

THE STUDY ON NATIONAL INTEGRATED STRATEGY
OF COASTAL AREA
AND MASTER PLAN OF SIHANOUK-VILLE
FOR SUSTAINABLE DEVELOPMENT

FINAL REPORT
< SUMMARY >

BOOK I

NATIONAL INTEGRATED DEVELOPMENT STRATEGY
FOR COASTAL AREA



NOVEMBER 2010

NIPPON KOEI CO., LTD.
KRI INTERNATIONAL CORP.
VALUE PLANNING INTERNATIONAL, INC.

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MINISTRY OF LAND MANAGEMENT, URBAN
PLANNING AND CONSTRUCTION (MLMUPC)
ROYAL GOVERNMENT OF CAMBODIA

JAPAN INTERNATIONAL
COOPERATION AGENCY (JICA)

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AND MASTER PLAN OF SIHANOUK-VILLE
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PREFACE

In response to a request from the Royal Government of Cambodia (RGC), the Government of Japan decided to conduct “The Study on National Integrated Strategy of Coastal Area and Master Plan of Sihanouk-ville for Sustainable Development”, and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA selected and dispatched a Study Team headed by Mr. YAMADA Koji of Nippon Koei Co., Ltd. to Cambodia between March 2009 and June 2010.

In cooperation with RGC, the JICA study team conducted field surveys and formulated the National Integrated Strategy of Coastal Area and Master Plan of Sihanouk-viile, through discussions with concerned officials of RGC. Upon returning to Japan, the JICA study team conducted further studies and prepared this final report.

I hope that this report will contribute to the sustainable development of Coastal Area and to the enhancement of the friendly relationship between our two countries.

Finally, I wish to express my sincere appreciation for all the official concerned of RGC and other experts for their close cooperation and assistance extended to the study team.

November 2010

Kiyofumi KONISHI
Director General
Economic Infrastructure Department
Japan International Cooperation Agency

November 2010

Mr. Kiyofumi KONISHI
Director General, Economic Infrastructure Department
Japan International Cooperation Agency
Tokyo, Japan

Subject: Letter of Transmittal

Dear Sir,

We are pleased to submit herewith the Final Report of “The Study on National Integrated Strategy of Coastal Area and Master Plan of Sihanouk-ville for Sustainable Development”. This study was conducted by Nippon Koei Co., Ltd. in association with KRI International Corp and Value Planning International Inc., under a contract to JICA during the period from March 2009 to September 2010. The report comprises a Summary and Main Report for the National Strategy of Coastal Area (as Book I), plus a Summary and Main Report for the Master Plan of Sihanouk-ville (as Book II).

The report proposes strategies and recommends implementation plans to achieve the well-balanced and sustainable development in Coastal Area of Cambodia. These recommendations reflect the results of National Integrated Strategy of Coastal Area and the Master Plan of Sihanouk-ville.

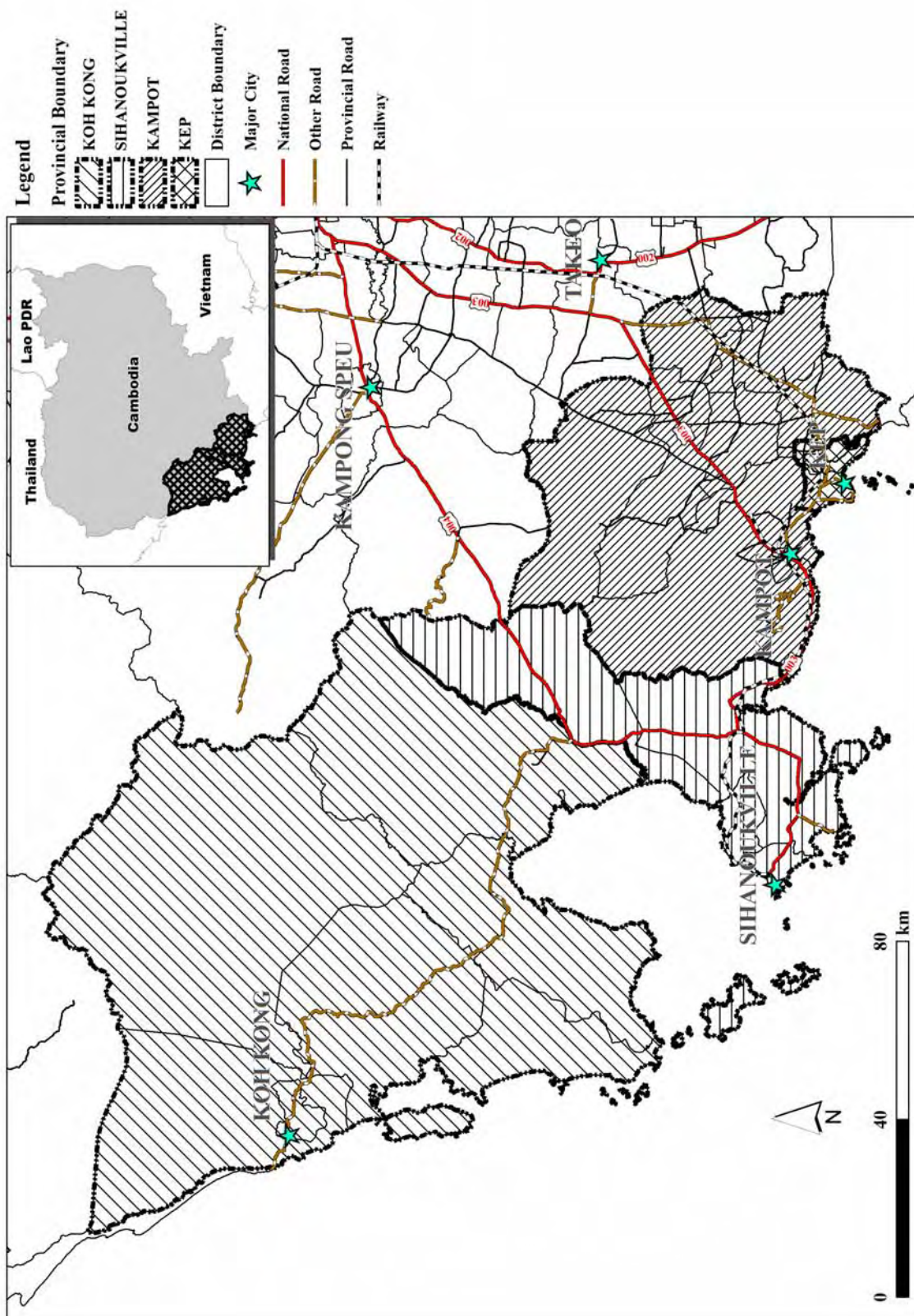
We would like to take this opportunity to express our sincere gratitude to your Agency, Ministry of Foreign Affairs of Japan, JICA Cambodia Office, the Embassy of Japan, and the Royal Government of Cambodia including the main counterpart, Ministry of Land Management, Urban Planning and Construction (MLMUPC) and all the other concerned organizations those who rendered unstinting assistance to JICA Study Team through the study period. The Final Report is the fruit of excellent collaboration between all participants in this study.

