) GRDP (at constant 2010 prices): 6–8% per year;
(ii) GRDP per capita by 2020: 4,500–5,000 USD;
(iii) Service sector growth rate: 13–14% per year;
(iv) Industry and construction growth rate: 8–9% per year (where industry 10–11%);
(v) Budget revenue increase rate: 5–6% per year;
(vi) Investment for development: 10–11% per year;
(vii) New job opportunity: 33,000 jobs per year;
(viii) Poverty ratio (new city poverty line7): 2.32%;
(ix) Clean water accessibility in urban and rural areas: 100%; and
(x) Solid waste collection and treatment coverage: 100%.

3.39 The orientations, tasks and measures include the following:

(i) Enhancing economic growth quality and scale
- Enhance capacity of governance and leadership
- Make use of potentials, advantages to carry out economic restructure towards quality improvement, competitiveness and effectiveness improvement and to strive for economic growth rate of 6-8% per year
- Delivery tangible and solid policies and institutional framework to attract investments and, to mobilize resources for economic development and to strengthen integration with global market
- Strengthen sustainable fiscal management

(ii) Strengthen urban planning and management, investment in urban infrastructure development and develop Danang City to be Environment City

(iii) Develop the City to be a cultural and social center
- Strengthen cultural value in the society and focus on cultural development
- Develop education and training facilities, in particular, to improve the quality and competence of human resources
- Enhance the living environment and develop science, technology, healthcare, sport, social welfare sectors

(iv) Strengthen public security and defense and stabilize politics and social orders

Table 3.2.2 Key Performance Indicators: Social and Economic Condition

Indicator		2015	2025
Population	Total (000)	1,007 [1)]	2,100
	Urbanization rate (%)	87.3 [1)]	
	AGR (%, 5-year growth rate)	2.1 [1)]	5.5
	Poverty rate (%)	0.32	2.32 [2)]
GRDP	Per capita (USD)	2,671	4,500–5,000 [3)]
	AGR (%)	9.7	6-8
	Sector Structure (1, 2, 3)	2.4, 35.9, 61.6	1-3, 35–40, 60–65 [3)]

Source: Five-year Socio-economic Development Plan (2016-2020) of Danang City, Amendment of Master Plan of Danang City to Year 2030 with Vision to 2050, and other sources provided from Danang City.
[1)] Data for 2014
[2)] According to new poverty line: VND 800,000/person/month (rural) and VND 1 million/person/month (urban).
[3)] Target for 2020.

3.40 Roadmap "Building Danang – an Environment City by Year 2020" was formulated in 2014. The following table are the basic indicators of environmental factors. The report is first

[7] Poverty line is VND800,000 /person/month (rural) and VND 1 million/person/month (urban). Source: Five Year Socioeconomic Development Plan of Danang City (2016-2020). DPI. January 2015.

comprehensive study report reviewing the progress of the "Plan for "Building Danang – and Environmental City," promulgated by Decision No.41/2008/QD-UBND in August 2008. According to the latest update, water environment segment shows significant improvement, in particularly, households' accessibility to clean water. The accessibility in urban districts has improved from 57.4% to nearly 90%, and that in suburban increased rapidly from 4% to nearly 100%.

Table 3.2.3 Key Performance Indicators: Environment and Infrastructure

Indicator			2012/2013 [1]	Target 2020 [1]
Investment for Environmental Protection				>1.5% of GDP
Air and Noise Pollution	Air Pollution Index (API)			API < 100, measured by automatic stations
	Noise (db(A))	Residential Area	66.7	< 60
		Streets	74.2	< 75
	Factories with Air Pollution Control (%)			> 90
Open Space	Per-capita Urban Greenery at Urban Center (m^2/capita)		5.02	> 6–8
	Coverage of Natural Reserves (%)		46	50.6
Water Quality and Access	Access to Clean Water (%)	Urban Districts	89 [3]	> 100 [3]
		Suburban (Hoa Vang)	97.7 [3]	> 99 [3]
	Qualified Water Quality Source (River, Coast, Lake, Underground) (%)			100
	Treated Urban Domestic Water (%)			> 50
	Qualified Industrial Wastewater (%)			100
	Industrial Zones with Wastewater Treatment Systems (%)		83.3	100
	Households Connected to Sewerage Systems (%)		21	100
Soil/ Solid Waste Environment Quality and Access	Domestic Solid Waste Collection (%)		93	> 95
	Domestic Solid Waste Treated according to the Sanitation Standard			
	Reuse of Industrial Solid Wastes (%)		10	> 70, no discharging of toxic and hazardous waste
	Collection of Hazardous and Medical Waste (%)	Hazardous Waste	83.5	90
		Medical Hazardous Waste	97	-
		Industrial Hazardous Waste	70	-
	Solid Waste Treatment (%)	Hazardous Waste	80	90
		Medical Hazardous Waste	100	
		Industrial Hazardous Waste	100	

Source:
[1] Roadmap "Building Danang – an Environment City by Year 2020" DONRE. August 2014 with support from Project on "Development Danang, a Friendly City with Environment and Climate".
[2] Average Population by Sex and By Residence. Danang Statistical Yearbook 2013. Statistical Publishing House 2014
[3] Data source from Five-year Socio-economic Development Plan (2016-2020) of Danang City

3.41 Major transport mode is motorcycle and bicycle. Urban bus services are still limited. The main problems of the road transportation include: irregular primary roads and undeveloped public transportation system. Its inter-city system is composed of all modes of transportation including roads, rail, air, and shipping. Current status of the transportation is summarized as follows.

Table 3.2.4 Key Performance Indicators: Transport

Indicator			2015	2030
Modal share		Motorcycle: Car: Bus		50: 15: 35
Road	Road and bridges	Total extension (km)		
		Bridges (no.)	45	45 +
	Public transport	Central bus stations	2 (renovated)	2
		Total extension of mass-transit (km)	0	
Railway	Capacity	Passenger (trains/ day)	14	
		Cargo (trains/ day)	8	
	Stations	No. within the city	3	3
Traffic accidents		Road and railway (no./ year)	174	
Air	Accessibility	Distance of airport from city center (km)	5	5
	Destination	International, direct	12	
		Domestic, direct		
	Capacity	Passenger (million/ year)	4.5	6.0
		Cargo (million tons/ year)	0.4–1.0	0.2
Sea	Seaport	Total length of berths (m)	1,598	
		Maximum depth of berth (m)	12	
		No. of berths	10	
	Handling	Cargo ships (DWT)	< 50,000	
		Container ships (TEU)	< 2,500	
		Passenger ships (GRT)	< 75,000	

Source: Amendment of Master Plan of Danang City to Year 2030 with Vision to 2050, and other sources provided from Danang City.

3.3 External Assistance and City-to-city Cooperation

1) Cooperation with Donors

3.42 Danang received a number of external technical and financial assistance from international and bilateral donors for different sectors. JICA was one of the first bilateral donors to assist Danang in its development. The Danang Port Improvement Project in 1999 implemented by JICA was a milestone in its relationship with the city. The World Bank has also been active in the city early on with many influential projects such as the Priority Infrastructure Investment Project (PIIP) from 2008-2013, followed up by the Sustainable City Development Project (SCDP) from 2013-2019. JICA implemented the Study on Integrated Development Strategy for Danang City and Its Neighboring Areas (DaCRISS) in 2008-2010 and this has become the base for the recently updated construction plan of the city. Main activities are listed as follows:

(i) Danang Port Improvement Project (DPIP), JICA;
(ii) Priority Infrastructure Investment Project (PIIP), WB;
(iii) Assessment of Housing for Low-income Groups (LIHAS), WB;
(iv) The Study on the Integrated Development Strategy for Danang City and Its Neighboring Areas (DaCRISS), JICA;
(v) Sustainable City Development Project (SCDP), WB;
(vi) Environmentally and Climate Urban Development for Danang City Project (ECUD), GIZ;
(vii) Asian Cities Climate Change Resilience Network (ACCCRN), Rockefeller Foundation; and
(viii) Support Program to Respond to Climate Change (SP-RCC), AfD.

2) Municipal Cooperation of Danang City

3.43 Cooperation at city-to-city level is also actively undertaken. At present, Danang City has a total of 22 sister cities, as follows:

- Semarang, Indonesia
- Kawasaki, Japan
- Iwaki, Japan
- Shizuoka, Japan
- Kagoshima, Japan
- Okinawa, Japan
- Shandong, China
- Jiangsu, China
- Qingdao, China
- Macau, China
- Kaohsiung, Taiwan
- Hai Phong, Vietnam
- Oakland, California, USA
- Tacoma, Washington, USA
- San Francisco, USA
- Jersey City, New Jersey, USA
- Pittsburgh, USA
- Timisoara, Romania
- Newcastle, Australia
- Izmir, Turkey
- Yaroslavi, Russia
- Toluca, Mexico

3.44 Danang City is actively working in cooperation with 15 cities from 8 nations, of which 5 are Japanese cities. Major activities of these cities include personnel exchange, study tours and business match-making. Yokohama, Kawasaki, and Sakai have signed MOUs for enhanced future cooperation.

Table 3.3.1 Municipalities Working in Cooperation with Danang City

Country	City/ Prefecture	Scope of Cooperation
Japan	Yokohama	• Relationship established in April 2013 with the area of cooperation set in urban development. • "Tripartite Cooperation on Sustainable Development" between Danang, Yokohama, and JICA. • Business matching and investment promotion activities are organized in both cities that attracted many people. • Danang leaders and officials attended the annual Asia Smart City Conference • Joint Credit Mechanism (JCM) Feasibility Study through "Technical Cooperation for Sustainable Urban Development" in energy efficiency, water management, etc. • Agreement on the technical cooperation for water supply among Yokohama Waterworks Bureau, Danang Water Supply One Member Limited Company (Dawaco) and SAWACO, HueWACO, WSTC and CWCR concluded in July 2015 • Established the Danang Foreign Affairs Department Yokohama Office in 2015.
	Kawasaki	• Officially established relationship in October 2007. • In February 2012, two cities signed an MOU to promote cooperation in industries, port, and environment areas. • Danang leaders and officials attended "The Asia-Pacific Intellectual Forum" that is annually hosted by Kawasaki City.
	Sakai	• With the MOU signed in 2009, two cities focused on the cultural exchange including participating in the "Sakai ASEAN Week", the "People Ambassador Program" and the "Viet Nam-Japan Cultural Festival" organized in Danang.
	Nagasaki	• Short-term official personnel exchanges have been implemented since 2009 within the Nagasaki International Technical Training Program. Officials learned about the economics, culture and society of Japan. • The city also participated in the Viet Nam-Japan Cultural Festival organized in Danang in 2015.
	Mitsuke	• In 2005, two cities started the friendly and cooperative relationship with the homestay program for Mitsuke students. • The city also participated in the Viet Nam-Japan Cultural Festival organized in Danang in 2015.
Australia	Newcastle	• Relationship established in 2001, but the relationship was disrupted for a long time with no actual program being implemented.
China	Shandong	• Exchanging delegations between two localities. The identified areas of cooperation were education and tourism. • Some cities under the province like Qingdao also established relationship with Danang.
	Qingdao	• Cooperation in the tourism sector.
	Macau	• Sharing information about the cooperation programs between two cities.
Romania	Timisoara	• Exchanging invitation to two cities' international events.
Russia	Yaroslavl	• Exchanging political and business and press delegations. • Establishing products showrooms in each city.
United States	Oakland, California	• Cooperation in sea port area. Some companies from Oakland have investigated the investment environment in Danang.
	Pittsburgh, Pennsylvania	• A business delegation from Pittsburgh visited Danang in 2009 to learn about the city's business environment and seek business opportunities.
Sweden	Boras City	• 3-year cooperation in the environment: consulting Danang in waste management and planning. Danang City has sent officials to Boras to learn about the waste management system in Boras. • Cooperation expanded to universities of two cities.
Finland	Salo	• Capacity building program for trade officials and businesses. • Establishing products showroom in two cities. • Cooperation expanded to universities of two cities.

Source: JICA Study Team

4 IDENTIFIED MAIN URBAN ISSUES OF DANANG

4.1 Complexity of Urban Problems and Pressures on Urban Development

4.1 The complexity of urban problems manifests in the fact that one component induces another problem, and then another, eventually forming a negative chain of cause and effect. To illustrate, while the increase in population itself is not a problem, it can lead to pollution and worsening environment (caused by, for instance, lack of waste control). Sporadic urban development also worsens the environment, which is itself caused by weak and uncoordinated land use control. This eventually leads to urban sprawl; low accessibility, and increasing motorization (which normally implies more traffic congestion). And again, this and air pollution, as well as the destruction of nature to acquire more land for development, worsen the living environment. Weak and uncoordinated land use control also leads to the practice of converting land use to be able to sell them, which is a very unsustainable way to generate municipal revenue. Reliance on finite resources as a financial base decreases the overall city revenue and undermines the city's capacity to build infrastructure and deliver services.

4.2 The negative chain in the urban development process has been experienced in many large cities, including Hue and Hanoi in Vietnam, as well as in other cities in Asia. The situation is aggravated when rapid urbanization occurs together with motorization and economic growth, in which Danang finds itself now. In most cases, timely supply to satisfy demand fails due to such reasons as lack of funds, difficulty in land acquisition, lengthy time required for infrastructure construction, and inadequate planning, among others.

4.3 The major impacts and pressures on the urban development of Danang are as follows:

(i) Population increase mainly due to in-migration from other provinces;
(ii) Motorization, which shows in the further increase in motorcycle ownership and the gradual shift from motorcycles to cars;
(iii) Economic growth due to an increase in externally sourced investments and visitors due to the expanding movement of goods and people; and
(iv) Growing impact of climate change.

4.4 Urbanization in Vietnam, which commenced relatively late—in the late nineties—and which is still low at 33% compared to that in other countries in the region, is expected to accelerate in the next decades. Major movements of people will be from rural to urban and from small cities to larger ones, and Danang will be a major destination for many.

1) Population Growth and Migration

4.5 It is important to bear in mind that official figures are wont to underestimate urban populations. Official population counts generally do not include recent migrants to urban areas. Many migrants have temporary registration in urban areas or none at all, making enumeration difficult. Many of these rural–urban migrants travel between rural and urban areas often on a seasonal basis as employment opportunities or personal obligations occur. In HCMC, for example, a mid-term census found that temporary migrants (labeled KT4s) made up about 15% of the urban population. Unregistered migrants are likely to account for a higher share. Consultations with administrative officials in Danang City during DaCRISS suggest a similar pattern, with unenumerated migrants (both registered

temporary migrants and unregistered migrants) adding about 20% to official population estimates. It should also be borne in mind that some Danang inhabitants with permanent registration in the city move to other locations (e.g., the southeast) without registering such move, and therefore is also not reflected in official statistics. Nevertheless, official figures do offer an estimate of minimum population levels.

4.6 Based on the trends in the demographic makeup of Danang, the major implications for the future are summarized as follows:

(i) Population growth will accelerate mainly because of migration to the city. Immigration rate (social growth rate) was 1.5% up in 2015, but will accelerate to nearly 6.7% between 2015 and 2025, resulting in a population of 2.1 million in 2025.[1] By including unenumerated migrants, the population in 2025 may reach 2.5 million. Considering the low level of urbanization rate of the country, it is expected that the population of Danang City will increase further beyond 2025;

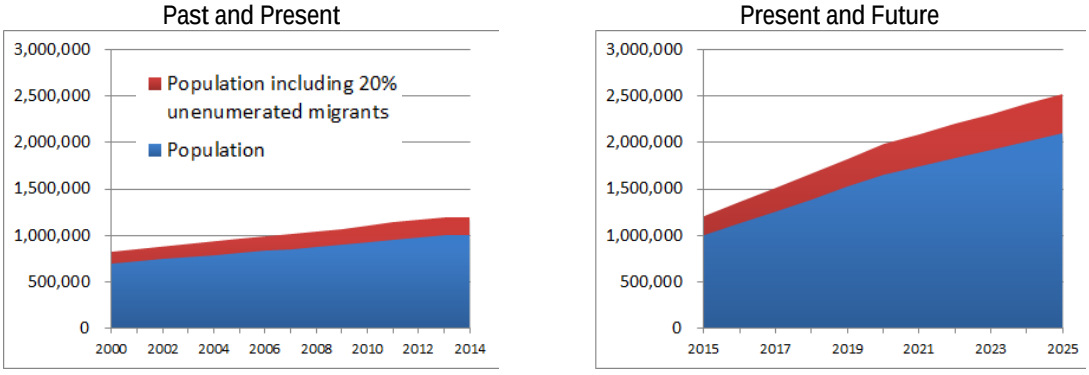
(ii) Continued migration to the city will translate to higher demand for affordable housing, increased natural population growth rates, and, possibly, higher unemployed or underemployed rate in case of an economic downturn;

(iii) Household sizes will decline with increasing emigration and changing social conventions;

(iv) A shortage of skilled labor in the city is also expected as other destinations like HCMC may appear as a more attractive destination than Danang; and

(v) Immigration will largely depend on the economic growth in CFEZ in both absolute terms and relative to the growth in NFEZ and SFEZ.

Figure 4.1.1 Baseline Scenario of Population Growth



Note: Updated based on DaCRISS

4.7 Current estimates from the SEDP suggest a rapid population growth due to migration into the city, while unofficial population estimates suggest that the city is already home to a large number of unregistered immigrants, and that official statistics have generally underestimated their number. As population movement is central to determining the speed of Danang's growth, the brain-drain of university graduates who are going to the south is becoming a serious issue for the city.

[1] Natural growth rate is assumed at 1.0%.

4.8 Figures from the Commune Survey (CS) and Household Interview Survey (HIS) conducted in DaCRISS suggest that most immigrants to Danang come from the surrounding provinces with the largest proportion coming from the surrounding provinces of Hue and Quang Nam. A significant number of immigrants also originate from Quang Ngai and Quang Tri provinces. There are few immigrants, however, from Binh Dinh province. Central Highlands and North Central Coastal provinces also see some migration of their populations to the city.

4.9 Figure 4.1.2 shows the movement of the people from other regions to Danang city in Vietnam. About a third of total migrants are from adjourned provinces, most notably from Quang Nam. According to the statistics of the past decade, it shows that the people moving within Danang City decreased in recent years from more than half of the total migrating population in 1999–2005. In this period, a considerable share of migrants went to provinces in SFEZ, mainly to Ho Chi Minh City for work, studies, and better living. However, in recent years, destinations of migrants in the more recent years have become diverse, with more people going to other places in the country. Migration itself is generally accelerating over the years.

Figure 4.1.2 Mitigation from Other Regions to Danang City

Source: Population and Household Survey as of 4 January 2014 (GSO September 2015).

4.10 Rapid population increase, particularly caused by social increase, will strain more social costs and adverse environmental impacts, such as further development of basic infrastructure, affordable housing, more educational and health service delivery, and air, noise pollutions and pressure on ecosystem. Therefore, it will be the one of critical issues to Danang City to encounter a highly possible population increase in the near future.

2) Economic Growth

4.11 The economic growth of Vietnam is predicted to continue further due to two major factors. One is the overall economic growth in the region where Vietnam has relatively competitive investment environment to attract FDI, and two is the expanding domestic investment and consumption. These two basic factors will benefit economic growth across the country through adequate government interventions.

4.12 The policy of opening and integrating into the international economy has mainstreamed along with structural reforms. Starting with the participation into ASEAN and its free trade agreement in 1995, namely ASEAN Free Trade Area (AFTA), Vietnam has been actively engaging in bilateral and regional free trade agreements (FTAs). Further integration into the global economy, especially via a comprehensive free trade agreement as the Trans-Pacific Partnership (TPP) will be expected to bring various opportunities and challenges. Through AFTA, integration and abolition of the production has been already started in the manufacturing industry as plural production basis will not be economically viable. Japanese manufactures in Thailand, have increased export their electrical goods to Vietnam owing to applying the Common Effective Preferential Tariff (CEPT) scheme under AFTA and to their advanced supporting industries compare to Vietnam.[2]

4.13 On the other hand, under the TPP, largest gains in GDP is regarded as Vietnam (estimated as 10 % increase) owing to large export markets (increase by approximately 29%), such as garment (expand 28% by 2030, following the reduction of tariffs of up to 8.7%). At the same time, TPP could increase the real wages of unskilled workers by more than 14 percent by 2030, as production intensive in unskilled labor (e.g. textiles) shifts to Vietnam.[3]

4.14 Danang will not only benefit from the overall economic growth of the country, but the city can further grow economically by leveraging its strength and potential resources such as natural environment, cultural heritage, human resources, and conducive investment environment. At the same time, however, it must be recognized that Danang has a number of weaknesses and faces some threats which must be overcome.

4.15 The following summarizes economic development issues which were identified in DaCRISS and which should be addressed in order to accelerate the city's and the CFEZ's economic growth. While some issues have improved significantly since they were identified in DaCRISS, others have not improved as vigorously. The following points remain valid today:

(i) Modernize existing industries to make them more competitive and nonpolluting;

(ii) The city's economic competitiveness level is not as strong as that in other cities, such as Ho Chi Minh, Hanoi, and Haiphong. Productivity is relatively low and the sector is rather dominated by SOEs. There is no significant industry that steers the economy. Meanwhile, the management of most of the industrial estates is not so satisfactory as to attract investors;

(iii) Because the city is handicapped by a limited market (i.e., small population size), lack of infrastructure, and remoteness from large growth centers in the country and the

[2] Various news by JETRO
[3] World Bank, Global Economic Prospects, January 2016, "Potential Macroeconomic Implications of the Trans-Pacific Partnership"

world, adopting conventional methods of growth strategies to attract manufacturing industries to the city by developing industrial estates and providing incentives would not be a long-term success;

(iv) There is a need to find Danang's competitive edge or supremacy over NFEZ and SFEZ, and to establish a much more strategic approach to economic development, one that will help guarantee the sustainable development of the city and CFEZ; and

(v) Promote and support locations of private sector investment.

4.16 **Investment Climate:** The city has been providing various incentives for investors. While investor confidence is high as seen in the Provincial Competitive Index (PCI) survey, track records show the city still lags far behind Hanoi, HCMC, and other major Asian cities. For private firms, investing overseas, especially in developing nations, involves many unforeseen risks albeit the potential benefits that these brave corporate decisions may possibly bring about. Therefore, it is vital for foreign firms seeking opportunities to invest in Danang City to accurately understand the current situation of the business environment and be informed of the likely challenges they may face.

4.17 According to the PCI, Danang ranked first from 2008 to 2010 and in 2014. The PCI is a survey of 9,859 private domestic businesses and 1,491 foreign-invested enterprises (FIEs), conducted jointly by the Vietnam Chamber of Commerce and Industry (VCCI) and the U.S. Agency for International Development (USAID). The annual publication started in May 2005. In 2013, Danang slid to the 27th position, but topped the ranking again in 2014 due mostly to the effective implementation of the "Year-of-Business" program, "under which the city government has implemented many practical initiatives to create a favorable environment for business development in 2014. The objective of the program was to help local businesses stabilize their operations and encourage their development."[4]

4.18 Danang is the core city of the CFEZ. While CFEZ is handicapped in many ways compared to NFEZ, which is led by Hanoi, and SFEZ, which is championed by HCMC, there is a widening gap among NFEZ, SFEZ, and CFEZ. Nonetheless, the CFEZ is the key to a north–south integration in the country.

Table 4.1.1 Profile of Danang and Other ASEAN Cities

City	GDP/Capita by Country (USD, 2013)	Water (USD/m^3) 1)	Electricity (USD/kWh)	Transportation Cost to Yokohama Port (USD/40-ft Container)	Monthly Office Rent (USD/m^2)	Monthly Shop Rent (USD/m^2)	Social Security Contribution (%)	Basic Wage of Workers (USD/M)	Basic Wage of Engineers (USD/M)
1. Singapore	55,182	1.65	0.19	825	87	286	17	1,598	2,829
2. Kuala Lumpur	10,420	0.36	0.11	816	20	18	13	453	1,000
3. Jakarta	3,460	0.78	0.11	800	50	118	9	263	425
4. Manila	2,707	0.29	0.22	610	24	26	10.6	267	386
5. Cebu		0.73	0.22	670	12	22	10.6	233	340
6. Bangkok	5,679	0.34	0.1	1,210	22	68	5	369	681
7. Hanoi	1,909	0.44	0.09	1,090	31	113	22	173	396
8. Ho Chi Minh City		0.4	0.09	340	26	92	22	185	351
9. Danang	(2,242)	0.24	0.09	1,240	13	30	22	137	249
10. Vientiane	1,548	0.27	0.08	2,500	14	34	6	112	174
11. Phnom Penh	1,037	0.23	0.24	1,218	25	30	0.8	113	323
12. Yangon	888	0.44	0.04	900	90	25	7	127	386

Note: Extracted from the JETRO website information on comparison of investment cost

1) Danang's GRDP (USD2,242) is above the national level (USD1,909), but Hanoi and Ho Chi Minh also GRDPs which are higher than the average.

[4] http://www.baodanang.vn/english/business/201503/year-for-businesses-2014-implemented-effectively-2402044/

4.19 The major strengths and opportunities of the region lie in its diverse and rich natural and cultural environment—it is host to three World Heritage Sites—strategic location in Vietnam and in the GMS region, a growing market for quality tourism, and strong policy commitment of the Government for CFEZ growth. However, its development potential in the marine, forestry, and human resources sectors are not fully tapped. Moreover, the constraints and threats facing the region include: small population, lack of infrastructure, vulnerability to natural disasters, weak private sector, weak connectivity with global markets and growth hubs, and impact of climate change.

4.20 Due to the small market of the region, Danang and CFEZ do not have a choice but to venture outside the region in search for a larger market and further opportunities to accelerate and sustain its growth. For that, the region needs to be attractive enough for potential residents, investors, and tourists.

4.21 Against a backdrop of increased interest in overseas operation by medium to small-scale private firms in Yokohama City due to the Y-PORT initiative, the JICA Study Team interviewed the Japan Business Association in Danang (JBAD) about their current needs and issues. Established in 2008 and headquartered in Danang, JBAD currently has 114 member firms, of which approximately 35% are in manufacturing. JBAD conducts periodic meetings with the People's Committee of Danang City to raise their concerns and request for operational improvements in various aspects. Issues raised in September 2015 are summarized in Table 4.1.3.

Table 4.1.2 Requests from JBAD to Danang People's Committee

Topic	Needs Stated by JBAD Firms
1. Transport Development	• Provide loop-line mini bus for inner city transport • Establish bus access from city central bus terminal to Hoa Khanh IZ • Provide minibuses for tourism purposes
2. Industrial Zone Management	• Ban small-scale vendors, pasturing livestock, intrusion of outsiders, and illegal parking within IZs • Meet needs of 500-1,000 m2 office/ factory space (to reflect recent increase in foreign investment of medium to small scale firms; currently the city leases IZ land over 20,000 m2 whereas HCMC meets needs c. >2,000 m2)
3. Public Infrastructure	• Improve wastewater management • Increase greenery in IZs • Provide more nurseries to prevent women from resigning after maternity leaves • Construct and establish more offices for IT firms (both the Danang Software Park and Indochina Office Tower are currently full) • Develop pedestrian walkways within the city • Increase parking space for motorcycles • Stable provision of electricity (upgrading infrastructure to prevent sudden suspensions)
4. Customs, Procedural Issues	• Streamline steps relevant to customs by shifting from paper-based procedures to computer-based procedures • Provide advance information from the city on various issues (rather than 2-3 days' notice) • Reconsider the application of scrap export regulations to export processing enterprises (EPEs) • Streamline needed procedures to obtain work permits for foreigners • Simplify application processes for various social insurance systems
5. Financial Assistance	• Provide financial assistance to nurture local supporting industries (to provide precision machinery equipment to Japanese firms) • Apply national financial assistance schemes to all industrial zones in Danang (currently applies only to firms located in the High-tech Park)
6. Information Sharing	• Establish a one-stop assistance desk for employees in Japanese firms (information about administrative procedures, operational advice, family support, etc.)
7. Human Resource Development	• Increase the number of graduates from the Information Technology Department in Danang Technology University to support pressing demands for IT staff in the city • Improve and enhance the quality of Japanese language training at the Danang Foreign Language University to meet actual needs of Japanese firms

Source: Summarized by JICA Study Team based on JBAD meeting records.

4.22 The city is not only for its residents, but also for tourists and business visitors . For tourists, despite the city's rich tourism resources and MICE potential, these opportunities remain untapped with limited coordinated tours with neighboring tourist areas. For business visitors, the upgrading of Danang Airport and frequent flights to/from Hanoi and HCMC has increased travel convenience and increased the choices of accommodation, from many medium-range to upscale hotels. Beach resorts are beginning to offer a variety of meeting packages that provide venue and catering services. In Danang, it is more the supply side of business (i.e., whether or not there is enough business to attract outsiders) which poses the real problem, rather than the city's receiving capacity.

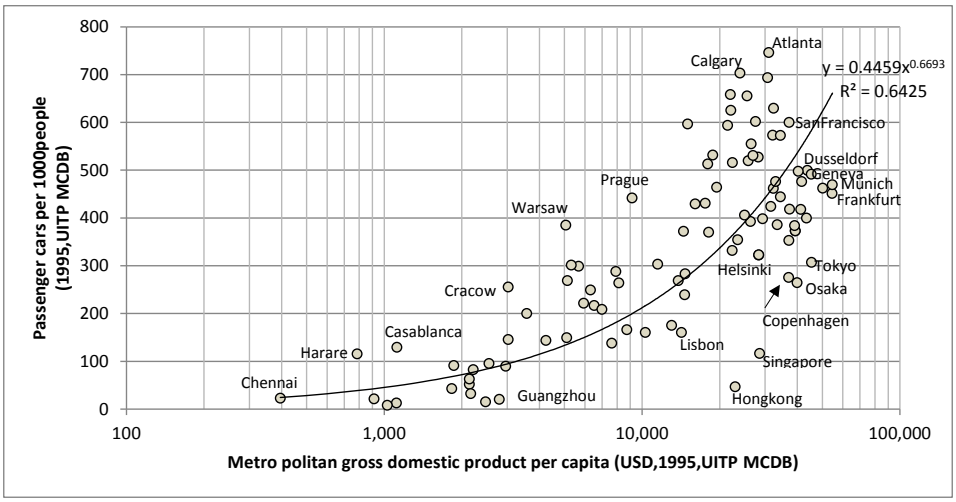
3) Motorization and Traffic Congestion

4.23 Growth in GRDP/income is greatly associated with the increase in car ownership (see Figure 4.1.3). Traffic congestion is not only caused by increasing populations or urbanization, but by four distinct factors, namely:

(a) **Population:** How much increase in population?
(b) **Passenger Car Unit (PCU):** How many equivalent number of cars per different type of a vehicle?
(c) **Trip rate:** How often do people travel?
(d) **Trip length:** How much longer do the trips become due to expansion of urban area?

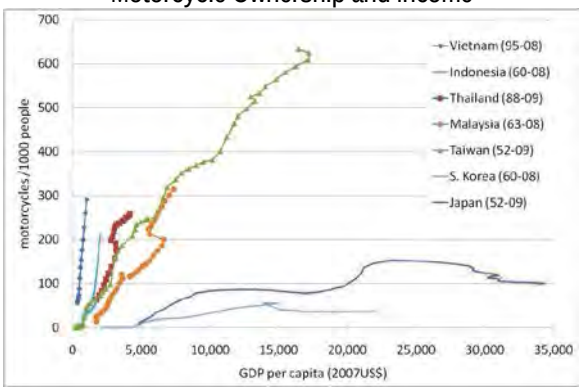
4.24 If each of these factors double, this means a sixteen-fold impact on traffic congestion (see Figure 4.1.4). However, the analysis conducted in DaCRISS shows that with strong bus (public transport) improvements, the adverse impacts can be greatly reduced. Danang must thus learn from the ill experiences in Hanoi and HCMC (see Figure 4.1.5).

Figure 4.1.3 GRDP per capita and Car Ownership Rate

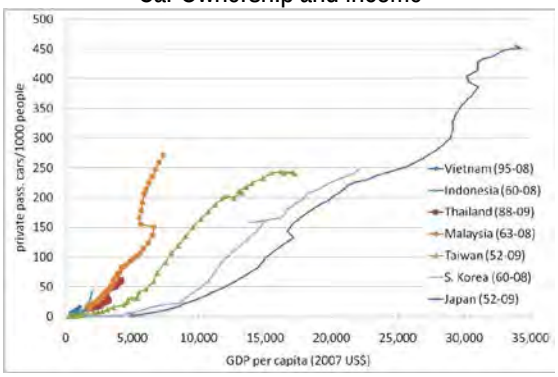


Source: 'Union internationale des transports publics（UITP,） Millennium Cities Database for Transport (MCDB) 1995

Motorcycle Ownership and Income

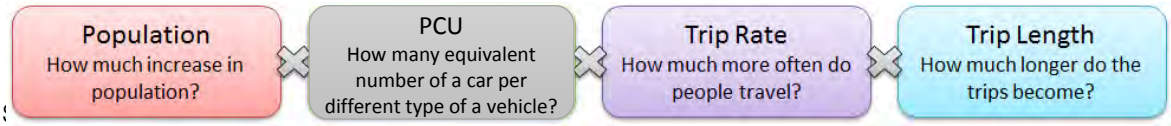


Car Ownership and Income



Source: JICA Study Team

Figure 4.1.4 Factors that Degrade Road Traffic Congestion



Source: JICA Study Team

4.25 Rapid motorization and traffic congestion in urban cities is not uncommon phenomena especially in developing countries, i.e. Vietnam is not an exception as well. Motorization itself is not a serious issue, but rapid motorization without necessary countermeasures and preparedness will become a major urban issue. In Danang city, due partially to a lack of parking space and concentration of traffic to the city center, traffic congestion is already observed and it is anticipated that motorization and traffic congestion cause adverse socioeconomic impacts, such as time loss, economic loss and adverse impact to environment.

Figure 4.1.5 Rapid Socio-economic Changes of Vietnam Observed Through Pictures

4) Impact of Climate Change

4.26 Danang City has a long coastline with beautiful beaches and natural landscapes together with a mountainous region. But, at the same time, it is constantly influenced by typhoons and tides and has a high risk for tsunami disasters. Under the climate change scenario B2 (Medium Emission Scenario) developed by the Intergovernmental Panel on Climate Change(IPCC), temperature and sea levels are estimated to rise as shown in the table below.

Table 4.1.3 Changes in Annual Mean Temperatures and Sea Levels Relative to Period 1980-1999

Item	Year			
	2020	2030	2040	2050
Temperature Increase (C^0)	0.4	0.5	0.7	0.9
Rise in Sea Levels (cm)	12.0	17.0	23.0	30.0

Source: IPCC

4.27 Danang City has been collaborating with international organizations in order to adopt the climate change agenda. This has resulted in a prioritized list of actions that the city has to implement up to 2020 to allow the city to adapt to climate change.[5] The progress of the listed projects will be monitored by the Danang Climate Change Coordination Office (CCCO). An analysis of the city's vulnerability to climate change in terms of sector, vulnerable groups, and ecology is ongoing, but the implementation of the listed projects is limited. Incorporating climate change adaptation measures to the current infrastructure investment program is necessary.

4.28 As Section 3.2 Development Orientation of City Plans in Chapter 3 elaborates, the plan for an environmental city and the legal policies to address environmental issues, particularly climate change issues, have yet to concretely indicate any scope or measure that will reduce GHG emissions and create a low-carbon city. However, there are many attempts by international cooperation agencies to reduce GHG emissions. The French Development Agency (AFD), for example, provided technical assistance focusing on climate change mitigation in the residential and tertiary sectors. Yokohama City is also promoting Joint Crediting Mechanism (JCM) projects which promote energy efficiency in water supply and buildings, ultimately contributing to the development of low-carbon towns.

5) Fundamental Issues on Sustainable Development of Danang City

4.29 Labor shortage has been an issue in industrial zones in Danang. Based on statistics of the Division of Industrial and Export Processing Zones Authority (DIEPZA), there are now more than 72,000 employees working in 270 companies, of which, around 40,000 employees work for foreign enterprises in six of the city's industrial zones. Based on statistics of the IZ Employment Introduction Center, enterprises in six industrial zones are short of approximately 6,000 workers, mainly in the manufacturing field such as textiles, footwear, electronics assembly, mechanical fabrication engineering, and welding. The supply of garment and mechanical workers does not meet the demand of the enterprises. This is already a disadvantage of Danang City in terms of investment promotion.

4.30 The General Statistics Office of Vietnam estimates the population of 2025 to reach 1.15 million, which is far below the 2.1 million population estimated by the DPC. Since there is already substantial share of unregistered population (20%) and population growth is expected to be as high as 3.7% to 4.9%[6] during 2015 to 2020 due to massive social migration.

4.31 Labor demand will approximately be 1 million by 2025, of which 250,000 will be for

[5] Decision No.6901/QĐ-UBND dated on 24/8/2012
[6] Urban Planning Institute of Danang City 2015 "Amendment of masterplan of Danang City to year 2030 and vision to year 2050".

tourism only and about 700,000 for the overall service sector. Since the working age population (between 15 and 64) by 2025 is expected to be less than 800,000 by GSO projection, the shortage of labor, especially with high skills, will be a great disadvantage and might curb the growth of the industry. In order to solve the labor issue, the following are proposed:

(1) Promotion of migrant labor by increasing quality, affordable housing and providing public utility services, such as water supply and waste collection, and education, etc.;

(2) Provision of intercity public transportation, for example, BRT or MRT between Hue and Quang Nam.

4.32 The expected increase in population, especially which of migrants, must occur alongside the provision of adequate employment opportunities matching the envisioned competitive and sustainable economic growth. The increase in population, growing affluence of the people, and changing lifestyles will also demand diversified housing especially affordable housing.

4.33 Therefore, it is anticipated that first there will be a shortage of labor force in future in order to keep up the economic development and second, as mentioned in the population growth, the city might encounter insufficiency in quality and quantity of basic infrastructure and housing against the increasing population, and as a result, collective such phenomena will cause adverse socioeconomic and environmental impacts to the city.

6) Living Conditions

4.34 **Water Supply:** Water supply in the city has significantly improved in the last decade. As of 2013, 98% of households in Hai Chau and Thanh Khe districts have access to clean water, 89% in the remaining six urban districts, and 97.7% in rural households. Hence, the remaining issues in terms of water supply are the following: sustaining the water quality, keeping pace with the increase in water demand, and reducing non-revenue water (NRW) ratio.

4.35 All water treatment plants are currently operating at full capacity and will not be able to meet the demand in the near future. By 2020, the total water demand in urban districts is estimated to be 420,000 m^3/day and 120,000 m^3/day in rural districts. By 2030, the estimates are 680,000 m^3/day in the urban districts and 150,000 m^3/day in rural districts, which implies 830,000 m^3/day of water demand or quadruple of the current usage volume (210,000 m^3/day).

4.36 **Drainage and Sewerage:** Low sewerage connection rates and limited sludge collection for domestic wastewater plus a lack of rigorous control of industrial wastewater exacerbates water pollution. With regard to domestic wastewater, the combined sewerage system which collects both wastewater and storm water is adopted in Danang City. However, since many households have septic tanks without sewerage connection, the coverage ratio of domestic wastewater is limited. Nonetheless, sludge collection is carried out jn a limited area due to the termination of subsidies. Moreover, solid waste cannot be separated from wastewater either. As a result, the whole situation has been causing flooding and waterborne pollution. With regard to industrial wastewater, although three out of six industrial parks have treatment facilities, they are not rigorously managed by discharged sources and/ or controlled by the local administration. The city plans to increase the treatment capacity of wastewater, integrate the drainage and sewerage

systems into one, and gradually prohibit direct disposal of wastewater into rivers and the sea to prevent environmental pollution and deterioration of urban landscape and impacts on tourism activities.

4.37 **Solid Waste Management:** In general, solid waste has been increasing in the city due to the growing population. According to an updated estimate, the current landfill will be entirely filled by 2019 unless effective countermeasures are taken. There are other reasons that are exacerbating this problem. First, more than half of the compactors in the city exceed the operation life period and are substandard, but these old facilities cannot be replaced due to budget constraints. Second, the existing solid waste treatment system is not effective for waste separation at source and limits the potential for recycling materials. These factors have increased the pressure on the final dumpsite. In addition, industrial and hazardous waste are not strictly controlled, creating the potential for contamination.

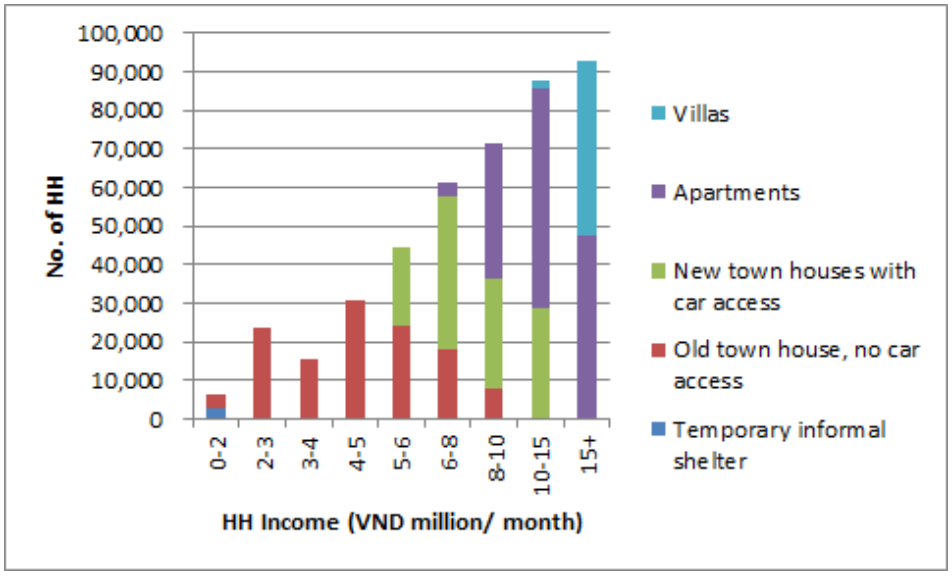
4.38 **Mobility and Accessibility:** The ownership of cars and motorcycles is continuously increasing in the city and expected to accelerate in the future. Currently, traffic congestion is limited. However, the poor situation of public transport services is leading to difficulties in commuting and studying, thereby encouraging private vehicle ownership and boosting the possibility of traffic congestion in the future.

4.39 **Housing:** While Danang has relatively good housing conditions compared to the rest of the country, substandard and overcrowded housing is still an issue in central communes. There is also limited quality housing for low-income households. Survey results from DaCRISS indicate that 44% of households living in public housing are dissatisfied with their living conditions. Resettlement housing as a consequence of various urban development projects indicated in the City Master Plan and the World Bank-funded Priority Infrastructure Investment Project has further accelerated housing development in Danang in the early 2000s, and as a result, owner-occupied housing accounts for 96.9% of all housing as of 2008. According to the DaCRISS HIS, the most common reasons for dissatisfaction in housing were space and structure. Therefore, it is important to provide spacious housing in central communes and enable access to good quality public housing for low-income households.

4.40 Housing needs will change in proportion to the increase in people's income. The information used to illustrate the projected future housing needs by type of housing in Figure 4.1.6 is from Bertaud (2011)[7]. The original data is applied to the estimated future income distribution in 2020 based on the results of the DaCRISS HIS. Results show that there will be increased needs for new townhouses with car access and apartments for the medium-income group, as well as villas for the high-income group, while old townhouses will continue to dominate the housing stock of the low-income group.

[7] Bertaud, Alain (2011), 'Ho Chi Minh City's urban structure: spatial development issues and potential', report prepared as a background paper for the Vietnam Urbanization Review.

Figure 4.1.6 Housing Typology and Projected Needs by Future Household Income (2020)



Source: JICA Study Team

4.41 **Healthcare and Education:** While basic coverage is better than other medium-sized cities, Danang lacks high-quality and tertiary services appropriate for a regional center and a tourism/industry hub. The city is home to Danang University and has a Central Hospital in the city center, but the number of tertiary-level healthcare and education services is clearly lacking for a city with a 2–3 million population and one that functions as a regional center.

4.42 **Significance of Area-specific Approach:** Akin to a doctor examining an ill patient, the assessment of a multifaceted entity such as a city, policy, project, etc. to identify its problems and issues can be regarded as a "diagnosis." The current situation will be compared against its ideal state to allow the planner or policy maker to assess what needs to be improved, where, and how much. The following paragraphs is an example of an "urban karte," which is an example of a city diagnosis.

4.43 The usual approach to generate data and information involves an analytical disaggregation of the city down to the district and commune levels as component parts of the city. Indicators appropriate for the target city is developed to present the prevailing characteristics or conditions in the city and its districts as well as communes. In presenting a detailed picture of the subject areas, these indicators give information on the development direction, issues, inadequacies, and potentials of each commune and district, as well as the city in general, thereby serving as guideposts in formulating the appropriate development direction that will eventually be reflected in the master plan for the city and the region.

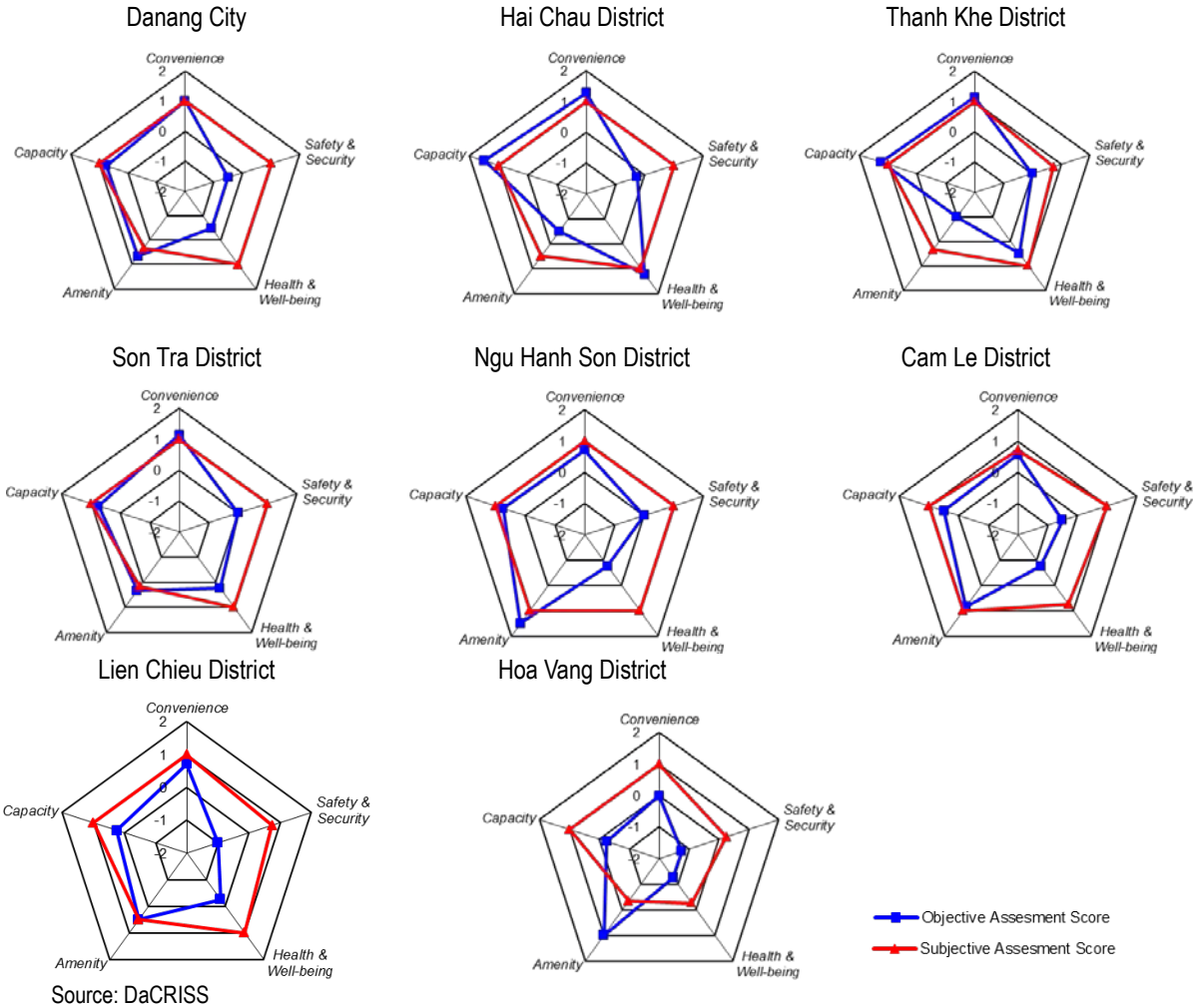
4.44 Figure 4.1.7 shows the diagnosis for Danang City, reflecting the objective assessment (in blue with square marks) and subjective assessment (in red with triangular marks) of the various aspects of living conditions in the city by district. The overall living conditions in Danang City are generally good, although improvements are needed in the aspects of "safety and security" as well as "health and well-being." While urban districts had high scores for "convenience" (largely dependent on the level of existing infrastructure) and "capacity" (largely dependent on income and access to goods and services), it was clear that Hoa Vang district, the sole rural district had high scores for

"amenity" (largely dependent on water, greenery, living space, etc.). An interesting fact when comparing the objective (based on factual data) and subjective scores (people's assessment) is the gap between the two; people were sometimes satisfied even with a relatively low objective score, and vice versa. For example, when the coverage rate of electricity is very high (almost 100%) but there are frequent power outages, affecting business and industrial production, there is low satisfaction. The opposite case is when there is low police coverage rate, but crime rates are also low, which generates a feeling of being safe, hence the high satisfaction scores. For this reason, it is important to consider both objective and subjective assessments of living conditions.

4.45 Through a comparison of these scores, it is possible to know the gaps between actual supply and public satisfaction. The significant point is that this can be done at the commune level, enabling the government and planners to define planning needs for each aspect at the local level, thereby avoiding the uniform provision of infrastructure and services and enabling an economical distribution of resources.

4.46 In the immediate future and in the long term, these indicators will enable the city government and other relevant authorities to monitor the progress of development and growth, as well as the sentiments of the people. Equipped with such knowledge and understanding, the government can revise its plans and strategies to keep pace with the changing dynamics of urban development.