Yours faithfully,

YAMADA Koji

Team Leader, JICA Study Team

The Study on National Integrated Strategy of
Coastal Area and Master Plan of
Sihanouk-ville for Sustainable Development



Location Map

Summary of Development Strategies and Management Issues in Sector/Province in Coastal Area

Sector/Sub-sector		Koh Kong					Preah Sihanouk					Kampot					Kep				
Visions 2030		<ul style="list-style-type: none"> Be the New Industrial Sub-center related to the Thai economy; and Be a World-class Eco-tourism Destination 					<ul style="list-style-type: none"> Function as the National Gateway of international trade; Be the National Logistic Center linked with the ASEAN markets; Be a National Growth Center with pivotal urban services; Be an Industrial Center with locations of modern and/or non-traditional manufactures; and Be an internationally reputable Beach Resort Destination 					<ul style="list-style-type: none"> Be an Agricultural and Agro-processing Center with agriculture-related higher educational function, an Inter-provincial Market Center for agricultural and fishery products, and a Goods Distribution Center related to the Vietnam Economy; Be an Unique Tourism Destination with historical & cultural assets 					<ul style="list-style-type: none"> Be a Health-oriented Long-stay Resort; Be attractive for nature-lover tourists from both international and domestic market; 				
Spatial Structure																					
Development Framework	Target Years	2008	2020	2030	AGR ('30/'08)	2008	2020	2030	AGR ('30/'08)	2008	2020	2030	AGR ('30/'08)	2008	2020	2030	AGR ('30/'08)				
	Population	117,481	143,240	175,470	1.8%	221,396	309,580	398,220	2.7%	585,850	704,930	822,140	1.6%	35,753	49,500	63,680	2.7%				
	Employments	Primary	25,200	25,600	27,600	0.4%	57,000	39,600	32,200	-2.6%	259,000	264,100	23,700	-10.3%	11,900	13,900	13,700	0.6%			
		Secondary	3,500	10,900	20,700	8.4%	12,700	46,700	88,900	9.2%	4,900	27,400	63,900	12.4%	300	2,100	5,200	13.8%			
		Tertiary	18,700	25,700	31,600	2.4%	42,500	75,500	88,800	3.4%	31,600	75,900	128,500	6.6%	2,300	5,300	9,500	6.7%			
Development Strategies (1/2)	Economic & Industrial Development	<ul style="list-style-type: none"> Promotion of industries that can achieve division of labor with industries related with Eastern Seaboard of Thailand Promotion of aquaculture and fish-processing industries Promotion of OCOP (One Community, One Product) movement 					<ul style="list-style-type: none"> Promote foreign investment in SEZs to diversify export-oriented industries Promote industries that can achieve division of labor with industries related with Eastern Seaboard of Thailand Promote organic vegetables to supply for the tourism sector, hotels and restaurants Promote aquaculture and fish-processing industries Promote the OCOP movement 					<ul style="list-style-type: none"> Promote investment that have linkages with local industries and resource Develop an Coastal Area Agro-marketing Center Promote organic vegetables and fruits for export Promote aquaculture and fish-processing industries Promote the OCOP movement 					<ul style="list-style-type: none"> Promote organic vegetables and fruits for export Promote the OCOP movement 				
	Social Development	<ul style="list-style-type: none"> Facilitate rural development Establish Community Based Organizations, encouraging supports by government and NGOs for the on-site improvement 					<ul style="list-style-type: none"> Prepare a land use and housing plan for the urban poor Prepare a mechanism to control illegal human settlements Assure a transparent process for facilitation of the re-settlement program of dwellers in the SHV Port area. 					<ul style="list-style-type: none"> Promote the rural development Establish Community Based Organizations, encouraging supports by government and NGOs for on-site improvement 					<ul style="list-style-type: none"> Promote the rural development Establish Community Based Organizations, encouraging supports by government and NGOs for on-site improvement 				
	Tourism Development	<ul style="list-style-type: none"> Facilitate "Community-based Eco-tourism", focusing on three areas designated by CCBEN-Cambodia Community-based Eco-tourism Network) 					<ul style="list-style-type: none"> Develop an world-class beach resort at Ocheuteal Beach and Otres Beach (To this end, a Tourism Master Plan shall urgently be formulated) 					<ul style="list-style-type: none"> Promote "Town Tourism" with historical assets and new tourism products for young generations Promote an eco-tourism network with Koh Kong 					<ul style="list-style-type: none"> Promote health-oriented tourism for refreshing with seafood, fresh air and natural landscape, plus medical check and rehabilitation. 				
		<ul style="list-style-type: none"> Promote advertising to disseminate the attractive product images of "the Richness of Coastal Resources" and a variety of tourism opportunities through a variety of media and IT devices; Promote collective actions of tourism promotion through organizing a Hoteliers Association in the coastal area; Provide training opportunities for workers and managers engaged or to be engaged in the tourism business sector; Promote community-driven tourism business development, making the best use of local assets and industries in linkage with the OCOP (One Community, One Product) movements. 																			