Figure 4.1.7 Radar Chart on Gaps between Supply and People's Satisfaction with Their Living Conditions



Source: DaCRISS

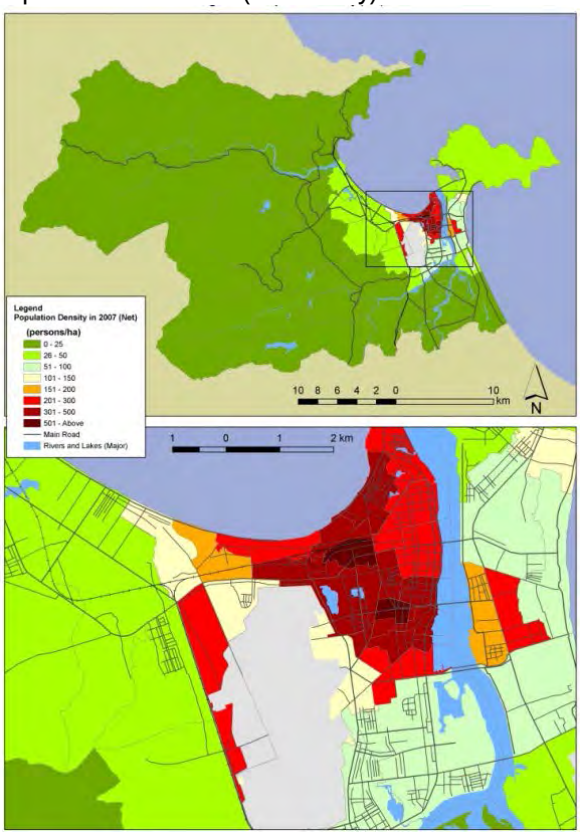
7) Environmental Management

4.47 **Eco-preservation:** Danang is rich in fauna and flora especially in Son Tra Peninsula. However, in recent years, a substantial part of the city's previously protected areas has seen a number of resort development. Hence, these areas are under threat and under protected with poor greenery preservation measures. It is perceived that the major issue on a lack of necessary environmental management is insufficient attention and measures taken by the City administration as stated by itself in the first forum.

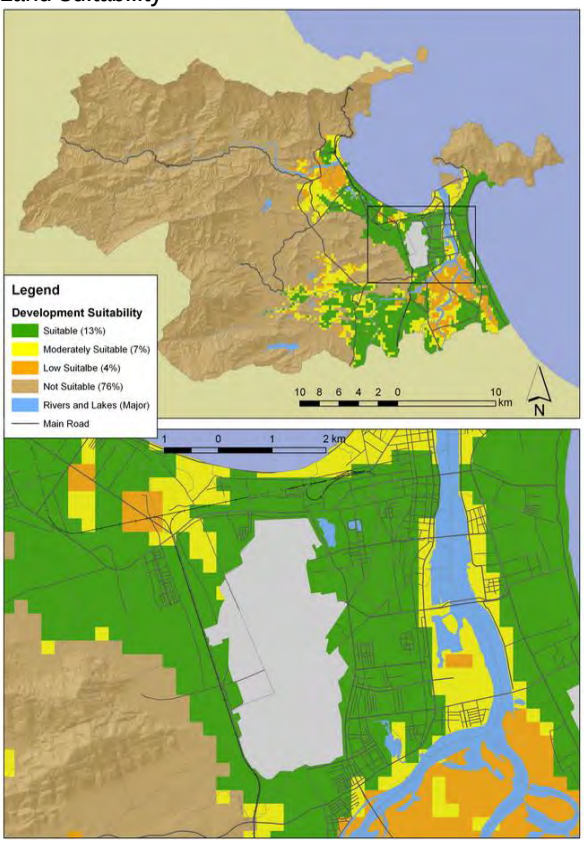
4.48 **Disaster Prevention:** By comparing the population distribution and the calculated land development suitability level, it is clear that many people continue to reside in areas rather unsuitable for development and most vulnerable to disasters. As of 2008, during DaCRISS, 9.0% of the total population of the study area resided in areas with low suitability or that were not suitable for development. Cam Le and Hoa Vang districts had 27.4% and 32.7% of their respective populations living in such areas. Although disaster prevention efforts in general have advanced greatly in recent years, including raising awareness along with climate change adaptation policy, dissemination efforts are still limited.

Figure 4.1.8 Comparison of Population Distribution and Land Suitability

Population Distribution (Net Density)[1)]



Land Suitability



Source: DaCRISS

1) Net population density is defined as population per unit of land which are urban areas and other areas suitable for various types of development.

8) Spatial Development Management

4.49 The definition of urban sprawl is "an urban form, the opposite of the desirable compact city, with high density, centralized development and a mixture of functions." It is also stated that "what is considered to be sprawl ranges along a continuum of more

compact to completely dispersed development…a variety of urban forms have been covered by the term 'urban sprawl', ranging from contiguous suburban growth, linear patterns of strip development, leapfrog and scattered development." Hence, what is perceived as urban sprawl differs by locality and conditions; however, "location and newness" seem to be the determinant factors when identifying sprawl. In Vietnam, Hanoi, along with HCMC, has experienced a great degree of sprawl in the past decades, and Danang will follow the same path if it does not convert to medium to high-density development rather than low to medium density as what is currently taking place. Some well-known costs and drawbacks of sprawl are:

(i) Higher levels of greenhouse gas emissions and resource consumption (land, energy and water), attributable to increased car-dependency and energy consumption associated with low-density housing, coupled with the increased embodied energy during infrastructure provision;

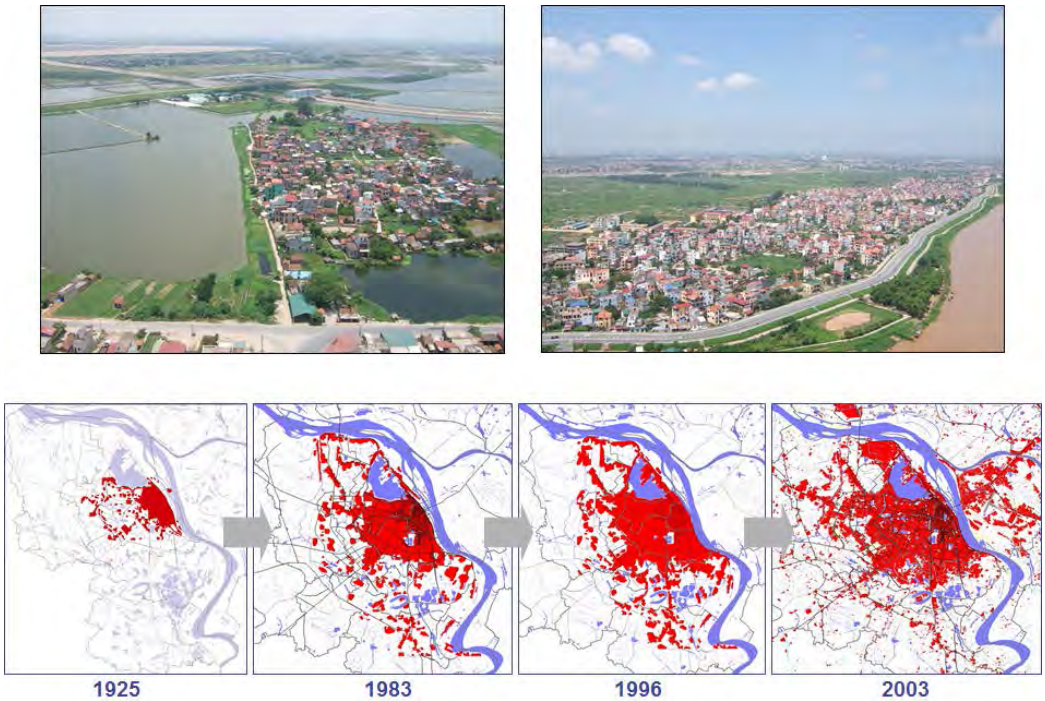
(ii) Using up land with value for future climate adaptation, such as green spaces which mitigate against flood risk;

(iii) Motor vehicle collisions, higher transport emissions and level of local pollutants;

(iv) Disadvantage to those who are unable to drive, such as the elderly and children, leading to lack of social connections and isolation; and

(v) Burden of high fuel costs on household budget.

Figure 4.1.9 Rapid Expansion of Urban Areas and Sprawl to Outskirts (Hanoi)



Source: HAIDEP JICA Comprehensive Urban Development Programme in Hanoi Capital City

4.50 Expansion of urban area to suburban area/outskirt has been seen in past years in Danang city. In next decade, according to the current urban planning, more expansion and development is anticipated, which will bring abovementioned drawbacks and impacts as well as burden on social and economic infrastructure costs and pressure on natural environment.

9) Regional Connectivity

4.51 Danang City is situated within a radius of 1,000-2,000km from major regional growth centers such as Bangkok, Kuala Lumpur, Singapore, Manila, Taiwan, Hong Kong, Nanning, Kunmin, among others. Many of these growth centers are much larger than that of the Northern Focal Economic Zone (NFEZ) or the Southern Focal Economic Zone (SFEZ). Direct connectivity through air transport will reduce the distance between Danang and these growth centers to 2-3 hours. Danang's role is also important within the Greater Mekong Subregion (GMS) and, with the development of the east-west corridor between Vietnam and Thailand through Laos, there is an increasing attention on tourism traffic and logistics services.

4.52 Situated 764km south of Hanoi, 964km north of HCMC, the city is the pivot of integrating the northern and southern powerhouses of the nation. The balanced development of Vietnam depends greatly on the accelerated growth of Danang and whether the city is capable to play a catalytic role to connect these two regions. This will also impact the cities in between the North-South corridor and boost development of the Central Highlands as well.

4.53 Danang is also expected to become the growth engine within the CFEZ. The city accounts for approximately one-fourths of the total GRDP of the CFEZ, and nearly 40% of all FDI projects in the CFEZ in the period 1988-2007 have been licensed in Danang City. Economic growth is rapid at an annual growth of 10.8% (2009-2013 figures). While Danang City cannot grow alone to be a global city, CFEZ cannot grow without Danang City.

4.54 Even though Danang is in above mentioned geographical advantage as well as the potential as the center of CFEZ, its full potential has not been flourished because of institutional regional connectivity, i.e. regional cooperation with surrounding local governments and also provinces in the CFEZ, is limited. According to Danang City, the current regional cooperation mechanism is not well functioning and has not produced significant output It is fair to say that main issue of regional connectivity is that physical infrastructure to connect Danang City and CFEZ and GMS still has a room for improvement and development, and how to build more effective institutional coordination system and practical mechanism to foster the economic development is a major challenge for Danang City and the region.

4.2 Opportunities for Sustainable Development of Danang City

4.55 In a nutshell, Danang's current status can be diagnosed as follows:

(a) **Demographics and Migration:** The growth in population has been rather slow during the past decade, but this population does not include the unregistered migrants to urban areas which is said to account for 20% of the total population. The growth of in-migration will depend largely on the economic growth of Danang and the CFEZ, both in absolute terms and relative to the growth of NFEZ and SFEZ. While in-migration is accelerating resulting in a large number of unregistered immigrants, "brain-drain" of university graduates to the south is becoming a serious issue for the city.

(b) **Regional Connectivity:** The balanced development of Vietnam depends greatly on the accelerated growth of Danang and whether the city is capable to play a catalytic role to connect these two regions. While Danang City cannot grow alone to be a global city, and the CFEZ cannot grow without Danang City either.

(c) **Investment Climate:** The city has been providing various incentives for investors. While investor confidence is high as seen in the Provincial Competitive Index survey, track records suggest that the city is still lagging far behind Hanoi, HCMC and other major Asian cities. Due to the small market of the region, Danang and the CFEZ do not have a choice but to venture outside the region in search for a larger market and further opportunities to accelerate and sustain its growth.

(d) **Living Conditions:** Water supply in the city has significantly improved in the last decade. Low sewerage connection rates and limited sludge collection for domestic wastewater plus lack of rigorous control of industrial wastewater exacerbates water pollution. In general, solid waste has been increasing and according to an updated estimate, the current landfill will be full by 2019 unless effective countermeasures are taken. The ownership of cars and motorcycles is continuously increasing in the city and expected to accelerate in the future. While Danang has relatively good housing conditions compared to the rest of the country, substandard and overcrowding housing is still an issue in central communes and there is limited quality housing for low-income households. With regards to healthcare and education, while basic coverage is better than other medium sized cities, the city lacks high-quality and tertiary services appropriate for a regional center and a tourism/ industry hub.

(e) **Environmental and Disaster Management:** Danang's rich natural environment is under threat due to massive infrastructure and resort development unless appropriate environmental management measures. Greenery preservation and hotspot management needs to be addressed. Many people still continue to live in areas unsuitable for development assessing from natural conditions, and this increases the vulnerability towards the outbreak of hazards in the city, possibly resulting in more disaster damage.

(f) **Poverty:** Compared to other cities in the country, Danang has a relatively affluent population and has a low poverty rate at 0.32% (0.18% in urban areas, 1.33% in rural areas) as of 2014. According to the HIS in DaCRISS, household sizes were larger than the more affluent households, and infrastructure coverage and ownership of basic household goods were both substantially low.

4.56 A comprehensive SWOT analysis was performed by the Department of Planning and Investment of Danang City in the 1st Forum of the project which took place in 23 December 2014, and was agreed upon by the stakeholders participating in the forum (see Table 4.2.1).

4.57 The sustainable growth of Danang City as an environmental city must be achieved under the context of accelerated growth, because the growth of CFEZ is highly dependent on the growth of Danang City and vice versa. Ensuring the city's sustainable growth and development, as well as those of CFEZ, is a tremendous responsibility. Assuming that the current trend continues, wherein SFEZ grows the fastest, followed by NFEZ, the gap between CFEZ and the latter two focal economic zones may further widen.

4.58 Therefore, the most fundamental policy for Danang City to pursue is to establish a firm and long-term accelerated growth strategy to enable the city to function as the third-important growth center in the country whose role is to facilitate the physical and socioeconomic integration of the two stronger focal economic zones, and in the process serving as the link to a more realizable national integration. Without a strong growth area in the center of Vietnam, the country would find it hard, or even impossible, to integrate the northern and southern growth centers and distribute the benefits of development to other areas in Vietnam, including the hinterland mountain regions as well as the Greater Mekong Subregion along the East-West Economic Corridor.

4.59 Given these preconditions, some areas for development opportunities lie firstly in its strategic location, geographically positioning itself in the center of Asia. If the city can establish a competitive international gateway (airport, port, international roads), this will accelerate the movement of people, goods, and finance between Danang and the outside world, expanding its originally small market. Secondly, the city's proximity to 3 major World Heritages is quite a rare case especially in Asia, and coupled with the beach and mountains of Danang, the city is by far rich in tourism resources over its comparators. Given the difficulty for Danang to catch up with Hanoi and HCMC through industry-led development, tourism development and high-quality service provision will be the key for Danang to establish its own economic growth model.

Table 4.2.1 Comparison with International Indicators and Benchmark for Danang in 2025

Strength	Weakness
• Strategic location • Rapid economic growth • Proximity to World Heritages • Good educational environment	• Limited linkage with global marketplace, low FDI attraction • Small-scope economy • Vulnerable to natural disasters • Fewer cultural and historic sites compared to Hue and Hoi An • Lack of good organization in urban development and land use efficiency. • Ineffective in motivating economical role in the central region.
Opportunity	**Threat**
• Competitive international gateway • Well-known tourism destination with high quality services • Increase in FDI	• Rapid urbanization, mechanization, industrialization • Land and housing development • Commercial development • Increase in income gap • Traffic congestion and accidents • Decrease in quality of living • Lack of housing for the medium and low-income people

Source: 1st Forum in Danang City (December 23rd, 2014, DPI of Danang City)

5 PROPOSED DEVELOPMENT STRATEGIES

5.1 Need for Integrated and Strategic Approach

5.1 Danang has relatively successfully attended to urban development issues and made good achievements in socio-economic development. There are, however, more serious challenges in the promotion of sustainable development and realization of the envisioned Environment City when the population is expected to increase rapidly and a great amount of needs for socio-economic activities emerge in the coming years. They must be satisfied in the limited space for urban development while the environment is preserved. If the process of urban growth and expansion is not properly controlled and managed, the city will suffer from degraded living conditions, traffic congestions, increasing hazard risks, loss of rich natural environment, and economic slowdown, among others, as experienced in many large cities in Asia including Hanoi and HCMC. To avoid the situation and ensure that the city will grow on the sustainable path, it is critical to update the current development plans and policies with comprehensive and coordinated viewpoints. Strategic projects and actions must be identified, designed, and implemented timely.

5.2 Yokohama City experienced the critical situation during the time of population explosion, especially in the 1960s—1970s. While the experience of Yokohama was thoroughly discussed in the forums and previous study[1], the lessons Danang City can learn are as follows:

(i) Formulation of an integrated long-term urban development plan: The plan indicated distinct spatial structure that comprised of core transport network (roads and rail), green and open space system, land‐use plan including CBDs, new towns, industrial zones, and main public infrastructures.
(ii) Identification and implementation of six strategic projects: In order to promote the core idea of a long-term urban development plan, six strategic projects were identified and implemented, which intended to restructure the fundamental urban spatial system in a way to attend to the rapid increase of population and motorization as well as the promotion of competitive economic development for future decades.
(iii) Establishment of the Planning Coordination Section to implement the six strategic projects in the most effective manner: The new unit was provided with institutional power and budget allocation under the leadership of the City Mayor.
(iv) Active involvement of citizens in planning and project implementation process: Communities and people were consulted and involved extensively in the process of planning and projects implementation.
(v) Involvement of Central Government and private sector: The Central Government budget was tapped for projects with national or inter-city level function. The value capture through private sector participation was also extensively practiced.

5.3 “Learning from good practice” is easier said than done. When one considers applying a successful practice from a certain city to another, it is quite easy to revert to a simple replication of one practice and “transplant” it to another. Planning is an output of complex interactions that aims to pursue a better society against a backdrop of historical, cultural, administrative and political contexts. During planning, the envisioned society are somewhat similar across different nations and cities, i.e. vibrant economy, healthy society,

[1] Data Collection Survey for Collaboration with International Cooperation and Business by the Japanese Municipality for Comprehensive Urban Development in Developing countries (Yokohama City) 2014

well-preserved environment, high mobility and accessibility, beautiful landscapes, etc. The systems and procedures that aim to materialize such visions significantly vary.

5.4 Hence, the JICA Study Team has mainly focused on the "essence" of these successful planning practices with special emphasis on the experiences of Yokohama City, Japan. This is a process of defining the key approaches for Yokohama's success in its urban development and, thereby, identifying its implications to Danang, i.e. what possible orientations in Danang might be. For instance, the Bay Bridge project in Yokohama aimed to divert inner-city heavy traffic to the outskirts so as to reduce traffic congestion in the city center. This could be translated to a port development project near the logistics zone in the west of Danang for the same purpose. The supposed bridge issue might actually be a port issue. This is what "learning from good practice" essentially means.

5.5 Table 5.1.1 takes this approach starting from the well-known six strategic programs of Yokohama. These are supplemented by the cross-cutting actions in Table5.1.2. which were indispensable for realizing the six strategic programs. The possible orientations in Danang identified through this procedure are the base for the proposed cross-cutting actions and programs proposed in this project.

Table 5.1.1 Six Strategic Programs in Yokohama and Application to Danang

Six Strategic Programs	Key Approach for Success	Possible Orientations in Danang
Minato Mirai 21 and City Center Enhancement	• Creating new business • Commercial & cultural centers as the City's economic driver	• Attract focal new industries • Establish new CBDs and regenerate existing CBD
Kanazawa Reclamation	• Eco-friendly industrial zone • Good environments for workers, residents and visitors	• Improve wastewater and solid waste services in industrial zones • Provide housing for workers
Kohoku New Town	• Independent urban services • Accessible to the city center by subway	• Mixed-use multifunctional towns • Private sector led housing development
Subway Network	• Connecting city centers and suburbs by public transport	• Accelerate BRT/ LRT development • Traffic management
Expressway Network	• Trunk road network as backbone • Segregation of road traffic	• Improving existing railway and relocation of station • Expressway development
Bay Bridge	• Monumental icon for city • Segregation of road traffic	• Develop Danang Port system (Lien Chieu Port and Tien Sa Port) to function as integrated logistics and service hub for Danang as well as SFEZ and GMS

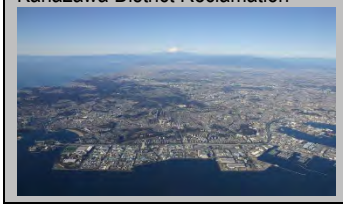
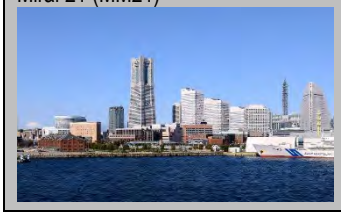
Source: JICA Study Team

Table 5.1.2 Six Cross-Cutting Actions in Yokohama and Application to Danang

Six Cross-cutting Actions	Key Approach for Success	Possible Orientations in Danang
Strong leadership and shared vision	• Leader of a city as a "manager" • Clear vision shared by the people	• "Facilitators" not "Regulators" • Realize vision / strategy of DaCRISS
Strategic project and institutional arrangement	• Integrated projects and synergy • Establishment of original institutions (legal, administrative)	• Elaborate integrated and sustainable development strategy • Rights conversion (pioneering case)
Organizational setup for overall policy implementation	• Planning Coordination Office • Open positions to talented people	• Coordinated area development scheme and institutions • Further nurturing human resources
Prioritization under constraints of finance and time	• Leveraging national/ private funds • Consensus building at early stage to ensure effectiveness of funds	• Involvement of Central Government • Land value capture schemes • Selection of focal new industries
Coordination with the private sector	• Developers' contribution towards infrastructure development • Incentives for technical innovation	• Land value capture schemes • Providing benefits to investors in strategic industries • Coordinated area development scheme and institutions
Public participation	• Community Development Council • Residential Land Development Guidelines	• District planning and special zones • "Community Watch" through updating Urban Karte by commune

Source: JICA Study Team

Box 5.1.1 Profile of Six Strategic Projects

Six Project	Purpose	Cost /Finance	Chronology
Intra-urban Highway Network Development 	Expressway network, distributing goods and people by formulating a trunk road network as the backbone of the City by Introducing an Unorthodox Underground Highway	Total cost: 115 billion yen. Fund 14% (State: 7%, Prefecture 3.5%, City 3.5%,), Grant (Prefecture 1%, City 3%), Loan (Metropolitan Expressway Public Corporation 82%) Length: 39.5km	1968: Negotiation for underground highway with Ministry of Construction Total extension of highway inside city is approximately 80 km by 1975, 192 km by 1985 (by 4 lanes).
Rapid Transit System Development (Yokohama Municipal Subway) 	Construct a rapid transit railway network connecting city centers and suburbs	3 Lines, Total: 53.8km, 970 billion yen.	1972: Opening of the 1st line, Termination of all city trams. 1975: Opening of the 2nd line: 1976: Opening of1st line extension and 3rd line 1985: Completion of the 1st line and 3rd line extension - (2004: Green Line started operation)
Kohoku New Town Development 	Build a new town to prevent urban sprawl with independently enjoy urban services by connecting to the urban centers by subway.	Total Area: 2530 ha Funded and operated by the Urban Renaissance Agency and private sectors	1967: Kohoku New Town Development Promotion Council was established. 1973: Development plan for the Kohoku New Town was drafted. 1983:Opening of the 1st town and apartment units
Kanazawa District Reclamation 	Reclaim its coastal areas for the creation of an industrial hubs and improve the living standards and amenities for its habitants	Total cost :41.3 billion yen, of which 28.8 billion yen was procured by bond,(Detuch Mark and Swiss Franc) and the rest was paid by the sales of the reclaimed land (1968-72)	1971: Reclamation program for the area beyond Kanazawa district is announced. 1974:Completion of District 1 1975: :Completion of District 2 1979: Established the Urban refuse recycling plant
Yokohama Bay Bridge 	Divert heavy truck traffic away from the city center by a bridge of 860 m long, across Tokyo Bay, also served as an icon for the waterfront city center.	Total cost: 25 billion yen. Funded by Metropolitan Expressway Public Corporation	1977: Bay Bridge Urban Planning was drafted 1980: Construction was started. 1989: Opening of the Bridge. 1999 – 2009 Construction of the national road underneath of the motor highway started
Revitalization of the Central District Minato Mirai 21 (MM21) 	Revitalize the port area and renew the city center through relocation of the city's shipyard	Land readjustment projects (101.8h) 176.6 billion yen by the Urban Renaissance Agency and private sectors Reclamation (73.9ha) by the City	1976: Mitsubishi Heavy Industry signed the relocation of their shipyard to the suburbs. 1980: Start of readjustment. Bridges, underpass, grade separation, moving walk, parks, etc. were established. 1999: Reclamation nearly ends. 2012: End of projects

Source: Formulated based on various documents of Yokohama City by the JICA Study Team

5.2 Approach to Sustainable Development (Vision and Goals)

5.6 In order to pursue sustainable and balanced development, Danang City sets their city development vision in the Amended Master Plan of Danang City to Year 2030, Vision to Year 2050 as "*Construct and develop Danang City to become specialized city at national level, with* orientation *to become a sustainable developed urban center at international level.*" From this, the study team proposes a redefined vision as follows:

Commitment to Environment City through competitive industries, high-quality human resource and efficient city management for and by all

5.7 It is becoming increasingly critical that the growth of Danang City is interacted with those of the region CFEZ. CFEZ needs a growth hub. Handicap confronting cities and provinces in CFEZ can only become competitive in the globalizing market when they are closely integrated, the roles are shared complementarily. Key factors to promote competitive and sustainable growth of Danang include the following (see Figure. 5.2.1).

(i) Danang must be prepared to grow from a million to a 2-3 million big city.

(ii) Danang has an increasingly important role as the engine of growth of CFEZ.

(iii) Danang is expected to demonstrate as a first model of competitive and sustainable Environment City in Vietnam.

(iv) Danang must develop new types of industries with comparative edges against those of NFEZ and SFEZ.

(v) Danang must develop its urban area to accommodate existing and emerging activities in livable, disaster resilient, eco-preserved, and public transport-oriented manner.

Figure 5.2.1 Approach to Sustainable Development

Source: JICA Study Team

5.3 Key Strategies

5.8 This section details the key strategies that can facilitate to link the vision and goals with specific projects and actions, provide broad directions for other projects and actions, and serve as guidance to monitor the implementation of related sectors. Based on the study and discussions held in the forums, the following are the key strategies to promote the vision and goals of Danang City:

(i) Regional Integration

(ii) Competitive Economic Development

(iii) Spatial Development Control and Management

(iv) Strategic Infrastructure Development

(v) Human Resource Development

(vi) Urban Sector Management

1) Regional Integration

(a) Concept

5.9 Danang is rather isolated geographically and has limited space for further development, while other cities and provinces in CFEZ are relatively small-scale urban agglomeration. All the available resources owned by CFEZ provinces must be consolidated and enhanced in order for them and Danang City to grow competitively. This approach is needed to be able to compete at international and national levels and enhance the growth of CFEZ collectively.

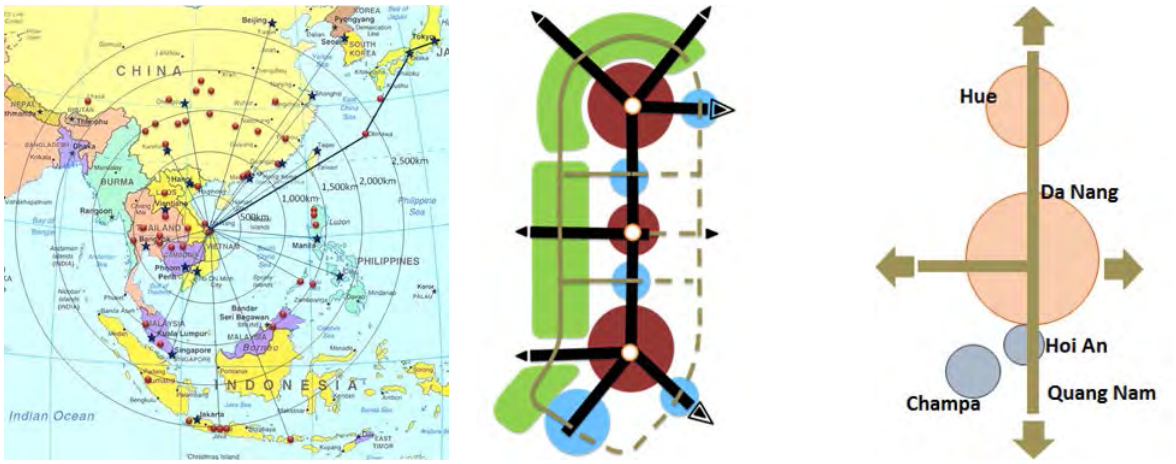
5.10 In order for Danang to grow to a competitive metropolis with a population of two to three million and function as a driving force in Central Vietnam, the key concept is “regional integration.” Regional integration refers to many aspects such as economic and industrial development, environmental management, housing provision, tourism promotion, health, and education, among others. The most critical aspect is transparent connectivity.

(b) Transport Connectivity at All Levels

5.11 The regional integration of Danang City is becoming more and more important for its competitive growth and of CFEZ because they are both rather isolated within Vietnam as well as in the region. Therefore, the regional integration of Danang must be looked into at the following three levels (see Figure 5.3.1).

(i) **At international/regional level:** Danang must be connected directly with growth centers Asia and Greater Mekong Subregion (GMS) and function as a competitive gateway for CFEZ through air, sea, and land. Airport renewal and opening of direct flights between Danang and several cities in Asia have been a great success in contributing to Danang City’s tourism expansion and enhanced recognition. With the city’s rich natural and cultural resources, it would attract more tourists and visitors. The expansion of airport services has also contributed to substantial increase in domestic tourism. As the infrastructure has improved, Danang and its adjoining areas can attract more attention in the market. Development must also be accelerated for port and shipping as well as roads connecting GMS countries. Strengthening of direct connectivity between Danang and international market through all means of transport and communications is particularly important.

Figure 5.3.1 Connectivity at Regional, National and CFEZ Levels



Regional Integration | National Integration | CFEZ Integration

Source: DaCRISS

(ii) **At national level:** The vast land of Vietnam has not been sufficiently connected to both the north-south and east-west directions. Especially in the central regions, the north-south transport connectivity is limited and east-west connectivity is still poor. Rich tourism resources and destinations are abundantly distributed and growth centers are emerging in CFEZ, but better quality transport infrastructure is needed for their connectivity,

(iii) While NFEZ and SFEZ have been developing at an accelerated speed thanks to the massive investment of the government as well as of the private sector, CFEZ has not been adequately connected with large growth centers. In order to achieve balanced development of the country, the Central Government must pay more attention to the development of core infrastructure, especially transport, to strengthen the national and international integration of Danang and CFEZ. The north-south transport network development including upgrading of NHI, construction of expressways, upgrading of VNR, construction of Highspeed Railway, and expansion of air transport and port system must be properly incorporated in the sustainable development strategies of Danang and CFEZ.

(iv) **At CFEZ level:** Cities and provinces in CFEZ are also weakly connected. As population economic outputs of each province are relatively small, the more they must be integrated to form a larger connected market. Locations of rich cultural and ecosystem resources that are spread in the region must also be integrated. Spatial integration at this level is particularly important in the following:

- Formulation of integrated urban area of Danang and adjoining suburban areas of Quang Nam Province
- Transparent connectivity among key destinations in CFEZ including Hue, Danang, Hoi An, Tam Ky, Champa, and Quang Ngu, among others

(c) Role-Sharing Among CFEZ Provinces

5.12 The role of Danang City is not only limited to contribute to its residents and business to the prosperity, but also is expanded to the neighboring cities and more to the central region of the country. Accelerated development and growth of Central Focal Economic Zone (CFEZ) is critical for balanced national development. Danang City must play a key role as the growth engine and service center with 2 to 2.5 million population. In that sense, Danang City needs to strengthen its integration with other provinces in the CFER (Quang Nam, Thua

Thin Hue, Quang Ngai, and Central Highlands, etc.) to meet their needs as well. It is also underlined that Danang City needs to strengthen international connectivity through the expansion of direct air, sea and land routes. Considering its geographical advantages, Danang City has high potential to be a competitive international gateway to serve the CFEZ and GMS.

5.13 At present, Danang City has various strengths, such as its strategic geographic location – the center of the country and gateway to the South China Sea from the East-West Economic Corridor (EWEC), its rapid economic growth in the past years, proximity to three world heritages, and renowned world-class beach resort. The city's weaknesses, on the other hand, are limited linkage with global markets and diminishing FDI attraction, small economic market, vulnerability to natural disasters, and fewer cultural and historical sites in the city compared to Hue and Hoi An.

5.14 According to DaCRISS, it is recommended that Danang needs to shift its current industrial development towards new types of more competitive industries that would generate higher value added and drive industrialization of CFEZ. Therefore, Danang was suggested to take lead in the development high-tech environmental and service industries, while conventional industries are to be located in other CFEZ provinces. Quang Ngai can offer attractive locations for heavy industries. Role-sharing in industrialization strategies among the CFEZ provinces is expected to strengthen competitiveness in industrial development.

Table 5.3.1 Possible Role-sharing among CFEZ Provinces

Main Agenda		T.T. Hue	Danang City	Quang Nam	Quang Ngai	Binh Dinh
Gateway Function		B	AA	B	AA	A
Strategic Development Themes	Tourism	AA	AA	AA	A	A
	Conventional Industry (heavy industry)	B	B	B	AA	B
	Services	A	AA	B	A	A
	New Business (health, education, environment)	AA	AA	A	B	B
	Human Resource Development	AA	AA	A	A	A
	Environmental Management	A	A	A	A	A
	Cultural Value Enhancement	AA	A	AA	A	A
Urban Development		A	AA	A	A	AA
Rural Development		A	B	A	A	A

Source: DaCRISS based on 3rd Steering Committee in 2009.
Note: AA = Regional role, A = Main role, B = Secondary role.

2) Competitive Economic Development

(a) Approach

5.15 For Danang to become an engine for growth of CFEZ, the city will need to become a larger and more influential home to 2-2.5 million people in 2025 as planned in its latest SEDP. The natural population growth of Danang is approximately 1.0% per year and its social population growth between 2000 and 2013 is a mere 1.9%. The city requires an annual growth of 5.4% to realize their plan. Drastic changes and bold actions are needed to establish a unique competitive edge to attract more in-migrants. One of the most fundamental issues they face is determining ways to develop new industries in order to absorb increased labor.

5.16 In order to demonstrate the future industrial development strategies, any possible competition must be considered. For example, one of the major weaknesses of Danang is its relatively small market and limited accumulation of businesses and resources in comparison to Hanoi and HCMC. This rules out the alternative of a secondary-industry led development as seen in the two aforementioned megacities, such as through resource-dependent heavy industries. Moreover, although Danang currently has a fair ratio of primary industries (agriculture, forestry, and fisheries), the volume of GRDP and employment being generated are relatively small.

5.17 This narrows down to the possibility of a tertiary-industry led development, which already accounts for more than 60% of the city's GRDP. This direction has been confirmed with the city in past forums organized by this study. To realize this economic development strategy, service industries to be developed and specific actions to be taken must be identified.

5.18 **International Competition:** According to the Provincial Competitive Index 2014 Report, important factors that investors consider when making an investment decision are the following:

(i) **Competitors:** Around half of the Foreign-Invested Enterprises (FIEs) currently in Vietnam consider other countries (most commonly, China (20.5%), Thailand (18%), and Cambodia (13.9%)) before selecting Vietnam as their ultimate destination. These shares have been increasing since 2013.

(ii) **Investment Strategy:** Among the investors considering other countries, 83% selected Vietnam over the competition. The remaining 17% still selected Vietnam, but as part of a multi-country investment strategy.

(iii) **Comparative Advantages:** FIEs noted that Vietnam fares well on tax rates (generous tax incentives at the national and local levels), expropriation risk (property security increased coinciding with the passage of the amended Land Law in 2013), policy stability (Danang stands out as most transparent in documentation for foreign investment that results in predictable policy implementation), and ability to influence policies that affect their business (FIEs report Danang local officials as highly responsive to concerns).

(iv) **Comparative Disadvantages:** FIEs consider Vietnam to be significantly less attractive when it comes to corruption, regulatory burdens, quality of public services such as education and healthcare, and the quality and reliability of infrastructure. Investors find Vietnam's infrastructure similar to Cambodia and Laos with the exception on telephone services.

5.19 **Competition with Hanoi and HCMC:** For Danang, competition with Hanoi and HCMC is most vital to its success in attracting foreign investment. Table 5.3.2 compares the three cities from various aspects critical in investment decisions. It could be generally stated that salaries of human resources are relatively low in Danang (26-77% higher in Hanoi or HCMC), as the salary range is Class II standard. The salary of managers in the manufacturing industry is 62%-77%, which is higher in Hanoi or HCMC compared to Danang. Danang may be less volatile in fees for land lease, rental, and electricity fees. There are also differences observed in fees for shop/showroom rental and water, which are both significantly lower in Danang. Although, it is important for the city not to promote their "relatively low" fees to attract investors as this is only a temporary advantage that is subject to external factors. The city should focus on establishing long-lasting investor attractiveness. They could consider a bold strategy to exempt foreign investors, for instance, from all land lease and rental fees. Provision of land and offices at no cost might have more impact and increase attention from investors in the long run. This is merely one example, but it is this level of impact that Danang City must make in order to differentiate itself from others in the face of competition.

5.20 Shipping costs are much lower in HCMC compared to Danang, which limits its potential to become a port hub of the region. According to a local operator, it is cheaper to transport goods by road to HCMC and then ship it abroad than ship directly from Danang.

Table 5.3.2 Comparison of Investment Conditions in Danang, Hanoi and HCMC

Aspect			Danang	Hanoi	HCMC
Accessibility	Distance of Hi-tech Park from	City center	22km	30km	15km
		Airport	17km	60km	18km
		Major ports	25km	20km, 150km	15km
Salary (USD/month)	Manufacturing	Worker	121	155	173
		Engineer	218	355	347
		Manager	499	773	810
	Non-manufacturing	Worker	285	389	512
		Manager	903	957	1,193
Land lease fees (USD/m^2/year)	Average		0.11-0.13	0.13-0.22	0.11-0.25
	Hi-tech Park		0.25-0.5	0.8-1.2	0.8-1.2
Rental fees (USD/m^2/month)	Within Industrial Park		0.04-0.11	0.13-0.23	0.14-0.42
	City Center		12-25	26-43	17-44
	Showroom		10-25	35-210	33-100
Infrastructure management fee (USD/m^2/year)			0.2	0.25	0.48
Electricity fees (USD/kwh)			0.09	0.09	0.09
Water fees (USD/m^3)			0.24	0.44	0.40
Wastewater treatment fee (Hi-tech Park) (USD/m^3)			0.2-0.3	Defined by PMU	0.48
Transport	Sea (USD, for 40 ft. container fee)	To Japan	1,240	1,090	340
		To L. A.	3,520	3,940	2,500-3,700
	Air (no. of destinations, international direct flights)[1)]		12	34	24

Source: JICA Study Team based on information from Danang City and JETRO (2015).

1) Destinations of international direct flights from Danang are: Singapore, Kuala Lumpur, Siem Reap, Bangkok, Guangzhou, Macao, Hong Kong, Hang Zhou, Busan, Beijing, Incheon, and Narita.

5.21 Considering the characteristics of Danang, types of industries to expand and focus will include more high technology-based, environment-related, tourism, education, medicare, and other services. The industrial development of Danang has also to bear in mind that it must be considered not only in the territory of Danang, but also in CFEZ. For this, Danang's basic role is to become a high quality service center and international gateway of CFEZ.

(b) Development of Integrated and Competitive Economic System

5.22 Danang needs a different approach and strategies from those of NFEZ (Hanoi Region) and SFEZ (HCMC Region) for sustainable economic development. It is highly

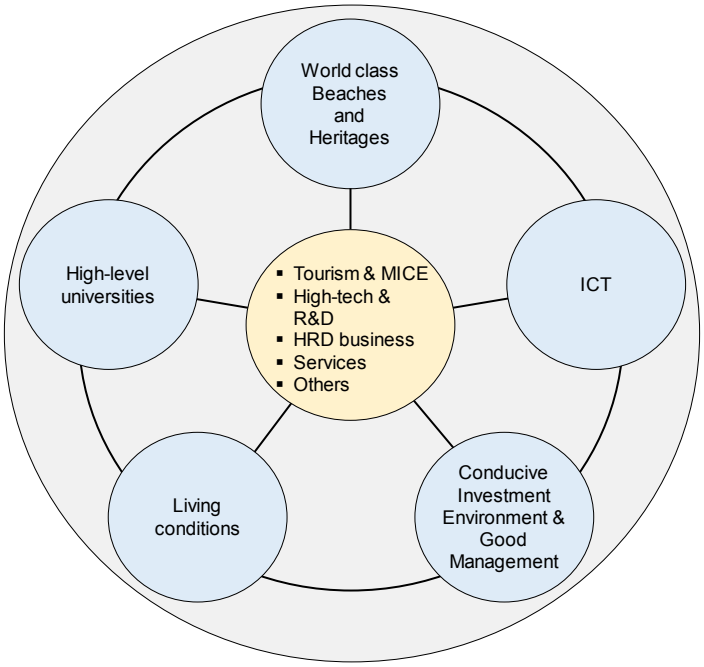
possible by integrating high potential industries and economic sector involving positive factors such as world class national and cultural resources, rich human resources, conducive investment environment and good city governance. High potentials have not been sufficiently tapped. Umbrella strategy for development of integrated economic system is briefly as follows (see Figure 5.3.2)

(i) Positive factors that provide foundations for competitive economic development of Danang include world class beaches and heritages, high-level university, ICT, living conditions and investment environment.

(ii) While the positive factors are farther improved and strengthened, opportunities for nurturing existing and new industries/businesses competitively will increase. They include tourism, high-tech and environment industries, R&D, HRD related business and various services.

(iii) Development of these activities must be coordinated and properly located in overall urban area to ensure social and environmental sustainability. In this context, development of livable city which is a main course of the study is important.

Figure 5.3.2 Concept of Integrated Economic Development



Source: JICA Study Team

(c) Information Technology

5.23 Danang has been recognized as one of most accountable, environmentally managed, and competitive and beautiful tourist town besides good IT infrastructure in Vietnam. These positive factors attract IT industry, not only domestic companies, but also foreign ones. FDI projects for ICT industry have been rapidly expanded to 50, of which Japanese projects are 20 as of 2015. Other major investors include, among others, USA, Australia, France, Germany, New Zealand, UK, etc. The largest investment is as large as USD 3 million, and the smallest was USD 50,000. The number of ITC companies including domestic companies are 413. Domestic ICT giant companies such as FPT, SOFTECH, and UNITECH have already invested in Danang. Overall sales of ICT industry in 2014 reached

USD 736 million, increased by 8.4% compared to 2013. Danang succeeded in increasing export value of ITC firms accordingly in recent years as follows.

Table 5.3.3 Export Value of ICT Firms

Year	Export Value (USD million)
2010	10.3
2011	13.8
2012	20.8
2013	25.0

Source: ICT Industry Development Plan 2015-2020, Department of Information and Communication

5.24 Upon review of JBAD's request outlined in Table 4.1.2, it is critical to establish well equipped office space living up to the standards and requirements for IT firms.

5.25 With regard to human resources, the private university that includes IT courses also established besides the national Danang University. The current labor in ICT related industry is estimated as 19,741 in 2014, of which approximately 28% each work in hardware and software, and 14% in digital contents, and the rest 30% work in administration, sales and marketing, etc. The ratio of engineers in Danang is still less than 9% of total labor in 2013, but it is estimated to increase up to 33% in 2030 by way of expanding IT related courses and institutions and inviting talented engineers from other regions. In the medium and long term, talented engineers will be expected to increase in Danang.

(d) Supporting Small and Medium Enterprises[2]

5.26 According to DaCRISS, the government defines small and medium enterprises (SMEs) as those independent business and production establishments that have registered their business under the current legislation and a registered capital of less than VND10 billion or an average number of annual employees of less than 300.[3] As of the end of 2006, Danang had 3,271 enterprises, 3,201 or 98% of which were enterprises regarded as SMEs employing less than 300.[4] Fifty-eight percent (58%) of them (1,913 enterprises) are very small with less than nine employees. State-owned enterprises (SOE) are generally large in size and Danang has no more than 100 SOEs in total[5]; the majority of these SMEs is considered as private. The city might also have a number of unregistered and informal household businesses. Private SMEs have become a new dynamic force in economic development. The share of registered private enterprises in the total labor in enterprises in Danang reached 50% in 2007, which is an increase from 31% in 2004.[6] The capital share of Danang's private enterprises also significantly increased from 18% in 2004 to 37% in 2007.[7]

5.27 Despite recent developments, private SMEs in Danang still seem weak and have not developed their potentials. Many informal household businesses tend to stay small. SMEs in the country and in Danang face various difficulties, such as access to finance and land,

[2] Excerpt from DaCRISS Final Report Part IV.
[3] Decree 90/2001/CP-NDD, 23 November 2001.
[4] p.182,Table 80, Statistical Yearbook of Vietnam, 2007, General Statistical House
[5] p.48, Table 27, Danang Statistical Yearbook 2008, Danang Statistics Office
[6] p.49, Table 28, Danang Statistical Yearbook 2008, Danang Statistics Office
[7] p.50, Table 29, Table 28, Danang Statistical Yearbook 2008, Danang Statistics Office

skilled labor shortage, bureaucratic hurdles, poor infrastructure and corruption.[8] According to DaCRISS survey of business establishments in Danang in 2009, access to land is one of the major obstacles faced by local manufacturing firms. The questionnaire survey for commune leaders also showed a similar result (see Table 5.3.4). Land available to local small private businesses is limited. It is preferable for the city authority to develop 'low-grade' industrial parks for private SMEs such as industrial clusters instead of expanding large and sophisticated industrial zones.

5.28 Access to finance seems to be another major constraint for SMEs in Danang according to the two surveys. To enhance their access to financing, several commercial banks[9] in Danang have set up special lending programs for local entrepreneurs. Vietnam Bank for Social Policy (VBSP) also has a lending program for small business owners[10] at subsidized interest rates. The lending program to private SMEs and small businesses should be further expanded to alleviate financial constraints.

Table 5.3.4 Required Inputs to Facilitate Development in Danang

Input	Share (%)
1. Skilled Labor	50
2. Price of Physical Inputs	50
3. Knowledge and Capacity of People	38
4. Land for Enterprises	30
5. Land for Agricultural Production	29
6. Access to Credit	21
7. Land for Housing	16

Source: DaCRISS Commune Survey, 2008

5.29 Technical and management support should also be required to expand the private business sector. The focal points of SME support program in the country include access to international standards and certification and support for startup and incubation services for young entrepreneurs as well as modernization of commercial dispute resolution.[11] With regard to incubation services, for instance, the Danang University of Technology implemented a pilot project for its graduates and faculty members to set up their own businesses within the university premises.[12] The university offered financial support and production space to the entrepreneurs. According to the University Rector, four commercial projects have been realized so far. Considering the difficulty of accessing land and finance, the provision of incubation services to young entrepreneurs should be very effective in creating new SMEs. A variety of practical textbooks on marketing, storage management, accounting, cost calculation, HRD management, and labor and productivity were prepared, while master trainers were developed based on the textbooks. The know-how and teaching materials developed in this program should be further utilized.

(e) High-Tech Agriculture, Fisheries, and Forestry

[8] "Investment Climate Assessment, 2006 Vietnam", World Bank
[9] For instance, TECHCOM Bank started a new lending program for SME and Micro business unit in 2008, with technical support from HSBC (Interview with the vice director of the bank on 10 November 2008).
[10] As of July 20, 2009, the bank's Danang branch lent to 45,000 households and 18 SMEs in the city. Average amount of loan for poor households was VND6.6 million, while that for SMEs was VND241 million (Interview with the director on 30 July 2009).
[11] "Approaches to Support Development of an Enabling Environment for Small Enterprises, Country report: Viet Nam", August 2002, GTZ.
[12] Information obtained from an interview with the rector of the Danang University of Technology on 11 November 2008

5.30 It is important to pay attention to abundant primary industry products and develop "food processing and distribution mechanism" to combine the primary, secondary and tertiary industries to generate new added values. The beneficiaries of this added value will be the farmers/ fishermen themselves instead of the businesses in the conventional secondary and tertiary sectors.

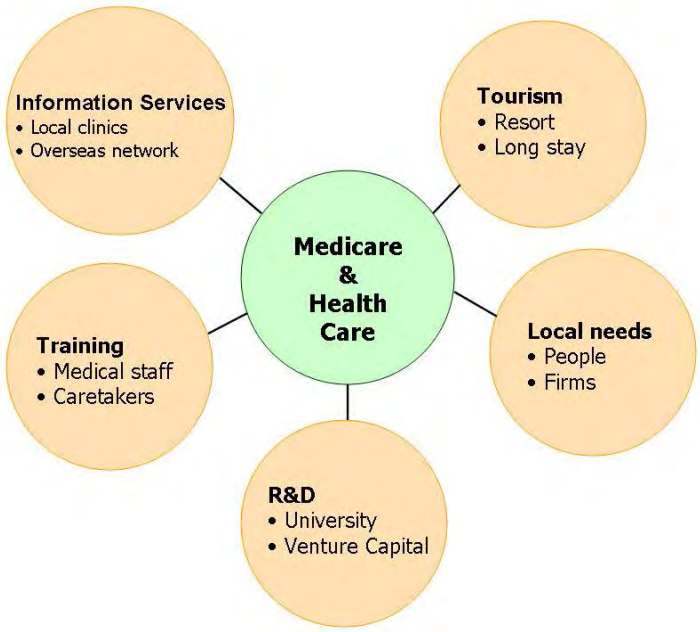
5.31 Some countries in Europe provide innovative and successful practices in agriculture. The Netherlands specializes in facility-based agriculture development, such as hothouse cultivation of flowers and plant factories managed by IT technology. This enables the nation to have a competitive edge in the international market by streamlining production and distribution. In Denmark, with its limited agricultural land, it has a comparative advantage in food processing especially for livestock processed products. Switzerland pursues an integrated approach for agriculture and landscape preservation and this provides a favorable environment for the nation's tourism development strategies as well.

(f) Medical Industry

5.32 According to the amended Master Plan of Danang City, the city has a variety of plans to develop hospitals in the future with the required level of services for a regional city with a population of 2 to 2.5 million. Some major development plans include, among others, Central Hospital, Woman's Hospital, Military Hospital, Children's Hospital, Traditional Medicine Hospital in Hai Chau District, Mental Hospital, Cancer Hospital in Thanh Khe District, and an Eye Hospital in Ngu Hanh Son District. There will clearly be a demand for supporting industries in the medical sector.

5.33 As affluence of the society increases, people's concern on better medicare and health has been increasing. There is an explicit trend in the Southeast Asia including Vietnam where the medical sector is becoming a competitive business in the local and regional market. While HCMC and Hanoi provide such services, Danang is provided with better opportunities to cover diversified services in superior living and natural environment.