Sector/Sub-sector		Koh Kong	Preah Sihanouk	Kampot	Kep	
Development Strategies (2/2)	Human Resource Development	<ul style="list-style-type: none"> Develop a Vocational Center to train middle class engineers with basic skills for manufacturing, mechanical engineering, quality management and others. 	<ul style="list-style-type: none"> Develop a Hospitality Business Collage (or Center) to train and educate human resource for the tourism industry; Develop a Vocational Center to train middle class engineers with basic skills for computer operation, IT technologies and business management. 	<ul style="list-style-type: none"> Develop a National Collage of Agriculture where young leaders are fostered and educated for agricultural development 	<ul style="list-style-type: none"> Provide training opportunities for young generation to become local leaders and/or entrepreneurs for agricultural, fishery, food-processing, tourism and forwarding business. 	
	Infrastructure Development	Roads	<ul style="list-style-type: none"> Improve the road management and maintenance system for National Highway #48 in particular. Construct cross border facilities, considering cross border trade and transport. 	<ul style="list-style-type: none"> Construct an industrial (heavy-loaded) road in consideration of freight transport demands to connect the Ports in the northern coastal road via Stung Hav and another alternative corridor to/from Phnom Penh in long future. Improve the road management and maintenance system provincial roads as well as the national roads. 	<ul style="list-style-type: none"> Develop a proper road network with improvement of National Highway #3, considering freight transport and industry. Improve the road management & maintenance system Construct a cross-border facility for smoothing trading and transport activities to/from Vietnam. 	<ul style="list-style-type: none"> Improve or betterment the existing road to support the tourism development. Improve the road management and maintenance system.
		Railways	-	<ul style="list-style-type: none"> Rehabilitate the railway system for safe, speedy and punctual operation for both freight and passengers to/from Phnom Penh, installing the signaling system, rail crossing and other improvements. Prepare an operation for tourists with luxurious coach, named "Coast Express" Construct an ICD/Dry Port linked with the railway. 	<ul style="list-style-type: none"> Rehabilitate the railway system for safe, speedy and punctual operation for both freight and passengers to/from Phnom Penh, installing the signaling system, rail crossing and other improvements. Prepare an operation for tourists with luxurious coach, named "Coast Express" 	-
		Ports & Logistics	<ul style="list-style-type: none"> Explore a possibility and feasibility for development of a Deep Sea Port in or around the Kirsakor SEZ. 	<ul style="list-style-type: none"> Build and improve new transportation infrastructures to strengthen the logistic functions; Enhance the passenger terminal in the Sihanoukville Port Appropriate land usage planning and execution of land/water area within Sihanoukville Port Develop attractive and environment-friendly SEZs, linked with the logistic function of the Sihanoukville Port 	<ul style="list-style-type: none"> Improve the Kampot River Port for freight transport, fishery activities and tourists; and develop a new tourist port at the coastal area. 	<ul style="list-style-type: none"> Improve the tourist port with tourist information center and OCOP frontier functions.
		Water Supply	<ul style="list-style-type: none"> Provide a new elevated storage tank to improve pressures and meet peak demands. 	<ul style="list-style-type: none"> Expand the water supply network to serve more people. Replace old ductile iron pipes Implement structural improvements to the Kbal Chay reservoir 	<ul style="list-style-type: none"> Replace old asbestos cement pipes Expand the distribution network and provide elevated storage tank. 	<ul style="list-style-type: none"> MIME and DIME should closely monitor the quality of construction.
		Sewerage & Drainage	<ul style="list-style-type: none"> Improve drainage and provide a small scale sewage disposal system for the urban core. 	<ul style="list-style-type: none"> Implement a mandatory sewer connection program Implement decentralized sewerage schemes to protect beaches 	<ul style="list-style-type: none"> Provide a wastewater disposal system to improve sanitary conditions. 	<ul style="list-style-type: none"> Implement a wastewater disposal system to protect the beach front
		Solid Waste Management	<ul style="list-style-type: none"> Treatment capacity: 5 tons/ day (2009) → 59 t/d (2030) Stepwise Establishment of SWM (urban areas to rural areas); Introduction of 3R-based SWM; Introduction of Community-based SWM; Establishment of Main Infrastructures of SWM (a composite system with sanitary landfill site; garbage collection vehicles; collection containers; and carts for primary collection); and Establishment of Coastal Area Cooperation Campaign Committee on SWM; and Enhancement of Administration of Private Service for SWM. 	<ul style="list-style-type: none"> Treatment capacity: 73 t/d (2009) → 169 t/d (2030) 	<ul style="list-style-type: none"> Treatment capacity: 24 t/d (2009) → 243 t/d (2030) 	<ul style="list-style-type: none"> Treatment capacity: 5 t/d (2009) → 24 t/d (2030)
	Development Management (1/2)	Investment Management	<ul style="list-style-type: none"> Strengthen the SEZ function for promoting non-traditional and export-oriented industries; Promote harmonized investment in tourism, marine-based industries and resource-based industries; Strengthen the monitoring functions for post-approval investment activities, including SEZ development projects; and Establish the "Coastal Area Coordination Board for Promoting Investment, Exports and SEMs". 			
Land Use Management		<ul style="list-style-type: none"> Facilitate the formulation of Provincial Land Use Plan, District Land Use Plan at first, followed by Commune/Sangkat Land Use Plans, based on the relevant laws, sub-decrees and guidelines regulated by MLMUPC; Expedite the approval process of draft plans at the national level with strengthening the technical evaluation capacity for MLMUPC, or pursue an administrative reform so as to decentralize the approval process; Promote inter-governmental coordination process in formulating provincial development plan and land use plans, particularly with CDC, MOE, MAFF, MIME, MPWT, MRD and MOI. Facilitate the capacity development in planning, development management, monitoring and evaluation and permissive administration for officials of MLMUPC and DLMUPCC of the provincial governments. 				

Sector/Sub-sector		Koh Kong	Preah Sihanouk	Kampot	Kep	
Development Management (2/2)	Urban Development Management	<ul style="list-style-type: none"> Expedite the formulation of District Development Plan and Land Use Plan for the national approval, including defining the urbanization promotion area in future, based on the relevant law and sub-decrees. Strengthen the urban planning and management function of DLMUPCC with the capacity development programs; Execute special strategies to improve the urban development of: 1) Flood mitigation system; 2) Encouragement of market places; 3) Sanitary utility systems; 4) River-side landscape and urban amenities. 	<ul style="list-style-type: none"> Accelerate the formulation of Preah Sihanouk City Development Plan and Land Use Plan for the national approval, based on the relevant law and sub-decrees; Strengthen the urban planning and management function of DLMUPCC with the capacity development programs; Prepare Land Development Guidelines, as a Provincial Ordinances to implement the plans to be authorize; Pursue special urban strategies on: 1) Industrial and port zones with environmental measures; 2) Government-managed coastal tourism development; 3) New housing areas to be expanded; 4) Urban Arterial Road Network and 5) Water and sewerage systems for newly urbanized areas. 	<ul style="list-style-type: none"> Revise and refine the draft City Master Plan (drafted in 2002) and formulate the Kampot City Development Plan and Land Use Plan for the national approval; Strengthen the urban planning and management function of DLMUPCC with the capacity development programs; Implement special urban strategies on: 1) Flood mitigation system; 2) Traffic management in the inner city; 3) New construction of the Highway #3 By-pass and a Ring Road; 4) Development of an agro-market place; 5) Sewerage systems; and 6) Riverside landscape and urban amenities. 	<ul style="list-style-type: none"> Revise and refine the draft Kep City Master Plan (drafted in 2002) and formulate the Kep City Development Plan and Land Use Plan for the national approval; Strengthen urban center functions, encouraging commercial and trading activities; Organize a Clean, Green and Healthy Kep Committee at the provincial level for collective tourism development; Implement special strategies on: 1) tourism zone development with environmental conservation; 2) Sanitary utility systems. 	
	Environmental Management	<ul style="list-style-type: none"> Facilitate detailed surveys of natural resources and land use at provincial levels, then formulate a clear-cut Environmental Protection Area Map for each province, including a zoning system, based on the Law of Environmental Protection and Natural Resource Management; Formulate an Environmental Protection Strategy integrated with community-level measures for the Coastal Area, including "efficient land use", "law enforcement", and "sustainable tourism"; Purse an Ecological Corridor-Environmental Management, taking into account ecological systems with the biodiversity of forests (Koh Kong), mangroves (Koh Kong, Preah Sihanouk, Kampot), coral leaf habitat (Koh Kong, Preah Sihanouk) and agricultural land (Kampot); and Explore an adequate collaboration among relevant organizations, local people, donors and NGOs for effective law enforcement and implementation of environmental strategies. 				
	Capacity Development of DLMUPCC	<p>【Management Issue】</p> <ul style="list-style-type: none"> Training in Japan in short-term (Management on land Use & Urban Planning); and Management Training in med-term by the Training Center with the cooperation of Royal University of Agriculture. <p>【Technical Issue】</p> <ul style="list-style-type: none"> Technical & Management Training in med-term by the Training Center with the cooperation of Royal University of Agriculture & Institute of Technology in Cambodia; Short-Term Project for Urban Land Use Planning with the expert from Japan in Preah Sihanouk and Kampot Provinces; and Assignment of the long-term expert of land use planning & urban planning from Japan. 				

Source: JICA Study Team

Executive Summary

1. **Background:** Numbers of projects have been developed recently without substantial urban development plan and management in Coastal area of Cambodia, which is composed of the four (4) provinces; Preah Sihanouk, Koh Kong, Kep, and Kampot. Some negative aspects have also started to take shape in this region. In order to regulate and control such the uncontrolled developments in Coastal area, a thorough study for sustainable development needs to be carried out.