Figure 5.3.3 Opportunities of Medicare/Health Centre in Danang



Source: JICA Study Team

(g) Tourism Development

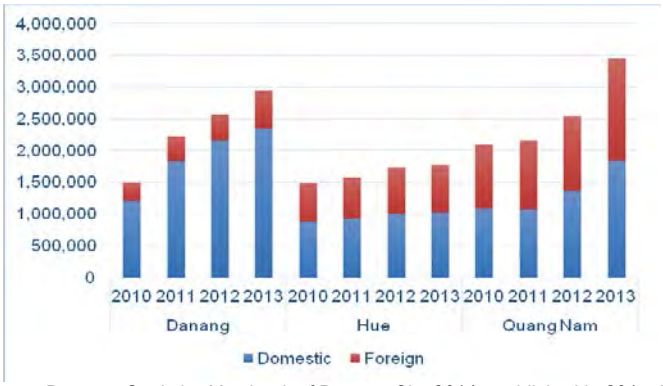
5.34 **Regional Implications:** Danang is bound to succeed its economic development centered on tourism, additionally, when it is recognized as hub of Central Vietnam (Hue, Danang, and Hoi An of Quang Nam Province) and as a single tourism destination. The existence of three World Heritages, beautiful beaches and coastal areas as well as preserved forests and mountain areas in a relatively compact area is distinct not only in Vietnam but also in the whole Asia region. Therefore, it is important to always bear to consider regional implications for tourism development and ensure regional cooperation in all dimensions.

5.35 The Central Coast region has enjoyed sound growth in international tourism in the recent years. The foreign visitors of Danang, Hue, and Quang Nam have already reached approximately 3 million in 2013. According to the statistics, annual growth of visitors in these three regions is approximately 18% for domestic visitors and 16% for foreign visitors in the period of 2010 to 2013. While Quang Nam distinctly attracts more international visitors, nearly half of the visitors are foreign. Danang, meanwhile, has more domestic visitors at over 80% of the total visitors. There is a need for further actions to attract more foreign visitors.

5.36 **Tourism Promotion Position and Branding:** According to the DaCRISS tourism survey, promotion and marketing for the region has not been adequately undertaken because of the following issues:

(i) Collective image of the region (Hue, Danang, Quang Nam) is not clearly established that the synergistic effect among these provinces is spoiled;
(ii) Tourism promotion is undertaken rather separately among key stakeholders including Vietnam National Administration of Tourism (VNAT), provinces, hotels, and airlines among others. This weakens the impacts of promotion activities and fails to enhance a collective image as a major tourism destination;
(iii) Promotion materials are not prepared in a coordinated manner, they lack attractive photos, and need to be properly translated;
(iv) Lack of tourism information at gateways, towns, and tourism destinations does not facilitate smooth tourism activities, transport, and more destination choices;
(v) Low quality of services in various hotels, restaurants, shopping areas, and transport service discourage many potentially returning tourists; and
(vi) Overall deficit of funding to tackle the above issues.

Figure 5.3.4 Number of Visitors to the Central Vietnam



Sources: Danang: Statistics Yearbook of Danang City 2014- published in 2015, Hue: Statistics Yearbook of Thua THien Hue Province 2014 – Published in 2015, Quang Nam: Statistics Yearbook of Quang Nam Province 2013 Office published in 2014

5.37 Out of the characteristics associated with Vietnam, while culture, people, cuisine, adventure and hospitality are all important aspects, findings according to the ESRT tourism report[13] show that nature is less strongly associated with repeat than first time visitors. According to the DaCRISS tourism survey for tourism operators, some opinions on a promotion slogan for the region were collected. These are "Central Vietnam – World Heritages and a Peaceful Environment," "Sea and Sunshine – One Road, Three Heritages," "One Destination Meets Three Joys," and "A Golden Triangle of Tourism."

5.38 Danang was selected by the prestigious travel website Trip Advisor as the Top Travelers' Choice Destination in "The Rise in the World." The voting result of TripAdvisor is based on evaluation and positive comments of tourists about attractions, accommodation facilities, and restaurants. According to the Trip Advisor website where tourists may also add comments, photos, and other information, Danang has 122 hotels, 203 restaurants, and 74 tourist destinations, which and is the most number of destinations compared to others on the rise. Attractions which received many votes include Marble Mountains, Linh Ung Pagoda, Rong (Dragon) Bridge, and Han River among others.

5.39 The InterContinental Danang Sun Peninsula Resort was also recognized as World's Leading Luxury Resort 2014 by the World Travel Awards; the award is considered an "Oscar Award of the tourism industry." These awards marked positive development and enabled mass media promotion of tourism in Danang in 2014.

5.40 **Matching Markets and Products:** Identifying key tourism products according to market is vital. The ESRT tourism report shows that VNAT's marketing approach is to work more closely with the travel trade to strengthen the following:

(i) **High spending elements of current product offers**, by addressing specific segments within established markets for culture, city breaks, coastal and mountain tourism (North Asia, Europe, North America), and by helping the trade to identify new segments in new markets (India, South America, Middle East).

(ii) **Improving high volume coastal, cultural, city and mountain products**, by concentrating on better destination management and product quality, so there can be sustainable growth from larger ASEAN economies, North Asia and Russia as well as the domestic market.

(iii) **Meeting, Incentive, Convention and Exhibition (MICE) and Film:** The MICE industry consists of multi-sectors of hospitality service including lodging, food and beverage, catering, convention service, convention facility supply, transportation, retail, entertainment, etc. This is an important segment of Danang's tourism industry that has great potential and can be competitive among other cities worldwide. The Master Plan of Culture, Sports, and Tourism of Danang City to 2020 acknowledges the significance of MICE, but has yet to have specific policies for MICE's further development as a potential economic engine. APEC 2017 will be held in Vietnam with Danang as one of the host cities. This event must be used to greatly improve service and infrastructure for Danang to become one of the top destinations of MICE in the region. Specific measures need to be identified and executed by the city administration and private sectors[14].

[13] Vietnam Tourism Marketing Strategy to 2020 & Action Plan: 2013-2015 (proposed), European Union funded Environmentally & Socially Responsible Tourism (ESRT) Capacity Development Programme.

[14] A film commission is a specialized office under the authority of a government entity with the purpose of promoting the city through the development of film, video, and multimedia production, and many cities of Japan including Yokohama has one. It acts as liaison

Table 5.3.5 Danang and CFEZ's Key Products According to Identified Markets

Product		N. Asia	ASEAN	Australia	Russia	N. America	Europe	New	Domestic
Culture	World heritage sites	●	●	●	●	●	●	●	●
	Ethnic culture (Cham)	○	○	○		○	○	●	○
	New life style	●	●	●		●	●	●	
Eco-based	Son Tra, Cu De areas	○		○		○	○		●
	Ba Na mountain resorts	○	○	○		●	●		○
Coast	Beach holiday	○	○	●	●	○	○	○	●
	Cruise liners (Tien Sa)	○	○	○	○	●	○		
City breaks	City breaks	○	○	●					
	Short breaks	●	●					○	○
Special interest	Classic tour	●	○	●	○	●	●	●	
	MICE	●	●	○	○	○	○	○	○
	Golf	○	○	○		○	○		

Source: Adapted from framework proposed in "Vietnam Tourism Marketing Strategy to 2020 & Action Plan: 2013-2015 (proposed), European Union funded Environmentally & Socially Responsible Tourism (ESRT) Capacity Development Programme".
Note: ● = strong products for the target market, ○ = less strong products for the target market

(iv) **Health and Medical Service Resorts:** Highly qualified medical service is required to attract high-end tourism. Since the current medical system in Danang is limited, the city must continue to attract health and medical related industries.

(v) **Education – National, International and Promoting Professional Training Courses:** Danang is already an educational center of Central Vietnam, which attracts many students from other central provinces. In order to meet global companies' needs, there more sophisticated educational institutions are required. The good weather and sound accommodation can also attract keen students to attend short courses for specific profession/s.

(vi) **Urban Amenity, Night Life, Amusement and Activities, Sports, and Adventure:** Danang has beautified the river side of Han River, developed Ba Na mountainous resort, and have more opportunities to introduce good night life and amusement activities. The private sector's initiative should be promoted for further investment.

5.41 **Tourism Impact:** Tourism has already produced substantial employment and share of the city's economy, but there are great potentials to grow more. While the share of the tourism sector with regards to the overall national GDP and employment in Vietnam in 2014 is at 9.3% and 7.7% respectively, the contribution of Danang's tourism sector for both is 9% and 11% respectively in 2015. This is expected to grow further at around 18% and 24% when total visitors reach over 10 million by 2025. It could be said that pursuing economic development centered on tourism is not only an ideal scheme, but also realistic. Calculations indicate a slight oversupply of hotels in 2015, however, this is due to the foregoing construction with respect to demand. This shall be counterbalanced as the number of tourists increase in the future.

between local communities with production entities and proportionally increasing the economic impact of the industry. The economic impact generated by productions can positively impact local businesses. In the end, film production might generate sustained growth in tourism when a region or community is featured in a successful film. This kind of promotion will be one of the must-try actions for the tourism development plan by coordinating with both domestic and international producers.

Table 5.3.6 Estimated Tourism Indicators

Item		2005	2010	2015	2020	2025
Tourist Inbound	Foreign	-	370,000	955,000	1,550,000	2,537,500
	Domestic	-	1,400,000	2,845,000	4,660,000	7,612,500
	Total	-	1,770,000	3,800,000	6,210,000	10,150,000
Average Stay (days)	Foreign	2.00	2.10	2.20	2.60	3.00
	Domestic	1.80	2.00	2.20	2.60	3.00
Average Expenditure (USD/day/visitor)	Foreign	62	65	80	120	150
	Domestic	22	25	30	40	50

Source: GSO for past figures, SEDP for 2020 figure, Study Team estimate based on SEDP for 2025 figure, Master Plan for Tourism Development, Danang City for 2000-2010, Study Team estimate based on Plan for 2015-2025

Table 5.3.7 Estimated Tourism Impact (GRDP and Employment)

GRDP (USD mil., 2010 price)	2015	2020	2025
Tourism	203	553	1,304
Tertiary Sector	1,338	2,577	4,961
All Sectors	2,308	4,053	7,214
% to Tertiary Sector	15	21	26
% to All Sectors	9	14	18
Employment (person)	2015	2020	2025
Tourism	56,648	123,434	252,184
Tertiary Sector	325,000	536,250	682,500
All Sectors	500,000	825,000	1,050,000
% to Tertiary Sector	17	23	37
% to All Sectors	11	15	24

Source: Calculated by GSO statistics and employment structure assumed in latest SEDP for tertiary and total employment.

(h) Potential Types of Environmental Technology-Based Business

5.42 As outlined in DaCRISS, there is currently a wide range of eco-business opportunities, which can be introduced and developed in the city (see Tables 5.3.9 and 5.3.10). Experiences from Japan are summarized as well (see Tables 5.3.8). The role of science and technology is crucial for the success of such new industries.

Table 5.3.8 Eco-Business in Japan

Sector			Description
Technical Environmental Business	End-of-pipe (Pollution prevention)		• Air pollution measurement/prevention, Water pollution measurement/prevention, Soil pollution measure device/ purification, Combined Household Wastewater Treatment Facility
	Waste recycle & 5RE	Waste recycle	• Waste insulator, Intermediate treatment facilities and final disposal facilities, Hazardous waste management
		5RE	• Classification/Dismantling, Emission reduction/weight reduction/volume reduction of waste, Reuse, Renew, Fuel conversion
	Eco-material		• Biodegradable resin, Biodegradable lubricating oil, Titanium dioxide (Photo-catalytic), Non-wood paper, Tin-free paint for ship bottoms, Non-VOC ink
	Environmental-conscious facilities (housing)		• Environmental symbiotic housing, saving energy housing with thermal insulation, high airtight and high insulation, sick house syndrome measures, Green roof and green wall, recycled waste water, rain water utilization
	New energy/ Save energy	New energy	• Natural energy (solar power, solar thermal use, wind power, aquamarine power, ocean thermal energy conversion, hydrogen energy (fuel cell, hydrogen storage alloys), plant biomass energy, waste to energy (solid fuel, biomass energy of wood and hazardous waste)
		Save energy/ Unused energy	• Co-generation system, Heating pump, Waste thermal & unused energy utilization system, energy saving equipment
	Nature renovation		• Green/ afforestation business, bio-tope, renovation of nature oriented river/ natural reproduction river, artificial beach, soil improvement, agricultural land improvement, forest renovation, natural conservation oriented agriculture
Service Environmental Business	Environmental consulting		• Environmental management system introduction support, ESCO (environmental service company), Eco-hotel promotion, Purification of polluted soil (factory), Real estate evaluation, Environmental device lease
	Environmental impact assessment		• Environmental survey/ analysis/ assessment
	Information/ Education		• Environmental information disclosure (environmental report, environmental account), Environmental education and human resource service, Environmental related information media, Eco-tourism, Environmental advertisement
	Finance		• Eco-foundation(investment trust), Environmental Impairment Liability Insurance, Emission trading
	Distribution		• Eco-goods innovation, Eco-shop/ Mail order, Secondhand market, Recycle resources market
	Logistics		• Waste transport (Vein logistics)

Source: Adapted from DaCRISS.

Table 5.3.9 Potential Types of Eco-Business in Danang

		Category	Example of Eco Businesses
Environmental Pollution Control	Equipment and Material for Pollution Control	Air Pollution Control	Piping, Bulb, Catalyzed reactor, Chemical treatment equipment, Dust collection equipment, Separation equipment, Incineration equipment, Scrubber, Deodorization Equipment
		Waste Water Treatment	Aeration system, Chemical treatment equipment, Biological treatment equipment, Defecation tank, Oil separator, Film, Strainer, Sewerage treatment equipment, Water quality control, Recycled water production equipment, Piping, Bulb equipment
		Solid Waste Treatment	Storage and treatment equipment of hazardous waste, Collection and transportation equipment, Treatment and disposal equipment, Collection bags, Container, Box, etc., Sorting equipment, Recycle machinery, Incineration equipment
		Purification of Soil and Water Quality	Adsorbent, Treatment equipment, Water treatment equipment
		Noise and Vibration Prevention	Muffler, Silencer, Sound absorbing material, Anti-vibration device, Sound-proof wall of highway

		Category	Example of Eco Businesses
		Environmental Measurement, Analysis, Assessment	Measurement, Monitoring equipment, Sampling equipment, Control device, Data collection device, other equipment and device
		Others	
	Service	Air Pollution Control	Emission monitoring, Assessment/Evaluation/ Planning
		Waste Water Treatment	Sewerage treatment, Water treatment supply, Pipe installation
		Solid Waste Treatment	Emergency response, Leakage treatment, Waste collection/ transport/ disposal, Management of waste disposal facilities, Recycle (classification/ packing/ washing), Operation of recycle facilities (Material recycle), Hazardous waste disposal, Medical waste management
		Purification of Soil and Water Quality	Purification equipment, Operation of water treatment facilities, Service for industries
		Noise and Vibration Prevention	Assessment/ Monitoring
		Environmental R&D	Low environmental load process, Emitted load reduction
		Environmental Technology	Design/ Making specification/Project management, Ecosystem study, Environmental impact assessment, Audit, Water treatment, Environmental planning, Risk evaluation, Hazard evaluation, Laboratory/ Field study, Environmental economy study, Legal service (Management of environmental regulation) Environmental management
		Analysis, Data Collection, Measurement, Assessment	Measure and monitoring, Sampling, Sampling treatment, Data collection, Others
		Provision of Education, Training and Information	Environmental education, Training, Environmental information search service, Management and analysis of environmental data
		Others	
	Construction and Set up of Equipment	Air Pollution Control Equipment	
		Waste Water Treatment Equipment	Sewerage system, Waste water treatment system
		Solid Waste Treatment Equipment	Waste disposal, Storage, Disposal facilities, Hazardous waste treatment facilities, Recycle facilities
		Purification Equipment of Soil and Water Quality	
		Noise and Vibration Prevention Equipment	Sound-proof wall of Highway
		Environmental Measurement, Analysis, and Assessment Equipment	
		Others	
	Environmental Load Reduction Technology and Goods	Environmental Load Reduction and Save Resources Technology and Process	Environmental Load Reduction / Efficient Use of Resources Technology, Biotechnology
		Environmental Load Reduction and Save Resources Goods	Environmental Load Reduction / Efficient Use of Resources Goods
	Efficient Use of Resources	Indoor Air Pollution Control	
		Water Supply	Portable water treatment equipment, Purification system, Portable purification and water supply device
		Eco-material	Used paper, Other recycle products
		Renewable Energy Facilities	Solar power plant, Wind power plant, Tidal power plant, Geothermal power plant, Others
		Save Energy and Energy Management	
		Sustainable Agriculture and Aquaculture	
		Sustainable Forestry	Afforestation, Forest management
		Natural Disaster Prevention	
		Eco-tourism	
		Others	Nature conservation, Resource management, Machine/Furniture repair, Housing reform/mend, Green city, etc

Source: Adapted from OECD

Table 5.3.10 Potential Types of Energy Business in Danang

Type	Features
1. CCT (Clean Coal Technology)	This is technology being developed that aim to reduce the environmental impact of coal energy generation. These include chemically washing minerals and impurities from the coal, gasification (see also IGCC), treating the flue gases with steam to remove sulfur dioxide, carbon capture and storage technologies to capture the carbon dioxide from the flue gas and dewatering lower rank coals (brown coals) to improve the calorific quality, and thus the efficiency of the conversion into electricity.
2. CCS (Carbon Dioxide Capture and Storage)	This is a technology based on capturing carbon dioxide (CO2) from large point sources such as fossil fuel power plants and storing it away from atmosphere by different means.
3. GTL (Gas to Liquid)	This is a refinery process to convert natural gas or other gaseous hydrocarbons into longer-chain hydrocarbons such as gasoline or diesel fuel. This is clean energy without sulfur and benzene. While LNG needs to be liquefied by radiator at ultra-low-temperature, GTL can be transported at fixed temperature.
4. Solar Power	Solar power is produced by collecting sunlight and converting it into electricity. This is done by using solar panels, which are large flat panels made up of many individual solar cells.
5. Solar Thermal Power	Solar thermal power is a technology for harnessing solar energy for thermal energy (heat), which is converted solar energy directly into electricity. Solar thermal collectors are defined by the USA Energy Information Administration as low-, medium-, or high-temperature collectors.
6. Solar Thermal Use	Solar Thermal Use is defined thermal use of solar water heater on the roof, hot water supply and heater by solar system and so on.
7. Passive Solar	Passive Solar technologies are means of using sunlight for useful energy without use of active mechanical systems. Such technologies convert sunlight into usable heat (water, air, and thermal mass), cause air-movement for ventilating, or future use, with little use of other energy sources. A common example is a solarium on the equator-side of a building. Passive cooling is the use of the same design principles to reduce summer cooling requirements
8. Biomass Power/ Waste Power	They are the direct combustion generation from ordinary waste which contributes to biomass component and woody biomass. They also include biogas and gas energy generation from sewerage sludge, food waste, and animal waste.
9. Biomass/ Waste Thermal Use	They are the direct combustion generation from ordinary waste which contributes to biomass component and woody biomass. They also include thermal power use of biogas and gas energy generation from sewerage sludge, food waste, and animal waste.
10. Biomass Fuel/ Production of waste Fuel	They include RDF (Refuse Derived Fuel) which is produced by shredding and dehydrating municipal solid waste (MSW) in a converter or steam pressure treating in an autoclave, wood pellet fuel, bio-ethanol, BDF (Bio Diesel Fuel) which is produced from waste oil.
11. Wind Power	Wind power is the conversion of wind energy into a useful form of energy, such as electricity, using wind turbines.
12. Hydroelectric Power	Hydroelectric Power is produced through use of the gravitational force of falling or flowing water.
13. Geothermal Power	Geothermal power is power extracted from heat stored in the earth. This geothermal energy originates from the original formation of the planet, from radioactive decay of minerals, and from solar energy absorbed at the surface. There are three geothermal power plant technologies being used to convert hydrothermal fluids to electricity. The conversion technologies are dry steam, flash, and binary cycle.
14. Geothermal Use	Geothermal reservoirs of hot water, which are found a couple of miles or more beneath the Earth's surface, can be used to provide heat directly.
15. Thermal Energy Conversion	Thermal energy conversion is used as cooling and heating energy with heat pump and heat exchanger by temperature difference between water resources/geothermal and ambient temperature.
16. Ocean Thermal Energy Conversion	Ocean thermal energy conversion is hydro energy conversion system which uses the temperature difference that exists between deep and shallow waters to run a heat engine.
17. Aquamarine Power	Aquamarine Power is generated by wave energy.

Type	Features
18. Tidal Power	Tidal power, sometimes called tidal energy, is a form of hydropower that converts the energy of tides into electricity or other useful forms of power. Tidal energy is generated by the relative motion of the Earth, Sun and the Moon, which interact via gravitational forces. This energy is produced through the use of tidal energy generators. These large underwater turbines are placed in areas with high tidal movements, and are designed to capture the kinetic motion of the ebbing and surging of ocean tides in order to produce electricity.
19. Fuel Cell	A fuel cell is an electrochemical cell that produces electricity from a fuel tank. The electricity is generated through the reaction, triggered in the presence of an electrolyte, between the fuel (on the anode side) and an oxidant (on the cathode side).
20. Co-generation	Cogeneration (also combined heat and power, CHP) is the use of a heat engine or a power station to simultaneously generate both electricity and useful heat. It is one of the most common forms of energy recycling.

Source: Adapted from DaCRISS

3) Spatial Development and Management

(a) Urban Growth Scenarios

5.43 While currently approved urban plan shows directions on future land use and urban developments, it is apprehended that the urban area in Danang has started to sprawl to the outskirts resulting in inefficient use of lands, that is, low density development. This has led to a decrease in green and open space, which increases the city's vulnerability to natural disasters and loss of eco-systems and more infrastructure costs. All these factors contribute to increasing threats to sustainable urban growth and the realization of an environmental city.

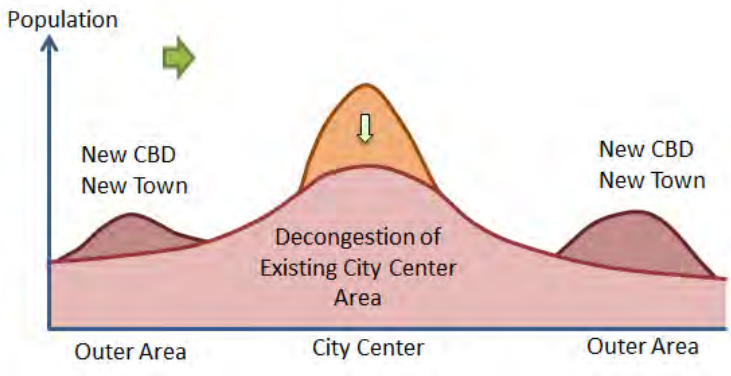
5.44 If current trend continues in expectation of rapid population increase in coming decades, the urban area will further expand to the outer areas and beyond city boundaries especially toward the south with low density. Provision of basic infrastructure and services to residents will become more expensive. Residents in extremely congested areas in the city center and likely move to the outer areas would find difficulty in finding affordable housing.

5.45 In Danang, expected distribution of population will be seen in the following two types:

(i) Those who would like to resettle from the existing congested urban center, but continue their businesses and work in the city center; and

(ii) Migrate from other provinces for employment, study, and other purposes (see Figure 5.3.4). This is a typical pattern that many cities including Yokohama City have experienced. A key intervention is how to guide the development trend in a sustainable manner.

Figure 5.3.5 Movement of the People from Congested City Center to Outer Areas



Source: JICA Study Team

(b) Core Spatial Structure

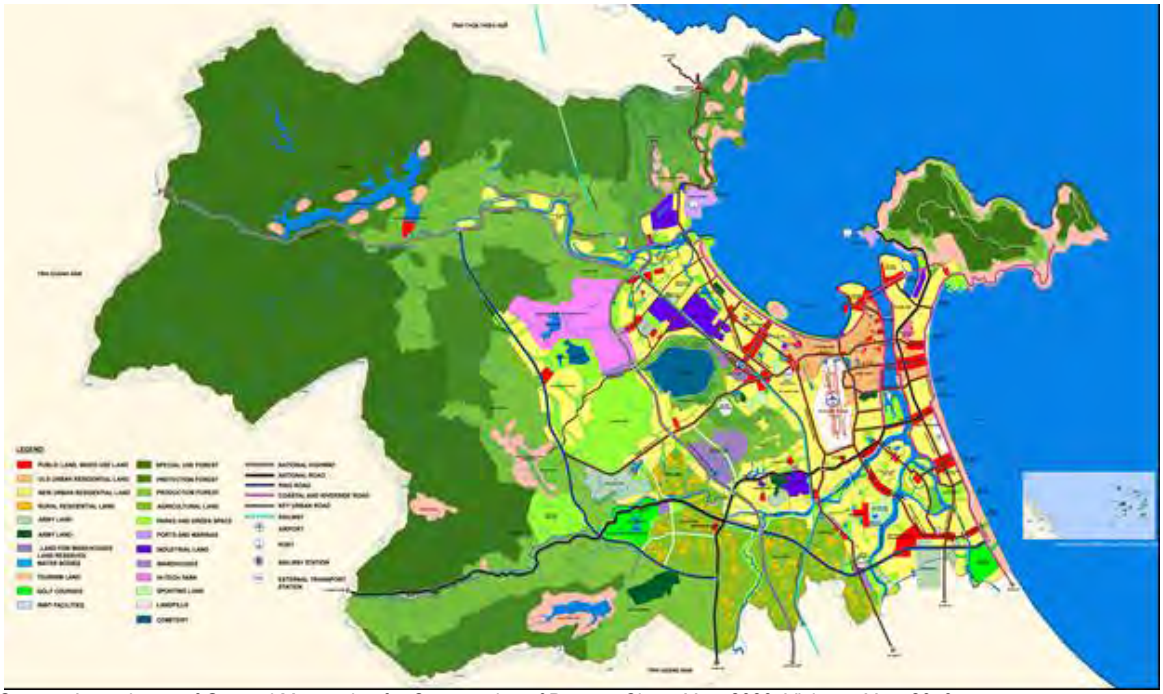
5.46 Establishment of core urban infrastructure, which will guide effective expansion of urban area, must be elaborated in the current approved urban master plan. It is preliminarily suggested to consider following the three points:

(i) **Emphasis on Environmental Considerations:** Danang's strength and significance lie in its urban area, which is surrounded by rich natural environment -- long, white sand beaches and the sea in the east and north, hills and mountains in the west and north, and rivers and water spaces in the middle of the urban area. These will become more valuable assets as the city urbanizes and develops further. However, there are factors that cause natural disasters, thus, the natural environment needs to be properly managed in the process of urban development. The concept of Environmental Zoning discussed in DaCRISS is worth a revisit.