“The Study on National Integrated Strategy of Coastal area and Master Plan of Sihanouk-ville for Sustainable Development”, hereinafter called the Study, has been conducted since March 2009 to formulate “the national integrated strategy of Coastal area” and “master plan of Preah Sihanouk for sustainable development”, targeting at year of 2030.

This report focuses the National integrated Development Strategy of Coastal Area.

2. **Development Issues in the Present Condition:** Following the survey results, the major issues for each sector, which Coastal Area has held, are summarized as follows:

Socio Economic	<p>Population: Decreased (out flowed to the other regions): the annual population growth rate in Coastal area during the past decade was 1.3% against 1.6%, the national average.</p> <p>Industry: Primary: Low productivity and value of agricultural products, lack of channels for transportation, and decrease in aquatic products. Secondary: Lack of skilled labor and management staff, untransparent procedures for import/ export, high priced electric tariff, low labor’s productivity Tertiary: Lack of information on major tourist spots in Coastal Area except beaches in Preah Sihanouk, Lack of collaboration between hotel business and local economy</p> <p>Investment: Concentration of the investment to the area development and tourism development, whereas stagnation of investment on industry.</p>	Infrastructure	<p>Road: Delay in rehabilitation projects of main national roads, lack of maintenance activities, which leads to traffic accidents and congestion.</p> <p>Railway: Delay in the ongoing rehabilitation project, further improvement needs for achieving the stable railway transportation of goods.</p> <p>Port: Inconsistent development plans of new deep seaports that may degrade the potential and role of the Sihanoukville Port, the only deep seaport in Cambodia. Competition with Cai Mep Chi Bai port.</p> <p>Water Supply: Low connections with urban water supply system, deterioration of the existing main pipes, and lack of storage facilities.</p> <p>Sewage: Establishment of sewage system in urban areas in Coastal Area, whereas improvements in connections and expansion of service areas.</p> <p>Solid Waste: Low quality of collection and disposal services by operating private company, and needs for establishment of new landfill.</p>
Land Use	<p>Approvals of private investment projects without collaboration between land use management and investment management. (For instance, approvals of urban development projects in the protected area.)</p> <p>Concentration of investment projects, which are mainly large scaled development projects such as tourism development, urban development and SEZ development, in Coastal area during the past decade.</p>	Environmental Management	<p>Destruction of precious bio-diversity in Coastal area due to the illegal logging, fishing and hunting. Lack of commencement of Laws and regulations on protected area, EIA and so on.</p> <p>Lack of the management capacity of concerned officials, lack of numbers of staff and budget, and lack of the collaboration among the related agencies.</p>

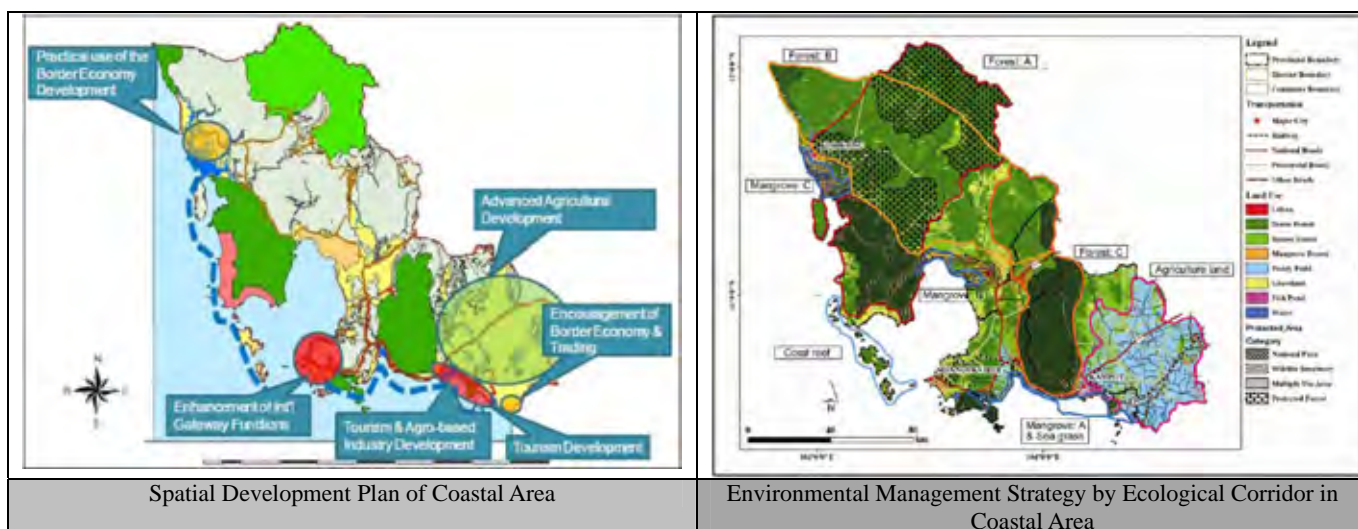
3. National Integrated Development Strategy in Coastal Area: Based on the above mentioned present development issues in Coastal area, the development goals was proposed as follows:



Population of Coastal area in 2030 is projected at 1,460thousand (822thousand for Kampot, 175thousand for Koh Kong, 64thousand for Kep, and 398thousand for Preah Sihanouk). For achieving this development vision, industrial promotion strategies, spatial development strategies, environmental management strategies, and infrastructure development strategies toward the target year of 2030 have been prepared, as follows.

<i>Industrial Promotion Strategies and sub plans</i>	<i>Key Actions to Take</i>
<div style="border: 1px solid black; padding: 5px;"> <p>Strategy 1: Formation of the International Logistic Center and Base of Export-oriented Industries</p> <p>Plan 1: Promoting foreign investment in SEZ to diversify export-oriented industries</p> <p>Plan 2: Promoting industries that could achieve division of labor with the industries in the neighboring countries</p> </div>	<div style="border: 1px solid black; padding: 5px;"> <p>Key Actions for Promoting Manufacturing Industries</p> <ul style="list-style-type: none"> - Promotion of Export and Related Industries (SEZ) - Promotion of Relocation of Labor Intensive Light Industries from Neighboring Countries - Promotion of Diversification of Garment Related Products </div>
<div style="border: 1px solid black; padding: 5px;"> <p>Strategy 2: Formation of the Regional Market and Promotion of Regional Agriculture/ Fishery</p> <p>Plan 3: Promoting investments that have linkages with local industries and resources</p> <p>Plan 4: Promoting production and supply of high value added vegetables and fruits</p> <p>Plan 5: Promoting aquaculture and fish processing</p> <p>Plan 5: Promoting One Village One Products (OVOP)</p> </div>	<div style="border: 1px solid black; padding: 5px;"> <p>Key Actions for Promoting Resource-based Industries</p> <ul style="list-style-type: none"> - Expansion of High Value Added Crops with Establishing Linkage between Producers and Purchasers - Promotion of Fishery by Expansion of Aquaculture - Promotion of Investment in Local Resource Based Food Processing Industries - OCOP Development </div>
<div style="border: 1px solid black; padding: 5px;"> <p>Strategy 3: Development of International Tourist Destination (Beach & Eco.)</p> <p>Plan 7: Promoting tourism development by linking up several touristic spots within Coastal area</p> </div>	<div style="border: 1px solid black; padding: 5px;"> <p>Key Actions for Promoting Tourism</p> <ul style="list-style-type: none"> - Promotion of regional tourism advertisement activities by establishment of Hotel Association in Coastal Area - Human Resource Development by providing Training System under the Hotel Association - Promotion of Community-based Eco-tourism </div>

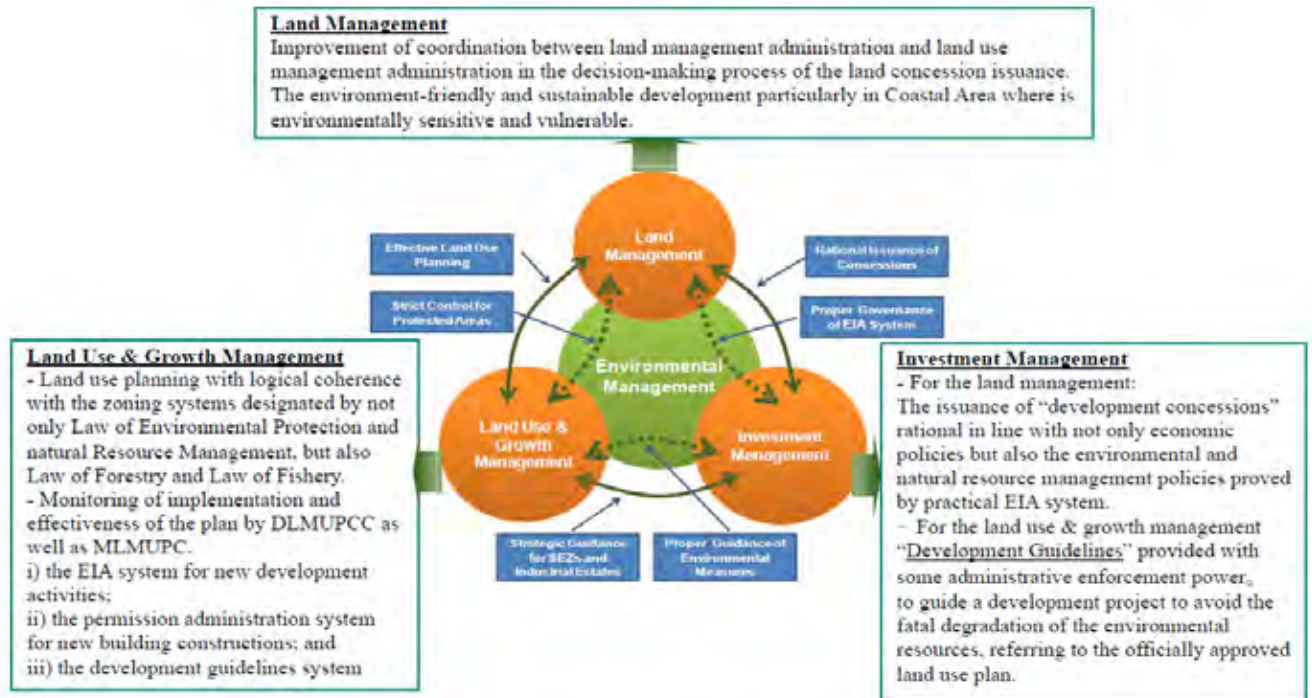
Industrial Promotion Strategies and sub-plans