(ii) **Concept of Metropolitan Danang:** Considering the environmental factor mentioned above, the logical expansion of Danang's urban area should be towards the south, beyond the administrative boundary of the city. It is necessary for Danang to formulate an integrated and coordinated urban land use plan, which includes the adjoining areas of Quang Nam province. The concept of a Metropolitan Danang is recommended.

(iii) **Development of Mass-Transit Backbone:** In order to ensure adequate mobility and accessibility of the people in urban area with 2 to 3 million population, it is inevitable that the area is provided with a competitive network of public transport. For Danang to be able to promote a public transport-based urban area, a transit backbone connecting the north and south in a way that it integrates CBDs in the north, central, and the south and cover main urban activity areas along the route is necessary. This north-south transit backbone must be further connected with secondary and feeder transit lines to form a hierarchical public transport network.

Figure 5.3.6 Current Approved Urban Master Plan



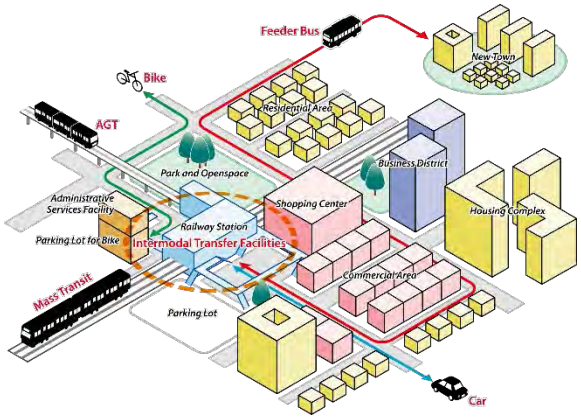
Source: Amendment of General Masterplan for Construction of Danang City to Year 2030, Vision to Year 2050.

Box 5.3.1 Transit-Oriented Development at City Level

The situation in Yokohama, Tokyo, and other large cities in Japan were very compactly built before motorization took place. Population density in the city center was extremely high (about 250–300 persons/ha). As the economy grows, many residents wanted to have their own homes or move to areas with better living environments. In the process, urban areas expanded toward the city's outer areas. Many new towns and housing areas of different classes and sizes were developed by both the public and private sector. The developments were rather concentrated along mass rail transit which provided the people with public transport access to the city center where they mostly held, or looked for, jobs and carried out other activities.

Yokohama has a good model of new town development that is integrated with urban rail development. Kohoku New Town is a show case of sustainable, high-quality living environment, designated to accommodate a maximum population of 300,000 within a land area of 2,530 ha, initiated as early as 1970s. The Kohoku New town has unique feature namely: public participation in land-use planning, etc.,, spreading greenery, comfortable living environment with active economy and rich in culture. Above all, it has enhanced transportation network by municipal subway, east-west, and north-south arterial roads, which connects to inter-regional trunk roads. The intermodal transfer facilities were located in the Kohoku New Town. It functions as to provide transit space between railway and other modes such as bus, taxi, private car, motorcycles, and pedestrian, as a transport node, and to provide open space for station users and the general public

Figure 5.3.6 Image of TOD



Source: JICA Study Team

Figure 5.3.7 Kohoku New Town Project

Source: JICA Study Team

(c) An Alternative Approach to Mass Transit Development

5.47 Construction of mass rapid transit such as MRT(Mass Rapid Transit), LRT (Light Rail Transit), and BRT (Bus Rapid Transit) always confront difficulties in smooth and effective implementation of the projects such as ROW acquisition, resettlement, funding, provision of inter-modal facilities, and coordinated urban development, among others. While lengthy time is spent for conventional process in project planning and implementation, constraints and difficulties tend to arise and opportunities to tap benefits due to the projects are lessened.

5.48 Mass transit project should be looked into from an urban transport viewpoint, but rather in an overall urban development context because they will affect land use and environment significantly in an interactive manner. An alternative approach to a more effective development of mass transit line is preliminarily explained as follows:

(i) Step 1: Conduct feasibility study to define future mass transit system alignment, structure, station location and type. Objective is to specifically delineate ROW boundary on city map (GIS).

(ii) Step 2: Overlay the ROW boundary on legal urban plan (Zone Plan or Detail Plan). Plans must be adjusted to control development located within ROW and provide incentives and guidance on land use and urban development at and around planned stations.

(iii) Step 3: Introduce initially bus system along the route to operate until lands are cleared and public transport are cultivated.

(iv) Step 4: Plan and design TOD projects and prepare investment guidelines for private sector involvement,

(v) Step 5: Design and Implement mass transit project under PPP scheme.

(d) Management of Urban Area by Cluster

5.49 Danang's charm and attractiveness are widely distributed over the city area with distinct characteristics. However, active urban development across the city affects positively and negatively the landscape and tangible and intangible values of the areas. In order to enhance urban space value from socio-economic environment and cultural aspects collectively, it is desirable to classify the entire city area and identify clusters, which require special attention. Then, guidelines on development and management will be prepared in participation of all stakeholders including city government, districts, communities, private sector, experts, etc. (see Table 5.3.11 and Figure 5.3.5).

5.50 **Regeneration of Existing CBD:** While existing CBD has great opportunities to attract investments, tourists, and visitors, it needs to be regenerated, though it involves complexity and difficulties. Many people of different income class including the poor reside and earn livelihood in the area. Ownership of land use rights is complicated. Technical infrastructure and buildings are not with adequate standards in many locations. At the same time, new high rise buildings[15] are developed without coordination with traditional landscape value. There is an urgent need to formulate consented development and management plan to regenerate development of management of existing CBD, to enhance competitiveness, while social issues are properly attended and cultural values are preserved. Revitalization of CBD in the process of rapid urbanization was one of the six strategic projects of Yokohama City (see Box 5.1.1).

5.51 **Promoting Development of New CBDs:** While existing CBD is regenerated from preservation of cultural values and improvement of livability and control of high-rise buildings, it is necessary to develop modern and competitive CBD to accommodate increasing demand in the future. Possible locations of the new CBDs will be one in the north and one in the south, which are connected with backbone mass transit line via existing CBD. The new CBD must be transit-based compact, high-density, and mixed-use developments.

5.52 **Coastal Areas and Riverine:** Waterfronts are invaluable assets for Danang, not only for their natural beauty, but also cultural value. Adequate guidelines for development and management for these areas must be prepared and institutionalized.

[15] The height of buildings must also be properly controlled to ensure safe navigation of aircrafts at the current location of airport, which is a supreme strength in attracting domestic and international visitors and investments.

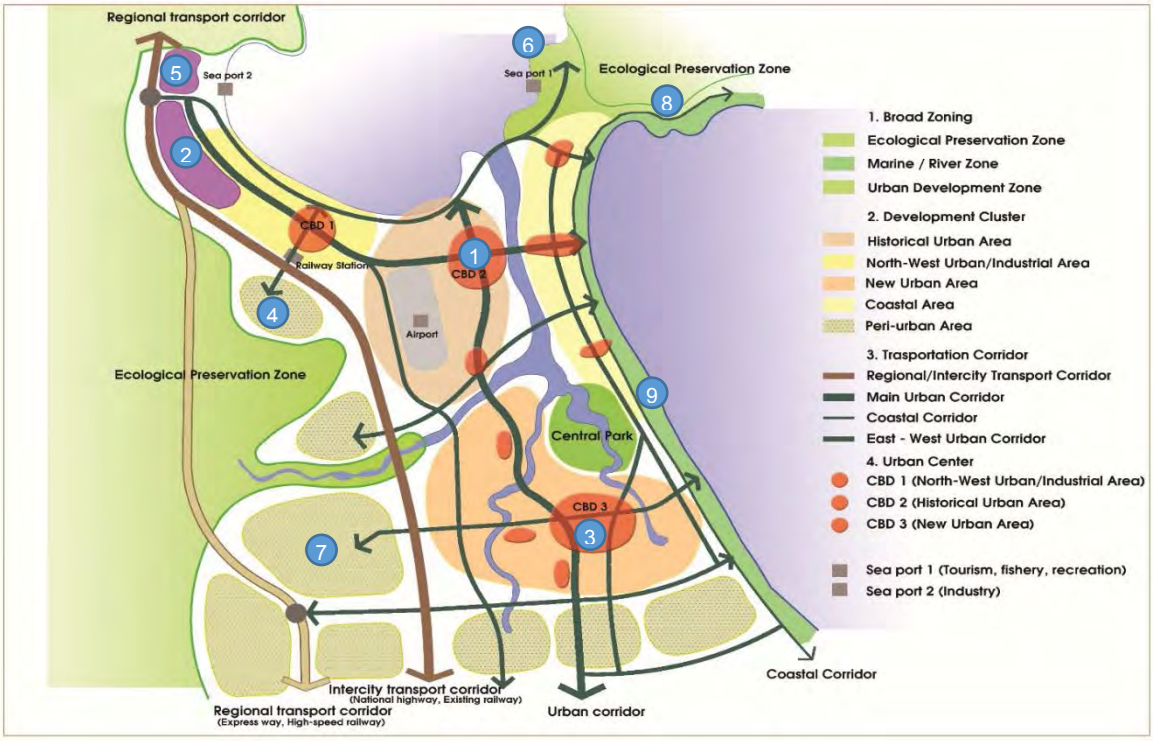
5.53 **Green Network:** While transport network provides a basis for classified land use and urban development, it should be supplemented with equal importance by a green network, which comprises of mountains, forests, rivers, seashore, ponds and lakes, man-made parks and gardens, and sidewalks covered with trees, among others.

Table 5.3.11 Possible Development Clusters (Tentative)

Broad Zoning	Cluster Type	Major Characteristics
Urban Development Zone	(1) Historical urban area with old CBD	• Public services • Business and commercial hub • Low-rise old town development coupled with new low to medium rise development
	(2) Northwest urban/ industrial area with new CBD	• Public services • Business and commercial hub • Medium to high rise development
	(3) New urban area with new CBD	• Public services • Business and commercial hub • High-rise new development
	(4) Hi-tech cluster	• Hi-tech industry, innovative industries
	(5) Lien Chieu cluster	• Conventional industry, shipping
	(6) Tien Sa cluster	• Tourism, fishery, recreation
Quasi Urban Development Zone	(7) Peri-urban area	• Agricultural production • Preservation of a semi-rural landscape
Ecological Preservation Zone	(8) Son Tra cluster	• Well-preserved fauna and flora (restricted development) and organized operation of national parks, etc.
Marine/ River Zone	(9) Coastal area to Quang Nam	• Beach resort development in harmony with nature

Source: JICA Study Team

Figure 5.3.7 Proposed Spatial Structure and Identified Main Urban Cluster



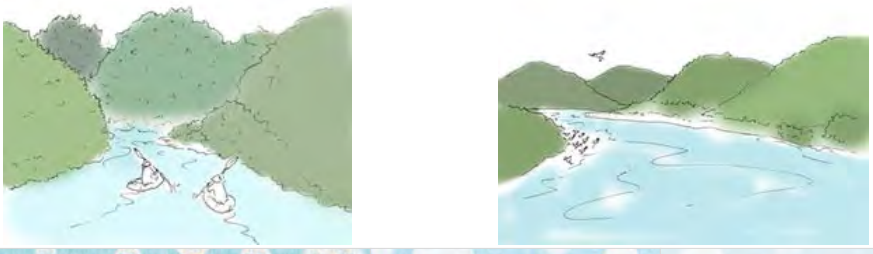
Source: Modified from DaCRISS

Figure 5.3.8 Image of Future Development by Area

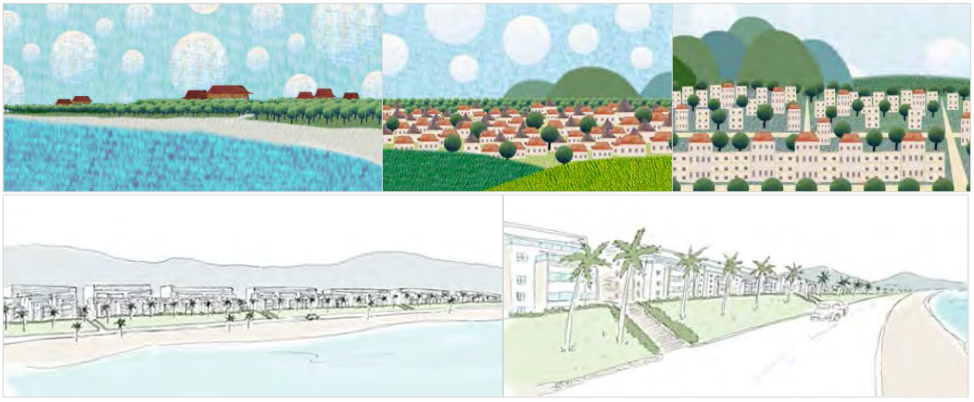
1. Bird's-eye view of old CBD
   Organized building design with cultural flavour and controlled building height

2. Old CBD along Han River
   Coordinated façade design and building height.

3. Tourism along Cu De River
   Quaint environment surrounded by rich water resources



4. Coastal area to Quang Nam
   Beach resort and high-end residential development in harmony with nature



5. New urban area with new CBD
   Modern high-rise buildings in rich green and water

6. Peri-urban area
   Less developed accessible areas with a rural feel

Source: Modified from DaCRISS.

4) Strategic Infrastructure Development

5.54 While Danang is relatively well-provided with needed infrastructure compared to other cities, the future requirements will be enormous considering that the population is doubled. As the urban area is expanded further beyond the current municipal boundary, visitors are increased and socio-economic activities will increase tremendously and the level of services requested by the people will also become higher. Infrastructure development needs will expand both in quantity and quality. Main points of considerations for specific type of infrastructure are briefly as follows:

(a) Transportation

5.55 Transportation is the most critical infrastructure Danang and CFEZ region requires. As the area is rather isolated from major socio-economic agglomeration in Vietnam as well as with GMS, connectivity for smooth movement of people and goods needs to be much strengthened as it is well-documented in DaCRISS and current plans. Followings are main parts of emphasis on the development of competitive transport infrastructure and services for Danang:

(i) **International Transportation:** This refers to (1) further development of air transport especially expansion of air routes and services between Danang and main cities in the world through direct flights; (2) development of competitive port system comprising existing Tiensa port and planned Lieu Trieu port as the gateway and logistics hub for CFEZ and GMS; (3) further improvement to accommodate international cruise shipping; and (4) further improvement of east-west roads and cross-border procedures.

(ii) **Intercity Transportation:** This includes (1) improvement of national roads including NH1 and others which interconnect main growth centers in CFEZ; (2) early completion of North-South Expressway; (3) upgrade of existing north-south railway facilities, operation, and services; (4) preparation for future planned north-south high-speed railway development; (5) improvement of coastal shipping services; and (6) expansion and strengthening of domestic air transport connections.

(iii) **Urban Roads:** This refers to: (1) construction of roads and bridges in such a way that they can configure efficient and hierarchical network; (2) to ensure provision of adequate road maintenance; and (3) introduction and expansion of low emission vehicles such as EV and PHEV.

(iv) **Public Transport:** Public transport development must be considered from long-term and short-term viewpoints including (1) preparation for development of rail mass-transit, which forms a backbone to support the urban area in the most effective manner; (2) continuous strengthening of bus transport services of different types to cover existing and emerging urban areas; (3) improvement of intercity bus transport to system for the people and tourists moving in the region.

(v) **Traffic Management:** To (1) ensure smooth and safe vehicle flow on roads; (2) provide safe and comfortable walking environment; (3) provide adequate parking facilities; (4) strengthen traffic enforcement capacities; and (5) introduce IT measures, etc.

(vi) **Expansion and Improvement of Inland Water Transport:** This includes improved use of water space along rivers and water space.

(b) Water Supply

5.56 As population will increase and service areas expand, this must be also considered both from long-term and short-term perspective. According to the Tasks for Planning of Urban Water Supply, 2014 of Danang city to 2030, and 2050, the city aims for the coverage of clean water supply to reach 95% to 99%, water supply standard of 150-200 liter/person/day; water quality meeting required standards, and the percentage of clean water loss less than 18%; 24-hour water supply by 2020, and further lower loss less than 15% by 2030. It is vital to expand water treatment plant, distribution networks, and reconstruct the deteriorated facilities. In order to make the sustainable business plan, it is vital to set water and sewerage tariff structure at the same time.

(c) Waste Water and Storm Water Management

5.57 To improve service coverage ratio of wastewater treatment, control of industrial wastewater, water quality needs to be monitored attentively in order to balance the economic development and environmental safety. Measures for flood control is also required. By analyzing financial viability and technical soundness, facility such as centered wastewater treatment plant, individual treatment facilities, drainage are designed with special attention to promoting recycle system.

(d) Solid Waste Management

5.58 According to the Tasks for Planning of Solid Waste Disposal, 95% of the total amount of generated solid waste is collected and treated meeting environmental requirements, of which 70% is recycled, reused, for energy recovery or production of organic fertilizer, 100% collection and treatment of hazardous waste. Waste separation in urban districts are needs to be implemented by 2020.It is important to continue and expand environmental awareness campaign for recycling system, but also require 1) development of final disposal facilities with improving the existing leachate treatment facilities, 2) installation of infrastructure s such as resource recovery facilities, improvement of incineration facilities for hazardous and medical waste.

5.59 The waterside environment will be improved and be sustainably clean by managing wastewater and solid waste, thus, the livability and attractiveness of Danang will continue.

5) Environmental Management

5.60 While manmade pollution can be reduced through provision of improved infrastructure facilities and services, Danang must pay more attention to (1) protection of ecosystems both in marine and forests; (2) reduction in hazard risks and strengthening of disaster preparedness; (3) further response to climate change issues; (4) preservation of cultural and traditional values, among others.

6) Human Resource Development

5.61 In order for Danang to grow as a service sector oriented environment city, the quality of human resource is a key to success. The improvement of human resource is necessary across all industry sectors in both public and private. A more comprehensive approach is required with participation of the government, communities, and private sector.

7) Opportunities for Infrastructure Funding

5.62 In order to ensure sustainable growth of the city, it is very important to strengthen capacities of Danang City in terms of: (1) planning and project preparation; (2) institutional framework to control and guide private sector development; (3) budgeting; (4) control of expenditure; (5) value capture and PPP project design and implementation; and (6) public information and participation, etc.

(a) Estimated Budget Envelop

5.63 The availability of sources to fund various investment projects has always been a concern of governments. However, public facilities and infrastructures have not always been funded by public money alone but can be done a lot by the private sector and users of services, if the projects and institutional setup are properly designed. Therefore, it is worth a try to first determine the financial capacity of Danang covering all stakeholders, that is, the government, private investors, and users. A practical way to do this is to estimate the "budget envelope," which is defined as the collective financial capacity of a city (or a country) based on the city's GRDP (or a country's GDP). When the GRDP increases, the budget envelope does, too. The budget envelope of Danang was estimated thus:

(i) Estimate percentage of city budget spent on past investments: During the period 2010–2014, approximately 20% of the GRDP was spent on budget expenditure.

(ii) Assume percentage of private sector investment mobilized for investment projects: Because there is no reliable data on the amount of private investment, it was assumed that it equaled the city's expenditure.

(iii) Assume the share of investment projects to GRDP: Thus 40% of the GRDP can be mobilized for investment of all infrastructure projects.[16]

(iv) Estimate GRDP of Danang for 2016–2025: Assuming that the GRDP will grow at 8% a year, it is estimated that the GRDP for 2016–2020 and 2021–2025 will be USD2.9 billion and USD4.3 billion, respectively.

(v) Estimate budget envelope: It is estimated that the budget envelope of Danang will be USD1.2 billion and USD1.7 billion for the respective periods.

(b) Key Interventions and Strategies for Fiscal Management

5.64 In order to manage fiscal balance and secure alternative sources effectively. Coordinated mid-long term fiscal planning, Investment plan and funding strategy will be required continuously.

(i) **Long-term fiscal plan**: Since most of the infrastructure investments are expected to contribute to economic and social activities of citizens and businesses for a long term, strategic development plan will be required.

(ii) **Investment Plan**: The city needs to have a better linkage between development goal and investment plan. It will be also necessary to consider life cycle costs including O&M from the initial investment period, and efficient operation and maintenance for a long term will need to be promoted and incorporated in investment planning.

[16] For example, in the Philippines, it is officially quoted that 50% of the GDP can be mobilized by both the public and private sectors to fund various infrastructure.

(iii) **Funding strategy**: The use of PPP, direct financing can be options for necessary infrastructure investment and a procedure incorporates such kind of alternative sources of funding from outside of state budget. Appropriate investment procedure (including assessment of long-term fiscal impacts) and monitoring framework (including fiscal performance index or external rating) will be required to increase the borrowing capacity and assure good financial health at the same time. In addition, further improvement in integration of exiting data and database to assess flow and stock of assets and liabilities will be required in this plan.

(c) Key Interventions and Strategies for Development of PPP Infrastructure Projects

5.65 It is required to solve the issues that were raised in APPPENDIX3 Summary and Main Issues on Development of Infrastructure Projects Based on PPP in order to realize the PPP project in Danang. The following measures are recommended to solve those issues.

(i) **Project Scheme**: This includes following:

a. **Tariff and budget for VGF:** Allocating some of the budget to PPP projects is required to fill the viability gap (e.g. receiving a budget from the central government and/or the general account of Danang City) until the principle of cost recovery is applied. For a mid-term period, it is important to implement both the reduction of fiscal expenditure for PPP projects and the expansion of the principle of cost recovery.

b. **Risk Allocation:** In order to set the best suitable risk allocation, government officials need to learn about the typical risk allocation for each infrastructure PPP. So it is also recommended that Danang City hire an external PPP advisor to figure out the optimal risk allocation among stakeholders, while taking project conditions into account. In addition, in order to implement PPP projects smoothly and quickly, it might be profitable to develop a “Risk allocation guideline” and/or the model contract for PPP (pilot project).

c. **Government Guarantee:** Guarantees for payment obligations and currency convertibility by the central government will be the key to attract investors. Danang City needs to discuss the matter closely with the central government and work out a credit support mechanism.

d. Unsolicited Proposal: There will be a 5% incentive for the investor who proposed a project. It is disappointing for investors that the projects they proposed have to be tendered without a reasonable incentive, so the government and the investors have to prepare for projects pursuant to the new legislation.

(ii) **Procurement:** This includes following:

a. **Applied technologies:** In some projects, there might be many kinds of technologies to be applied, possible technologies need to be compared and the best suitable technology should be selected. It is also useful for Danang City to hire an independent engineering consultant reviewing investor’s proposal and FS report.

b. **Project Appraisal:** To appraise a candidate project, government officials should be knowledgeable about PPP, namely the alternatives (structure patterns) to PPP and international case studies (i.e. successful projects and projects that resulted in failure). Measures would help with appraising a project include educational program, secondment to the private sector, and transaction advisors’ support and hiring experts

from the private sector. It might be helpful to develop a "PPP process guideline" for procurement processes, if necessary, after the PPP circular is enacted.

c. **Promoter:** Although the promoting agency needs to be the lead for the implementation of a PPP, they do not have enough experience to do so. A general advisor for the promoting agency could be helpful. In addition, setting up a dedicated unit for PPP will also be helpful in boosting the PPP project development.

8) Proposed Institutional Arrangements

(a) Value Capture of "Sold" Land

5.66 Unearned increments in land value, defined by Dawson[17] as "with the progress of society land acquires a spontaneous increase of value, a value which is independent of the expenditure of labor or money upon it." In other words, it is an increase of value in land or property without any cost to the landowner. Dawson has termed this as 'reaping without sowing' or 'private gain at public cost.' The notion behind these terms is inequality; unequal because the already prosperous landowners see an increase of their land and property without any form of investment and expenditure, owing to the growth of society and public improvements to the community, and also the enterprise and exertions of its less affluent tenants seeking for a better living environment.

5.67 The following section makes an attempt to categorize existing mechanisms to share the benefits of unearned increment with the general public which each carry a different context and weight on the points mentioned in the preceding paragraphs. The mechanisms are categorized into three groups: taxation, planning conditions and obligations, urban development methods (see Table 5.3.3).