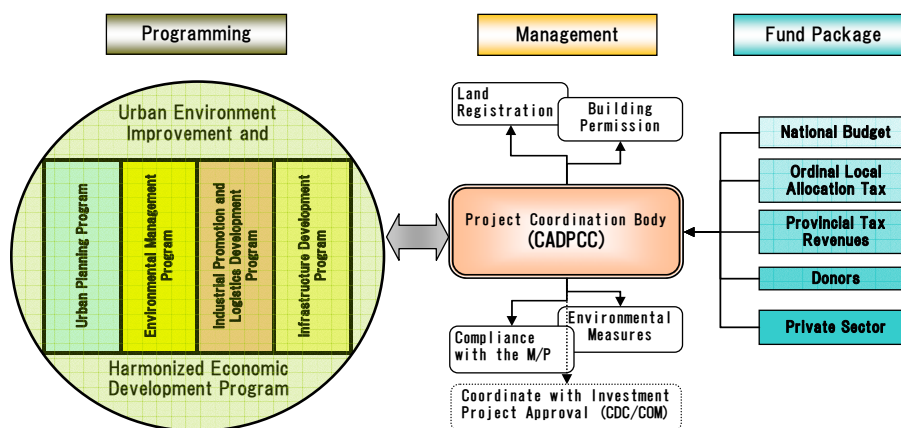
Spatial Development Plan of Coastal Area Environmental Management Strategy by Ecological Corridor in Coastal Area

Infrastructure Development Strategies in Coastal Area			
Road	<p>Kampot: Improvement of border facility, development of outer ring road</p> <p>Kep: Improvement of the coastal road between Vietnamese border and Kep city.</p> <p>Preah Sihanouk: Upgrade of industrial road and development of access roads from NR.4 to tourism spots and urban center.</p> <p>Koh Kong: Improvement of border facility and NR.48.</p>	Water Supply	<p>Urban W/S: Improvement and extension of the existing water supply system in three provincial cities except Kep city. The connection rate of the urban population shall reach 80% by the year 2030.</p> <p>Rural W/S: Implementation of hydro and geologic studies for the underground water development, and establishment of sustainable rural water supply development based on the study results.</p>
Rail way	Development of dry ports (ICD) and container terminal stations of railway, and establishment of credible and safety railway transportation network.	Sewage	<p>Preah Sihanouk: Improvement of connectivity and expansion of existing sewage system and expansion of storage capacity of waste water treatment facility.</p> <p>Kampot, Kep, and Koh Kong: Establishment of sewage collection system (the first priority shall be Kampot.)</p>
Port	Expansion of the Sihanoukville Port, which is the only deep seaport in the country, and establishment of port transportation which is integrated with the inland transportation system.	Solid Waste	Securing of new dumping sites, achievement of reduction of waste through the community based activities such as 3R activities, and establishment of demarcation between public and private for the sustainable solid waste management.

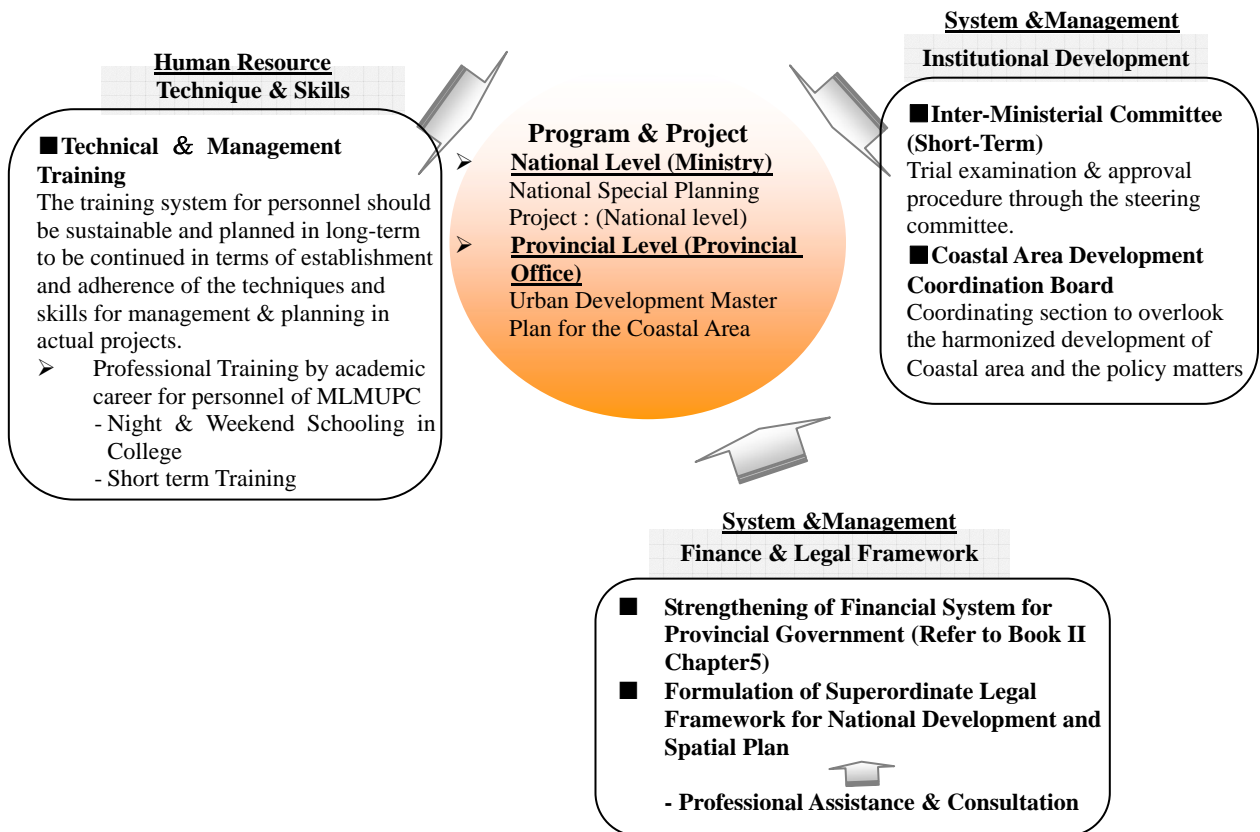
4. **Integrated Mechanism for Development Management:** Establishment of an integrated development management system is proposed. This is vital in order to implement the socioeconomic development as delineated in the Master Plan, keeping the environmental conditions sustainable. The proposed structure is conceptualized as shown below.