Table 5.3.3 Main Characteristics of Key Mechanisms

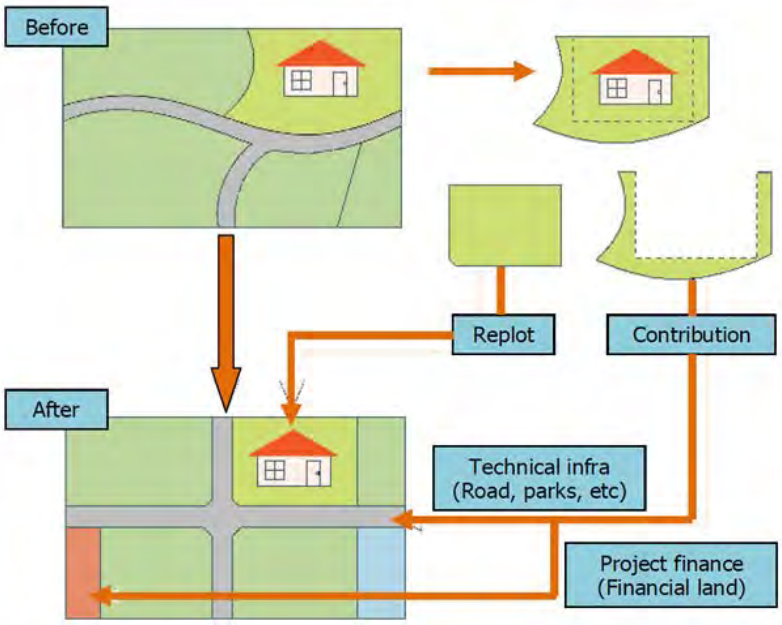
Mechanism	Defrayer	Pros	Cons
Taxation			
Development charge (various)	Landowners	• Full capture of development gain	• Discourages betterment efforts
Land value tax (various)	Landowners	• Encourages developers to develop vacant and under-used land • Deterrence of speculative land holding • No avoidance/ evasion of taxation • Progressive taxation	• Poor widow argument • Subjective valuation • Unfair to developers seeking to improve the livability and environment of the community
Property tax (various)	Property owners	• Progressive taxation	• Discourages betterment efforts
Urban planning tax (Japan)	Land/ property owners	• Ease of enforcement	• Vague relationship between defrayer and beneficiary
Planning conditions and obligations			
Section 106 (UK)	Developers	• Secure social equity and good living environments	• High burden on developers
Technical criterion (Japan)	Developers	• Secure social equity and good living environments	• High burden on developers
Build-transfer (Vietnam)	Developers	• Secure social equity and good living environments	• High burden on developers
Urban development methods			
Land readjustment (various)	Landowners	• Increasing land value for landowners whilst improving public infrastructure and self-funding the project	• Loss of social networks and jobs due to enforced displacement of residents

Source: JICA Study Team.

[17] Dawson, W. H. (1890) The unearned increment: or, Reaping without sowing. London: Swan Sonnenschein.

5.68 Land readjustment is a unique form of sharing unearned increments in land value with the general public. The general idea is that land owners contribute a portion of their own land for public improvements, and the justification behind it is that the market value of the land is the same due to the betterment efforts made by the public (see Figure 4.5.1). The contributed land becomes either (i) land for technical infrastructure (road, parks, etc.) or (ii) land for project finance, both to be used for public purposes. While the former will be used directly for infrastructure development on the land, the latter will be sold to generate finance for the land readjustment project. This scheme has been actively employed in Germany, Japan, The Netherlands, Israel, and has been tried out in less developed nations such as Malaysia and Thailand. While this has various advantages such as increasing land value for landowners whilst improving public infrastructure and self-funding the project, there are downsides to it such as loss of social networks and jobs due to enforced displacement of residents.

Figure 5.3.9 Concept of Land Readjustment Scheme



Source: Ministry of Land, Infrastructure, Transport and Tourism, Japan.

(b) Leveraging National Funds

5.69 A revisit to Yokohama City's case can provide insights on how to leverage national funds in an effective way. Back in the 1960s, the core development requirements and the ever-increasing necessities for public services and infrastructure required a considerable amount of funding and the financial requirements were overwhelming Yokohama City's own financial capabilities. The city, therefore, made various efforts to mobilize financial resources and cooperated with various entities to ease its financial burden and stave off monetary obligations. A determined effort at coordination and networking with central government and private entities resulted in funding becoming available. Thus, the construction of the expressway network and the Bay Bridge were realized with financing from the public cooperation ; the revitalization of the central district was supported by private land owners who provided some portion of their lands for public use as provided for in the Land Readjustment Act; the Kanazawa District Reclamation Project was funded by foreign bonds (Mark Bond of former West Germany and Swiss Franc Bond); and the Kohoku New Town Project was built by the Urban Renaissance Agency former Japan Housing Corporation .

(c) Inter-sectoral Organization Setting

5.70 Again, Yokohama City is a successful example of how the city did away with vertical sectionalism and succeeded in organizational reform in city administration. Yokohama carried out administrative action not through the traditional vertical method but through a dynamic framework that accommodated needed organizational and administrative reforms and adjustments. As in other local governments, administrative frameworks tend to be on a top-down basis, even though the sectoral mandates. However, a systematic urban development policy like the Six Major Strategic Projects necessitated a comprehensive coping mechanism that could handle issues and concerns beyond the borders of departments and hierarchical sections in the City Hall.

5.71 To handle this matter, the city established the Planning and Coordination Unit (later called Bureau) and conferred on it a centralized authority with enhanced coordinative mandate among relevant departments. The city also acquired capable personnel and talent to enforce its own policies, and effective coordinative work among various departments as well as the introduction of new personnel and ideas resulted in a more dynamic and mature style of planning.

5.72 The Planning and Coordination Unit attempted to gather experienced employees in each operation as multilaterally as possible and to carry out personnel exchanges among relevant departments. Those who were from different sections and had different backgrounds were encouraged to gather together and discuss solutions and actions relevant with the integrated urban projects. Thus, they were able to commingle their own strengths and channel them into one action and direction. Another first was the creation of an urban design team, a nascent concept in Japan at that time which gathered young professionals and planners from outside of the city. In addition, the presence of conscientious city officials and leaders attracted more talented personnel.

(d) Issuing Development Rights

5.73 In Vietnam, land must be recalled and reallocated upon the conversion of its use. Greenfield land is prioritized over brownfield land upon development because it is cheaper and easier to acquire. However, there much more to this issue than that. Greenfield land requires the conversion of use from agricultural to urban, generating high land use conversion fees as Government revenue, hence the preference of the authority. This is how Danang has up to today secured budget for infrastructure development. Land was recalled from farmers at stipulated Government rate, and once converted, sold at market rate.

5.74 Ironically, this reminds oneself of the most important principles of Ebenezer Howard's Garden City. What makes a city a Garden City is not its physical characteristics; spacious houses, open space and greenery, access to the countryside, etc., but precisely the practice of communal ownership of land and the reinvestment system, that is, value capturing the unearned increment generated from land and feeding this back to the public welfare and development of the community to realize a self-sustainable society in financial terms. Hence selling land in pieces, as the current practice, is a direct contradiction to this principle.

5.75 There are many development permissions already given by the Government, but not so much development. In theory the developer must commence its works within a year after grant of the permission, but in reality the revocation proves difficult. Firstly, the concession fee has already been paid to the Government and the Government is reliant on it, and secondly the process of granting the development permission lacks transparency and is a

very opaque procedure. The current financing of infrastructure relies too much on central government budget transfers (which are largely funded by ODA) and at the local level from the sale of requisitioned land to developers and users.

(e) Land Expropriation

5.76 Land acquisition procedures in Danang are known to be much simpler than those in other provinces. Danang City has urbanized by developing unused, hilly and forest land, and very little agricultural land. However, Danang's success in land acquisition is also the result of its "Land Acquisition and Compensation Unit (LACU)", established under the People's Committee.

5.77 The "Land Acquisition and Compensation Unit (LACU)" specializes in land assessment, determining appropriate land prices for compensation, documenting land acquisition and compensation procedures, etc. There are 3 LACUs in Danang City functioning in all districts. As a result, all households affected by land acquisition receive the same rights and obligations. Land acquisition and compensation in the city is conducted in a more professional and speedy manner than in other cities and provinces, which use the Land Acquisition and Compensation Council (LACC) for each district and regulated by the Central Government. The main difference between LACU and LACC is that the former is under the People's Committee, and is in charge of all projects regardless of location.

(f) Proposed Schemes for Infrastructure Provision

5.78 In terms of schemes for the purpose of acquiring land and funds for future infrastructure development, there exist various schemes around the world. Some notable approaches are introduced as follows:

(i) Taxation

5.79 A common form of taxation today is land value tax, a charge to the rental value of land. Its valuation is based on market evidence in accordance with the optimum use of the land within the planning regulations. This is considered to be more equitable than property taxes, because it ignores improvements in property and is taxed on land alone. A tax on land values produces economic and social consequences very different from a tax on improvements. (Peddle, 1994)

5.80 Land value tax has proved to be effective in cities such as Harrisburg, USA. For example, Harrisburg listed as the second most run-down city in the USA in 1982, was revitalized due to an increased emphasis in land taxation, three times that of taxation on buildings on the basis that 'the more that land is taxed, the more this produces an incentive to invest capital on the land in the form of buildings and other economic activities'. The figures were impressive: the number of vacant sites by 2004 went down by 85%, the number of businesses jumped from 1,908 to 8,864, unemployment rates went down by 19 %, value of land has increased from USD 400 million in 1982 (in today's prices) to USD 1.7 billion now, and so forth.

5.81 Such land value taxation has both advantages and disadvantages. Advocates of land value tax claim that it encourages developers to develop vacant and under-used land or to make way for others who will. Other advantages are deterrence of speculative land holding, no avoidance/ evasion of taxation, etc. It is also considered more equitable because landowners pay, not the less affluent tenants. On the other hand, detractors claim that under a land value tax scheme, the poor pay likewise millionaires, valuations are subjective and are

not fair to developers who are making efforts to increase land value through various investments for betterment.

5.82 One unique case from Japan is a tax termed the “urban planning tax.” This is a local tax that local authorities have the discretion to impose on both land and properties in the Urbanization Promotion Area (UPA) within the City Planning Area (CPA). In Japan, CPA is divided into two zones, namely UPA where planned urbanization was to be promoted in the next decade, and Urbanization Control Area (UCA) where urbanization was to be restricted in the next decade. It is noted that UCA is unlike the Greenbelt of the UK where development is permanently restricted. (Sorensen, 2002, p.214) Although urban planning tax existed before the war and once abolished by USA occupancy forces, this was readopted in 1956 as a relatively enforceable remedy to improve the financial situation of local governments in the post-war era. However, various issues are in question today such as the overlap with the already existing property tax, and the vague relationship with the defrayer and beneficiaries of urban planning and development.

(ii) Developers’ Obligations

5.83 While the mainstream form of sharing the development gain is in the form of taxation, it could also be through planning conditions and obligations. The purpose of this agreement is to ensure sustainable development and equitable society by requiring the developer to contribute towards affordable housing and public infrastructure in exchange for the profit they make due to the increased value of land and property. This also prevents urban sprawl where the Government, in charge of providing affordable housing and public infrastructure, cannot keep up pace with the speed of housing development promoted by private developers. This is important because such urban sprawl can potentially result in creating neighborhoods with poor public infrastructure, degraded living environments due to lack of sanitation facilities, and dominance of market-value homes far from the city center. However, it must not be overlooked that it imposes a very large burden on developers – for example, some cities in the UK the affordable housing ratio may be 50%, which in turn increases the price of houses at marketable rate, making the hurdle even higher for potential market-rate buyers who are not eligible for affordable housing.

5.84 Again mentioning an example from Japan, the urban planning system imposes a “technical criterion (gijutsu-kijun)” to developers upon granting planning permission. This could be understood like conditions and obligations upon granting planning permission. This has been adopted due to the massive urban sprawl which occurred in suburban areas in vicinity to Tokyo in the post-war era. This was especially a grave situation for cities like Yokohama, which suffered from high pressure of increase in population, tripling from one million to more than three million during a mere 30 years between 1950-1980.

(iii) Build-Transfer

5.85 Vietnam has recently introduced a build-transfer system, which implies the grant of planning permission in exchange with off-site infrastructure development. This has been widely adopted in Vietnam and is being considered to fun large-scale development projects with little burden on the public. However, sometimes the developer does not develop infrastructure as agreed, and there are no written standards for build-transfer system about the role and responsibility sharing between the public and the private sector. Terms and conditions depend greatly on the negotiation and agreement between the government and the developer, based on the content of the project.

6 PROPOSED ACTION PLAN

6.1 Approach

6.1 “Learning from good practice” is easier said than done. When one considers applying one successful practice in a certain city to another city, it is quite easy to revert to a simple imitation of one practice and “transplant” it to another. Planning is an output of complex interactions with aims to pursue a better society against a backdrop of historical, cultural, administrative and political contexts. While the ends of planning, the envisioned society are somewhat similar across different nations and cities, i.e. vibrant economy, healthy society, well-preserved environment, high mobility and accessibility, beautiful landscapes, etc. the systems and procedures in place aiming to materialize such visions varies significantly among them.

6.2 Hence the JICA Study Team has paid due attention to focus on the “essence” of these successful planning practices with a special emphasis on the experiences of Yokohama City in Japan. This is a process of defining the key approach for Yokohama’s success in its urban development, and thereby identifying its implications to Danang, i.e. what the possible orientations in Danang might be. For instance, the Bay Bridge project in Yokohama aimed to divert inner-city heavy traffic to the outskirts to reduce traffic congestion in the city center might be translated to a port development project near the logistics zone in the west of Danang for the same purpose. What may have looked like a bridge issue might actually be a port issue. This is what “learning from good practice” essentially means.

6.3 This approach starting from the famous six strategic programs of Yokohama, supplemented by the cross-cutting actions, which were indispensable for realizing the six strategic programs. The possible orientations in Danang identified through this procedure are the base for the proposed cross-cutting actions and programs proposed in this project.

6.4 The approach to the formulation of strategic cross-cutting actions and programs is to create a combined program that achieves comprehensive results from separate projects which are prioritized in the project list. If a “project” is a component of a “plan” and a “strategy” is to meet the goals and targets, then a “program” is a set of projects and activities possible to foster the effects of “plans” and “strategies”.

6.5 The strategic program is identified in the concise matrix of overall goals, specific objectives, strategies, composed projects with specific locations (shown on maps), time frames, estimated budgets and implementation agencies of those combine project/ program proposal. The matrix is the primary input information for the development of the implementation plan.

6.6 The Action Plan and Sub-component were proposed to Danang City prior to the 4th Forum and discussed with agencies concerned in Danang. They were farther discussed in the forum and agreed upon in principles as explained as follows.

6.2 Proposed Cross-cutting Actions

6.7 Cross-cutting Actions are as follows:

1) Action 1: Elaborate Integrated and Sustainable Urban Development Strategies

(a) Scope: More concrete integrated and sustainable urban development strategies shall be elaborated, based on the existing urban development master plan, sectoral plans, Environment City Plan, and the envision of new economic development strategies, which is to be a driving force of Central Focal Economic Zone (CFEZ) and a metropolitan city in the central region. This action includes following components:

(i) Integration of Urban Plan Strategies (Short-term: 1-3 years)

- Define Danang City's definition of "Compact City" and "Smart City" development model, which are appropriate with the characteristics and development conditions of Danang City, and set the targets of goals
- Based on the vision of "Compact City" of Danang City, review the existing urban development plans (General M/P, sectoral M/Ps, urban development control regulations, etc.), formulate urban development strategies. (Converting from low population density to high population density oriented development at urban center, in accompany with TOD approach).
- Develop a mechanism for regulating urban infrastructure development plan and suburban development (residential and commercial land), i.e. a mechanism to control over new infrastructure development investment
- Re-examine inappropriate suburban development (residential commercial, and industrial land) and reset controlled area.
- Explicitly illustrate environment policies and measures in urban development strategies and link it with "Danang Environment City Manifesto" (Ensure the consistency between "Danang – Environment City" and existing urban development strategies and reflect the outputs to the urban development policies and measures).
- Revise the development strategies in order to have consistency with economic development strategies, i.e. ports, logistics, power, etc.

(ii) Formulation of a Framework of Danang Metropolitan Plan (Short-term: 1-3 years)

- Initiate the discussion for materializing "Socioeconomic Development Plan of Central Focal Economic Zone (CFEZ) to 2020 and Vision to 2030" with adjacent provinces and formulate action plans for Danang City.
- Review the several plans, such as overall development strategies of GMS (Greater Mekong Sub-region), Sector development plan of GMS and ASEAN, and review of CFEZ Regional Development Strategy under the DACRISS
- Visioning of the role and status of Danang city in the CFEZ up to 2030. (Existing Coastal Economic Zone Development Plan is targeted until 2020)

(iii) Revision of the Development Strategies (Short-term: 1-3 years)

- Revise the sectoral development strategies including ports, logistics, power, etc. in line with main orientations stated in socio-economic strategies

(iv) Review CBD development strategies (Short-term: 1-3 years)

- Intensify new CBDs and diverge the urban functions of Hai Chau, Thanh Khe by developing the urban framework based on public transportation
- Promote private investments underpinned by defining functions of urban system, and formulating land use plans. (Ref. Action 6. Strengthen Land-use and Development Control

(v) Review the function of existing CBDs (Short-term: 1-3 years)

- Diverge the urban function of Hai Chau、Thanh Khe districts and formulate the practical mechanism of redeveloping, improving, and preserving the old business districts
- Prepare a practical guideline of public involvement for conducting the redevelopment in the urban cores by studying the cases of other countries.
- By applying the strengthened land-use and development control of Cross-cutting Action No.6, improve the urban environment and renew the old CBDs
- Capacity development for preparing of development plans, action plans and the implementation.

(b) Main Coordinating Agency: Department of Planning and Investment (DPI)

2) Action 2: Redefine and Elaborate Development Strategies based on Focal New Industries to Increase Competitiveness

(a) Scope: Create employment for a city with 2 – 2.5 million population, develop strategies and stimulate globally and domestically competitive new industries, such as tourism, high-quality medical care, services, high-tech & Research and Development (R&D), Information Technology (IT), environment, Meeting, Incentive, Conference and Exhibition (MICE) education & human resource development. It is also vital to empower and stimulate Small and Medium Enterprises (SMEs) and supporting industries. Vitalize local economy by empowering SMEs, encourage economic diversification, and take necessary measures for expanding labor market. This action include following components:

(i) Grasp the current status of Danang's Industry: (Short-term: within 1 year)

- DPI jointly with DOIT will be responsible for new industrial development promotion (involving private sector and academic experts) and analyze the current status of industry.
- DOIT develops an "industrial database" (company profile database) of the City as a basis for making industrial development policies and investment plans.

(ii) Identify type of industries with competitive in Danang by analyzing the strength of traditional and potential new industries with an eye of developing "Danang Brand" (Short-term: 1-3 years)

- Strategize the way how service industry is real strength of Danang. Study on service industry development policies of IT, Tourism including MICE, in other cities in Vietnam and neighboring countries
- Formulate specific industrial action plans based on by industry category and carry out those action plans. Those action plans must link with Danang City's SEDP, M/P and the City's mid-, long-term investment and financial planning.

(iii) Activate SME Promotion Policies (Short-term: 1-3 years)

- Familiarize the supporting policy schemes on SME, industry development of partners such as Japan.(Reference :Know-how transfer program for improving technology and management of manufacturers in Haiphong funded by JICA)
- Formulate SME promotion, marketing and business matching strategies and action plans, and carry out those strategies and plans.
- Improve communication and expand collaboration between Danang and. Japan External Trade Organization (JETRO)/JICA and Korea Trade-Investment Promotion Agency (KOTRA)
- Introduce the experts on industrial policy, SME factory diagnosis, facilitation of companies' collaboration).

(iv) Draft the investment promotion plan for domestic and international investors (Short-term: 1-3 years)

- Review the past investment promotion activities by surveying the invested companies, those which did not commit to invest in Danang and analyze the result for improving the investment promotion activities.
- Conduct capacity development of stakeholders starting from IPC
- Based on the new industrial plan described in 5), formulate specific investment promotion plans targeting for domestic and international companies.

(v) Formulate new industrial development plans (Short-term: 1-3 years)

- Based on the activities above 1), 2), DPI, DOIT and IPC, and other related agencies will draft a new industrial development plan. By linking with the SEDP, General Master Plan which will be reviewed every five years, the City's mid-, long-term investment and financial plan will be prepared.
- Facilitate to expand operation of existing investors, and to find out new investors by networking the development partners such as semi-governmental organizations, and private sectors.

(vi) Identify a human resource development needs and establish HRD center to facilitate matching system (Short-term: 1-3 years)

(b) Main Coordinating Agency: Department of Planning & Investment (DPI)

3) Action 3: Update "Environment City of Danang" and Formulate an Integrated Strategic Plan for a new "Environment City" Manifesto

(a) Scope: Update the "Building Danang – An Environment City" in accordance with Decision No. 41/2008/QD-UBND, 21st August 2008 and Decision No. 5182/QĐ-UBND, 4th August 2014, and promote advanced and proactive policies and measures, as well as a tangible plan beyond 2030. In addition, formulate an environment protection plan based on the Environmental Protection Law. This action includes following components

(i) Draft a Comprehensive Environmental Management Policy towards "Environmental City" (Short-term: 1-3 years)

- Take stock of progress of the past environmental projects - what have been implemented, what are the outputs, what are still missing, needs to be enhanced and utilize it as basis of the reviewing the "Environment City" plan and the "Roadmap to Build Environment City"
- Study on the environmental management policies overseas such as Yokohama (e.g. Green-up plan, Greenery tax, Payment for ecosystem services, low-carbon transport, collaboration with private companies), and other cities in Japan, etc. and energy saving technologies
- Formulate strategies and action plans to promote advanced and proactive environmentally sustainable city, synchronized with Danang City's SEDP, M/P and sectoral development plans.
- Formulate an environment protection plan based on the Environmental Protection Law

(ii) Enhance Environmental Monitoring Capacity- process of systematic observation of the environmental components, the factors in order to supply information for assessing the status and changes in the quality of, and adverse impacts, and sharing environmental information to the citizens. **(Short-term: 1-3 years)**

- A special monitoring unit under the "Working Group for the Scheme on "Danang Environmental City Development under the DPC" will monitor the updated "Environment City" plan carried out by respective agencies.

(iii) Affirmative Application of Market Mechanism (internationally transferred mitigation outcomes) for greenhouse gas reduction

- Take an affirmative step to formulate measures and practical action plans to approach an application of internationally transferred mitigation outcomes, such as joint crediting mechanism (JCM).

(iv) Strengthen Traffic Management System and Promote Low-carbon Transport System (Short-term: 1-3 years)

(b) Main Coordinating Agency: Department of Natural Resources and Environment (DONRE)

4) Action 4: Build a Sustainable Funding Mechanism and an Infrastructure Development Method[1]

(a) Scope: In response to an increase in the infrastructure development needs, effectively utilize fiscal funds. Formulate a long-term financial plan, an effective investment plan, and an efficient financing plan, in order to build a sustainable financial management system. In addition, to promote infrastructure development by utilizing private funds and know-how. Develop bankable PPP projects and carry out capacity building so that the City will be able to evaluate, appraise, screen proposals of PPP projects. This action includes following components

(i) Build Sustainable Financial Plan and Budget Allocation Mechanism to Sectors and Localities to maintain necessary city infrastructure under decentralization **(Short to Mid-term)**

- Develop a long-term fiscal plan and promote fiscal soundness and sustainability
- Strengthen a process, approach and institutional structure for prioritization of investment projects
- Develop an integrated financing strategy, which includes public and private funds.

(ii) Infrastructure Development Method (PPP) (Short term: 1-3 years)

- Formulate bankable PPP projects. (with necessary budgeting, government guarantee, Viability Gap Funding(VGF), appropriate risk allocation and advisers)
- Enhance appraisal capacity in the City and develop procedure on PPP projects
- Hire an independent engineering consultant
- Capacity building of public officers, (including support on education trainings about respective infrastructure's structure pattern, secondment to the private sector transaction advisors' support / hiring experts from private sector).
- Develop "PPP process guideline" for procurement process
- Strengthen promotion organization

(b) Main Coordinating Agency: Department of Finance (DOF) for (i) & Department of Planning and Investment (DPI) for (ii)

5) Action 5: Establish a Comprehensive Human Resource Development System

(a) Scope: Promote Danang City as a center of human resources development in Vietnam and also for GMS. As one of new pillar industrial development strategies, set capacity development of public sector, human resources development of private sectors, closely linked with new industrial development strategies, and develop integrated human resources development system in Danang City. This action includes following components:

[1] See further detail in the Attachment of the Report

(i) Review the Existing Educational Institutes, Training institutes, Programs and Implementation Systems (Short term: within 1 year)

- Develop a job market database (job offers and applications) of Danang City and CFEZ to grasp the current and future job market trends.
- Promote to establishing a career center to have common functions and rules at vocational schools, colleges and universities in Danang, and integrate the data for improving assistance for students and recruitment by private companies. JICA ODA project for vocational training is currently under consideration, which includes Danang Vocational Centre as one of the targeted colleges.
- In order to draft human resource development strategies for promoting industrial development by the expected growth engines, such as IT, tourism, medical services, and High-Tech industries, human resource development policies in other major cities will be reviewed, especially for middle management, skilled labors, and also highlight adult education/ continuing education, etc.)

(ii) Build up the Concept for Developing Comprehensive Human Resource Development Framework (Short term)

- Design a comprehensive training system for civil servants to develop administrative and technical capacities besides a state-wide structural training system
- Design adult educations, short courses collaborating with higher educational institutes, such as Danang Universities and national institutes.
- For developing human resource related to the industrial development strategies in the Action 2, education training sections of respective organizations shall establish a “public and private sector personnel training promoting committee” which DOLISA serves as secretariat, jointly with educational institutions, the chamber of commerce, business associations, private enterprises, Investment Promotion Center (IPC). Develop more practical/working level hands-on curriculum in corresponding to suggestions made by the committee.
- Develop and promote an education and training mechanism (including short program, continued education, practical training, etc.) for workers and any citizens who want to continue their study, focusing on the core industries of Danang.
- Design a institutional framework to consolidate the management of human resource matching between educational service providers and students/ worker, i.e. effectively make use of active seniors
- Formulate a system design to integrating the field of human resources development (leader, teacher) and the labor market (job offer, job hunting)

(b) Main Coordinating Agency: Center for Promotion of Human Resources Development (CP-HRD)

6) Action 6: Spatial Plan Management

(a) Scope: Strengthen administrative capacities and establish an effective institutional system to promote desirable land-use and urban development, and to prevent sprawl (unregulated low-density urban area expansion), which is a major obstacle against environmentally sustainable urban development, i.e. public transport based compact urban city with low carbon society. This action includes following components

(i) Consensus Building and Political Commitments towards environmentally sustainable urban development with special attention to materializing the compact city model based on public transportation system (in combining with a) and b) of the sub-components of1) of the Action 1 **(Short term: 1 year)**

(ii) Formulation of a Practical Mechanism and Reinforce Implementation Capacities to manage urban development (Short term: 1 year)

- Redefine and reserve land for infrastructure and urban development, and reflect the land-use in the urban plans. Identify technical and institutional issues on the course of institutional formulation, and formulate necessary city regulations and/or guidelines, including revising existing ordinances and so on.
- Defining special project areas for redevelopment and study about land acquisition measures, such as land readjustment, land rights conversion method (exchange a new land with same value) which can be applicable for Danang City.
- By learning lessens above b), formulate a new mechanism of Danang land readjustment under the current Vietnam laws and regulations.

(iii) Development of Implementation Plan for securing the land for infrastructure and the private development (Short term: 1 year)

- Conduct workshop and dialogue with citizens to disseminate new mechanisms described above c) among authorities, private sectors and citizens.
- Start to prepare for land acquisition based on the urban development master plans, in order to secure required land for large scale infrastructure, such as mass rapid transit (MRT) connecting north and south, large scale new towns, and CBD, etc. in the mid-long term plans

(b) Main Coordinating Agency: Land Fund Development Center (LFDC) under DONRE

6.3 Proposed Programs/Projects

6.8 Proposed Programs and Projects are as follows:

1) Program/Project 1: Scale-up Environment Improvement Projects

(a) Scope: Structure an environment improvement measures, taking existing and future urban area and land-use into consideration, and carry out such measures. Sub-components of the environment improvement primarily include drainage, sewage treatment and solid waste management including separate collection and treatment, and also include but not limited to, air, soil, noise, seawater, surface water, underground water, coastal area, eco-preservation, etc. This program include following components:

(i) **Develop Environment Improvement Measures,** Check Existing and Future Urban area and Land-use, and Carry out such measures **(Short-term)**

Sub-components of the environment improvement should primarily focus on the (a) Drainage, sewage treatment (Drainage and Wastewater Improvement by the World Bank); (b) Solid waste management including separate collection and treatment; (c) Improving air, soil, noise, seawater, surface water, underground water, coastal area, eco-preservation, etc.

- Carry out F/S for a wastewater treatment plant (WWTP) in the eastern coastal area under JICA's support.
- Human resource development in wastewater management for operating the WWTP (Financed by the World Bank).
- Formulate and carry out an action plan to realize the project of Hoan Lien water supply plant.
- Improve the drainage system to resolve the flood problem especially in Lien Chieu, Son Tra and Central area of Hai Chau, Thanh Khe and Ngu Han Son districts.
- Formulate a master plan[2] for solid waste management, and carry out a plan of landfill disposal site, including the extension of the use of the landfill. (Financed by Boras City, Sweden).
- Formulate and carry out an F/S of at-source separation, collection and treatment of solid waste.
- Develop a plan and implementation plan F/S on capacity building in collection and treatment of sewage sludge, solid waste, organic wastes, industrial waste, hazardous waste, etc. Assess and improve the waste intermediate stations and equipment and vehicles to gather, transport and treat solid wastes; Project for treatment of buried wastes in Khanh Son Landfill.

(b) Main Coordinating Agency: Department of Construction (DOC)

[2] Technical assistance was carried out by Boras City, Sweden

2) Program/Project 2: Development of Integrated Danang Port System (Lien Chieu & Tien Sa Ports)

(a) Scope: Develop Lien Chieu port and Tien Sa port as international gateway of East-West Economic Corridor (EWEC), Greater Mekong Sub-region (GMS) and CFEZ. Building up integrated port development plan and cooperative mechanism for Lien Chieu logistics port, Tien Sa passenger terminal and Danang bay. This program include following components:

(i) Pre-Feasibility Study to integrate Danang Port system. Long term development plan of the port system (Short-term: within 1 year)

- Conduct the multimodal transportation research and development of appropriate transportation modes, connectivity, infrastructure development in order to clarify the strategic role of Danang in the CFEZ, Vietnam, EWEC, GMS and ASEAN
- Study Lien Chieu as logistics hub and Tien Sa for tourists and passengers' port by steps in mid- and long-term. Draft the roadmap including regional supply chain and service provider, cargo/ passenger volume, benchmarks and identify the challenges and formulate financing plan.
- Coordinate with the neighboring provinces and the Ministry of Transport to strengthen overall logistics in the CFEZ
- Incorporate these plans into Danang City's SEDP and M/P in future.

* Pre-feasibility study, which is similar to preliminary study in terms of Japan's ODA scheme, has been conducted by a Vietnamese consulting firm and the study was funded by the Danang City. The study is supposed to produce the final output by the end of 2016.

(b) Main Coordinating Agency: Department of Transport (DOT)

3) Program/Project 3: Develop a Comprehensive Public Transport Network and Transit-oriented Development (TOD)

(a) Scope: Lay down policies and plans to develop compact, low carbon-emission and public transport based urban area. Cleary articulate functions of Urban Mass Rapid Transit (UMRT) and integrated urban development strategies for urban area. Strengthen connectivity, growth centers and promote integrated urban development with bordering area of Quang Nam province, i.e. the direction to Hoi An city, and Hue province. This include the following components:

(i) Set up the plan and policies to secure the compact, low-carbon urban development based on public transportation (Short-term: 1-3 years)

- Build consensus for developing strategies of formulating the sub-urban cores with public transport under the comprehensive and sustainable urban development strategy

- Reflect the consensus into the 4. Develop New Central Business Districts (CBDs) and Renovate the Existing CBDs and 5. Develop Mixed Used Multifunctional New Town(s)

(ii) Coordinate for developing the public transportation (UMRT) and TOD jointly with Quang Nam Province (Short-term: 1-3 years)

- Build up a coordination body with Quang Nam including Hoi An city, etc.
- Define basing alignment of UMRT based on Pre-F/S
- Draft a basic development plan for the area along the UMRT

(iii) Conduct pre F/S and define the alignment (Short-term: 1-3 years)

- Based on 1) a), conduct the Pre-F/S connecting growth centers, CBDs, and large-scale new towns.
- Materialize the 3) b – strengthen the land use and development control.

(iv) Develop UMRT and carry out TOD.

(b) Main Coordinating Agency: Department of Transport (DOT)

4) Program/Project 4: Develop Mixed-Use Multifunctional New Town(s)

(a) Scope: Carry out in conjunction with above 3 and 4, formulate plans to develop an integrated large-scaled new town at southern part of Danang City, bordering Quang Nam province, in order to deliver suitable living environment to anticipated ballooning population in near future. This include the following components:

(i) Formulation of the Development Plan to build a large scale new town in the south of Danang and the adjoining areas of Quang Nam province **(Short to Mid-/Long-term)**

- Build consensus for developing strategies of public transport, large-scale new township under the comprehensive and sustainable urban development strategy.
- Set up the coordination committee for developing new town with Quang Nam province and Dien Ban district.
- Reflect the development plan into the master plans of Danang City, Quang Nam province and Dien Ban district。
- Set up the independent organization (e.g. new town development committee by public or private entities) and materialize the new town development

(ii) Strategic Development of High-tech Park (Long-term)

- Conduct feasibility study to build new township with environmental/smart city functions in High-tech parks.

(b) Main Coordinating Agency: Department of Construction (DOC)

5) Programs/Project 5: Strengthen Natural Disaster Management System

(a) Scope: Conduct surveys and draw up preventive and mitigative plans to mitigate natural disaster risks (flooding, mudslide, typhoon, etc.) in existing and planned urban areas. Uphold plans and activities to strengthen disaster management system. This include the following components:

(i) Conduct Surveys and Draw up Preventive and Mitigative Plans to mitigate natural disaster risks in existing and planned urban areas. Formulate preventive and mitigative plans for natural and urban disasters **(Short-term: 1- 3 years)**

- Update and integrate the existing hazard maps and formulate preventive and mitigative plans for natural and urban disasters and identify the potential adverse impacts against residents and industries.

(ii) Awareness Building and Educational Campaign (Short-term: 1- 3 years)

- Plan and implement the propaganda on disaster prevention and fighting (DPF), adaptation to climate change - Educate citizens and policy decision makers to enhance the awareness of natural and urban disaster preventive and mitigative measures, and secure necessary financial resources
- Introduce early warning system and promote propaganda to citizens
- Produce the education materials / guidelines of natural and urban disasters and evacuation for teachers and students of primary, secondary schools.
- Extend the project output in Hai Chau District of the Capacity Building for School Centered Community Based Disaster Risk Management of Japanese NGO, funded by JICA

(iii) Revision of the Disaster Prevention Policy and Relevant Master Plans (Short-term: 1- 3 years)

In order to prevent uncontrolled development in high-hazard-risk areas, formulate and carry out tangible control and induction measures against the development by private sector.

- Promote the afforestation by balancing the environmental value and disaster prevention, and urban development, providing disaster prevention technologies and integrating the future urban development master plan.
- Conduct specific policy and measures by Integrating the climate change policies already identified by previous projects
- Strengthen regional linkage in disaster prevention, water resources management and climate change adaptation".

(b) Main Coordinating Agency: Department of Natural Resources and Environment (DONRE)

6.4 Implementation Timeline

6.9 The identified strategic programs need to be consolidated into one timeline to clarify the timing for implementation of the program components.

Table 6.4.1 Roadmap to Realize Proposed Cross-cutting Actions and Programs

			Main Agency	2016	2017	2018	2019	2020
Planning and Study	A1 Elaborate Integrated and Sustainable Urban Development Strategies	A1-1 Formulate Integrated Urban Plan Strategies	DPI					
		A1-1-1 Consensus Building and Political Commitments towards Environmentally Sustainable Urban Development emphasizing on Compact City Model based on Public Transport System	DPI					
		A1-2 Formulate a Framework of Danang Metropolitan Plan and Visioning the Role of and Status of Danang City in the CFEZ up to 2030	DPI					
		A1-3 Develop a Mixed-Use Multifunctional New Towns	DOC					
Cross-cutting Major Actions	A2. Redefine and Elaborate Development Strategies based on Focal New Industries to Increase Competitiveness	A2-1. Industrial Development Strategy Formulation for ICT and Tourism Industries	DOIT	Strategy Formulation	Implementation		Review	Implementation
		A2-2. High-tech Park Promotion Strategy Formulation	DPI	Strategy Formulation	Implementation		Review	Implementation
		A2-3. Marketing Tool Development to Attract Japanese Investors to High-tech Park (& Industrial Park)	DPI	Development of marketing tool	Implementation		Review	Implementation
		A2-4. Nurture Competitive New Industries centered around Tourism Development	DPI	Strateg Formulation			Review	
		A2-5. Nurture Supporting Industry (SMEs)	DPI	Strategy Formulation			SME Center Construction	
	A3. Build a Sustainable Funding Mechanism and an Infrastructure Development Method	A3-1. Development of Long-term Fiscal Plan	DOF DPI	Planning		Implementation		
		A3-2. Development of Investment Plan	DOF DPI	Planning		Implementation		
		A3-3. Development of Financing Plan	DOF DPI	Planning		Implementation		
		A3-4. Formulate Bankable PPP Projects	DOF DPI	Planning		Implementation		
	A4. Update "Environment City of Danang" and Formulate an Integrated Strategic Plan for a New "Environment City" Manifesto	A1-3 Establish Shared Vision on What an "Environment City" Spells Out and draft a Comprehensive Environmental Management Policy	DONRE					
	A5. Establish a Comprehensive Human Resource Development System	A4-1. Build out Career Development Services System at Educational Institutions	CP-HRD	Basic Design	Implementation			
		A4-2. Capacity Development System for Public Officials (Technical Training Center) on Urban Development	CP-HRD		Basic Design		Implementation	
	A6. Spatial Plan Management	A5-1. Urban Landscape Design Guideline/City Regulation Development	DOC	Develop guidelines/regulations	Activities at target areas			
		A5-2. Redevelopment of Han and Con Market and Surrounding Area (tentative)	DOC	Concept building	Basic Design			
		A5-3. Acceleration of Relocation of Railway Station and Redevelopment of Danang Station Area	DOT DOC	World Bank is planning to fund the survey soon				

(continued)

			Main Agency	2016	2017	2018	2019	2020
Major Programs	P1. Scale-up Environment Improvement Projects	P1-1. Feasibility Study for Wastewater Treatment Plant in the Eastern Coastal Area	DOC	under progress				
		P1-2. Human Resource Development on Wastewater Management for Operating the Wastewater Treatment Plant	DOC		Expected to be done under ODA (Loan)			
		P1-3. Action Plan to Realize Hoan Lien Water Supply Plant Project	DOC	under progress				
		P1-4. Improve Drainage System to Resolve Flood Problem in Lien Chieu, Son Tra and 3 Central Districts	DOC					
		P1-5. Implementation of Possible Action Plans based on Solid Waste Management Master Plan	DONRE DOC					
	P2. Develop Integrated Danang Port System (Lien Chieu and Tien Sa Ports)	P2-1. Pre-Feasibility Study of Lien Chieu Port	DOC		F/S			
	(Strengthen Regional Connectivity through Strategic Port and Airport Development)	P2-2. (Development of Lien Chieu Port)	DOC					
	P3. Develop a Competitive Public Transport Network and Transit-Oriented Development (TOD)	P3-1. Pre-Feasibility Study (Set up Policies and Plans to Develop Compact and Low-carbon Society based on Public Transport)	DOT	Concept building Pre-F/S				
		P3-2. Feasibility Study and Basic Design/Detailed Design for UMRT and TOD	DOT			F/S		B/D
	P4. Develop Mixed-Use Multifunctional New Town(s)	P4-1. Develop a Mixed-Use Multifunctional New Town in the south of Danang and the adjoining areas of Quang Nam Province	DOC		Concept building Consensus Building			
		P4-2. Strategic Development of High-tech Park	DPI					
	P5. Strengthen Natural Disaster Management System	P5-1. Strengthen Natural & Urban Disaster Management System	DONRE	Preparation	Implementation			
		P5-2. Update the Disaster Prevention Policy and Relevant Development Plans to Prevent Uncontrolled Development in High-hazard-risk Areas	DONRE			Implementation		

Source: JICA Study Team.

6.5 Key Considerations

6.10 “Planning and Study” of Table 6.4.1 is considered as the upper plans and strategies that covers and impacts overall city development. It is stressed that Danang City shall take necessary actions (A2 – A6 and P1 – P6) and incorporate the plans, strategies and feedbacks through the activities to the upper plans and strategies. When formulating a next SEDP, it is underlined that the City needs not only to set target indicators, but also, and more importantly, set economic development strategies based on the above mentioned process, and establish a mechanism to prioritize investment plans for urban development. Once such mechanism is established, the City shall define “selection and concentration” on capital investment for economic and urban development, in order to more effectively utilize city budget, which will more likely be limited in the future.

6.11 It is a critical challenge for the City that it sustains its revenue by keeping economic and industrial development, in order to keep providing satisfactory level of sustainable public services, and also investing for public infrastructure development. Again, it is essential that the City formulate practical strategies and investment plans to foster SMEs and strategic industries, such as tourism and IT industry. An approach of “value capture of sold land” is one thing that the City might want to take a swift action since it can be carried out without new investment, but by reviewing and re-evaluating the existing land assets of the City.

6.12 The last key consideration is a challenge against “economies of scale” when the City formulates economic and urban development strategies. The economic market of Danang itself is not significantly large, once the City considers investing a mega infrastructure development project, such as port and public transport. Therefore, regional cooperation with surrounding areas and most importantly with CFEZ is a very important factor for the City. Danang City understands the regional cooperation is one of the important factors to sustain and farther develop the city. Since the mechanism for such regional cooperation already exists, it is underlined that the City takes an initiative to select one action and/or project to start, so that the City will be able to learn what could be done through such regional cooperation and what would be the issues for fostering such regional cooperation. Regional cooperation and coordination is one of key solutions for the City to expand its “economies of scale” and sustain and farther develop the city.

ATTACHMENT

Supplemental Note on
Action 4: Build a Sustainable Funding Mechanism and
an Infrastructure Development Method

Supplemental Note on Action 4: Build a Sustainable Funding Mechanism and an Infrastructure Development Method

This is to explain farther details on proposed Action Plan of on "Build a Sustainable Funding Mechanism and on Infrastructure Development Method" in the following:

1) Development of Long-term Fiscal Planning[3]

(a) Regulatory Framework

(i) Develop a guideline on long-term fiscal planning

- Consider assumptions in order to project long term fiscal balance
- Consider items, format and process to develop the plan
- Develop approval procedure for Long-term Fiscal Plan
- Develop monitoring and evaluation system

(ii) Clarify fiscal soundness and sustainability for a long-term?

- Set an appropriate performance index like long-term creditworthy and debt-paying ability
- Set up a comprehensive liability management mechanism
- Review and include indirect liabilities (e.g. liabilities of the city's agencies, Local Development Funds and others) for monitoring and a risk management program—including keeping tabs of the value of the contingent liability, how to account them, track when they might become real, and how to provision for them.
  - Shift standard of borrowing limit from annual investment expenditure to long-term capacity to repay the liabilities in the city
  - Develop index to manage the debt service burden (such as Debt Service Coverage Ratio)
- Consider sources of revenue and tax which Danang City can collect independently
- New fee and charge for urban O&M services based on the principle of cost recovery.

(b) Institutional Framework and Operation

(i) Set up a task force that coordinates with related agencies for a long-term fiscal plan

- Define the roles of the related agencies and persons responsible(by DOF)

(ii) Develop a fiscal plan (revenue and expenditure projection) for the next 5-10 years

- Estimate long term budget revenue based on the projections of the economic outlook, population, debt-paying ability and future local fiscal system
- Estimate long term budget expenditure taking future growth of recurrent

[3] It is assumed that long-term fiscal plan includes "Five-year Fiscal Plan" that are stipulated by the New State Budget Law

expenditure and repayment of the liabilities into account
- Develop risk analyses methods and mitigation measures
- Develop risk analysis and implement risk simulation

(iii) Develop effective tools for better financial management
- Develop an efficient and effective format (and databases) for financial information (including assets and liabilities)
- Disclose the appropriate fiscal information and performance index to investors (including obtaining external credit rating)

(iv) Develop an efficient and effective budget planning by means of providing incentives to departments that implement projects
- Consider shifting from norm-based budget to performance based budget
- Consider sharing the cost reduction amount and accountability with DOF and the department (profit share)

(v) Develop a capacity building program

2) Improvement of Investment Plan

(a) Regulatory Framework

(i) Prioritization of investment projects
- Set up an evaluation method and process guidelines to realize and achieve the city's development policy for prioritization
- Incorporate not only public investment but the other investment method (e.g. outsourcing, PPP, privatization) based on Long-term Fiscal Plan and Financing Plan

(b) Institutional Framework and Operation

(i) Develop a clear decision making process
(ii) Consider the necessity of a new organization for projects under several departments
(iii) Develop a capacity building program

3) Development of Financing Plan

(a) Regulatory Framework

(i) Develop an additional procedure for a financing plan with alternative sources (e.g. central government funds, donor funds, loans, bonds, private sectors etc.) that consider future revenue estimates in Long-term Fiscal Plan and necessary Investment Plan
- Consider the characteristics of each sector
- Consider additional requirements for large projects and regional projects
- Consider alternative sources with priority for projects that are highly evaluated by Investment Plan

(ii) Integrate PPP project planning into existing procedures

(iii) Develop a strategy on direct financing, i.e. a method of financing which local governments borrow funds directly from a financial market (e.g. municipal bond/revenue bond, securitization of infrastructure asset or real estate etc.), and/or borrowing from commercial banks

(b) Institutional Framework and Operation

(i) Develop an institutional framework for the development and management of a comprehensive financing plan, and to clarify the roles and responsibilities of related agencies
(ii) Develop a financing plan with alternative sources that will consider future revenue estimates provided by Long-term Fiscal Plan and Investment Plan for the city
(iii) Develop a capacity building program

4) Development of Infrastructure PPP Projects

(a) Project Scheme

(i) Tariff and Budget for VGF

- Allocate some budget to PPP projects to fund the viability gap until the cost recovery tariff
- Ensure budget from central government and/or general budget of Danang City
- Detailed funding structures to be built with support of PPP experts

(ii) Risk allocation

- Learn about typical risk allocation of each infrastructure
- Develop " Risk allocation guideline for PPP" and model contracts for PPP
- Develop optimal risk allocation among stakeholders with consultation with experts

(iii) Guarantee

- Propose guarantee structure and institutional arrangement to central government including a backup facility by JICA and/or other donors

(b) Procurement

(i) Applied technologies

- Utilize an independent engineering consultant reviewing investor's proposal and FS report

(ii) Appraisal of projects

- Familiarize with PPP to acquire necessary knowledge for appraising projects with measures such as educational program (learning bankable PPP cases, etc.); secondment to private sector; transaction advisors' support / experts from private sector
- Develop "PPP process guideline" for procurement process if required

(c) Promoter

- Hire a general advisor

- Establishment of PPP dedicated unit

(d) Detailed Action Plan

Among above actions, some actions should be done by central governments. Then action plans are split into request for central government and Danang city's action. Most actions are project-related, and such actions should be done in accordance with project schedule. (see Table A)

Table A Draft Action Plan by Player and Timing

Category		Draft Action Plan							
		Action Summary	Request to Central Government			Action of Danang City			
			Action	When	In Charge	Action	When	In Charge	
Not bankable	Securing budget for VGF or tariff	Allocate some of the budget to PPP projects to fund the viability gap (e.g. getting funds from the central government and/or the general budget of Danang City); Detailed funding structures need to be discussed with the transaction advisor	Subsidiary for consultant fees *(The fee for a waste water treatment PPP in an industrial zone has been requested by the DPI to the MPI)*	At the beginning of pre-FS, FS and investor selection	DPI				
						Detailed funding structures will be worked out through the support of a consultant	In the FS and investor selection phase	DPI and DOF supported by the consultant	
			Allocate central government's budget as part of the funds for VGF	Following the appraisal of FS	DPI supported by a consultant	Allocate Danang City's budget as part of the funds for VGF	Following the appraisal of FS	DPI supported by the consultant	
	Risk allocation	Learn about the typical risk allocation for each infrastructure; Develop "Risk allocation guidelines for PPP"and model contracts for PPP; Hire a transaction advisor to make the optimal risk allocation among the stakeholders	Hold an intensive seminar on the typical risk allocations of each infrastructure *(MPI is already planning to hold PPP seminars and it is required to include typical risk allocation into the seminar agenda)*	As soon as possible	DPI				
			Develop model contracts for PPP and/or "Risk allocation guidelines for PPP" *(MPI is considering developing a standard contract, but has not yet decided. A request from Danang City will help them decide to develop it.)*	As soon as possible	DPI				
						Hire a consultant/ transaction advisor to make optimal risk allocations among the stakeholders	In the beginning of pre-FS, FS and investor selection	DPI	

Category		Draft Action Plan						
		Action Summary	Request to Central Government			Action of Danang City		
			Action	When	In Charge	Action	When	In Charge
	Government guarantee	Propose a guaranteed structure and an institutional arrangement to the central government that includes a backup facility by JICA and/or other donors.	Propose a guaranteed structure and institutional arrangement to the central government that includes a backup facility by JICA and/or other donors.	During pre-FS or FS and when appraising a project	DPI supported by a consultant	Consider guarantees from Danang City	During pre-FS or FS and when appraising a project	DPI supported by a consultant
Not appraisable	Applied technologies	Hire an independent engineering consultant to review the investor's proposal and FS report				Hire an independent engineering consultant to review the investor's proposal and FS report	In the beginning of pre-FS, FS and investor selection	DPI
	Appraisal of projects	- Get familiarized with PPP - Educational programs (e.g. learning bankable PPP cases, etc.) - Secondment to the private sector - Transaction advisors' support/Hiring experts from the private sector - Develop "PPP process guidelines" for the procurement process, if required	Educational program (learning bankable PPP cases, etc.) *(MPI is already planning to hold PPP seminars.)*	Wait to see MPI issues educational program?	DPI			
			Develop "PPP process guidelines" for the procurement process if required *(MPI is drafting circulars for investor selection and standard RFPs. When it is not enough, it is necessary to request for the guidelines.)*	After the circulars are published, if necessary	DPI			
						Secondment to the private sector (e.g. banking, insurance company, contractor, maker, or operator who conduct PPPs.), from the government where PPP is conducted - Hiring experts from the private sector	As soon as possible	DPI

Category		Draft Action Plan						
		Action Summary	Request to Central Government			Action of Danang City		
			Action	When	In Charge	Action	When	In Charge
						Secondment to foreign governments and/or international aid organizations where PPP is dealt with.	As soon as possible	DPI
						Hiring a full-time "general advisor" who supports all the aspects of PPP promotion in Danang, and who is independent from the consultants/ transaction advisors of each project	As soon as possible	DPI
	Promoter	Needs to promote the engine to boost the PPP project implementation	Educational program on the best practices of foreign PPP promoters *(MPI is already planning to hold PPP seminars and is required to include institutional arrangements of the municipality into the seminar agenda)*	As soon as possible	DPI	Learn the best practices of foreign PPP Conduct a research on institutional arrangements in foreign countries by Danang City's funds, and visit to see how it has been developed	As soon as possible	DPI
						Institutional arrangements in order to promote PPP (e.g. the establishment of a PPP dedicated unit)	As soon as possible or following the seminar	DPI

Source: JICA Study Team