5. **Implementation Framework:** The proposed implementation framework of the Strategy contains the following three (3) components; i) Programming approach for priority projects, ii) Packaging of fund, and iii) establishment of a single coordination body (for Coastal area, so called "Coastal Area Development Program Coordination Committee (CADPCC)").



6. Capacity Development: For realization of National Integrated Development Strategy in Coastal Area and Master Plan of Preah Sihanouk, other than implementation of the framework for the Strategy stated above, the Capacity Development Plan to the staff of the Ministry of Land Management, Urban Development and Construction (MLMUPC) and the concerned provincial government for the preparation and implementation of urban planning master plans is indispensable, which is shown as follows:



The Study on National Integrated Strategy of Coastal Area and Master Plan of Sihanouk-ville for Sustainable Development

Final Report <Summary (Book I)>

Integrated Development Strategy for Coastal Area

Preface
Letter of Transmittal
Location Map
Flow Chart of Master Plan
Summary of Development Strategies and Management Issues
Executive Summary

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List of Abbreviations

ADB	Asian Development Bank
ASEAN	Association of South-East Asian Nations
BOT	Build-Operate-Transfer
CADPCC	Coastal Area Development Project Coordination Committee
CDC	Council for the Development of Cambodia
CNR	Cambodian National Railway
CR	Cambodia Riel
DLMUPCC	Department of Land Management, Urban Planning, Construction and Cadastre
EIA	Environmental Impact Assessment
FDI	Foreign Direct Investment
GIS	Geographic Information System
GMS	Greater Mekong Sub-region
GOJ	Government of Japan
GSP	Generalized Tariff Preferences
JICA	Japan International Cooperation Agency
LOI	Law on Investment
MAFF	Ministry of Agriculture, Forestry and Fisheries
MLMUPC	Ministry of Land Management, Urban Planning, and Construction
MOE	Ministry of Environment
MOI	Ministry of Interior
MPWT	Ministry of Public Works and Transportation
NGO	Non-governmental Organization
NIS	National Institute of Statistics
NSDP	National Strategic Development Plan
ODA	Official Development Assistance
PAS	Port Authority of Sihanoukville
PRRO	Provincial Rural Road Office
QIP	Qualified Investment Project
RGC	Royal Government of Cambodia
S/C	Steering Committee
SEZ	Special Economic Zone
SHM	Stakeholder Meeting
SWSA	Sihanoukville Water Supply Authority
UNDP	United Nations Development Programme
USD	US dollar

W/G

Working Group

WTO

World Trade Organization

1: INTRODUCTION

1.01 The importance of Coastal Area to the Cambodian economy lies primarily in the fact that it accommodates the nation's only deep seaport, Sihanoukville Port, which is expected to facilitate Cambodia with a modernized, efficient seaport as the gateway to the world for international trades. Another important factor is the areas encompassing Preah Sihanouk (formerly called Sihanoukville) and Phnom Penh, which were denoted as "the Growth Corridor of Cambodia", are the fastest growing regions of the nation powering the economic growth.

1.02 With active development in Coastal Area, some negative aspects have also started to take shape. In Preah Sihanouk city, various developers started numerous development projects, cutting down greenery on the hills and affecting environment. In order to regulate and control development projects in Coastal Area, a thorough study for sustainable development needs to be carried out. Also, urban areas susceptible to uncontrolled development need to have urban master plans in effect.

1.03 In 2008, the Royal Government of Cambodia (RGC) made an official request to the Government of Japan (GOJ) to carry out this study to counter the aforementioned issues, and GOJ decided to accept this request. Japan International Cooperation Agency (JICA) dispatched a preliminary study mission to Cambodia in 2008, and agreed upon the scope of work for this study in December 2008. A Team to carry out this study (JICA Study Team), consisting of experts in relevant fields, was dispatched by JICA to Cambodia in March 2009.

1.04 The Study on National Integrated Strategy of Coastal Area and Master Plan of Sihanouk-ville for Sustainable Development, hereinafter called the Study, has the following objectives;

- 1) to formulate the national integrated strategy of coastal area and master plan of Preah Sihanouk for sustainable development, targeting at year of 2030
- 2) to formulate capacity development plan for governments including the Ministry of Land Management, Urban Planning, and Construction (MLMUPC), and the provinces on regional development, through examination of the systems and institutions to enhance the effectiveness of the master plans of Preah Sihanouk and other cities in Cambodia

1.05 The study area covers Coastal area of Cambodia including the following four provinces: Preah Sihanouk, Koh Kong, Kampot and Kep (See the Location Map).

1.06 The executing agency of the Study was set as MLMUPC, together with the four provinces. And, accordingly the Steering Committee (S/C) was established under the chair of Secretary of State for MLMUPC.

1.07 JICA Study Team was dispatched by JICA to Cambodia in March 2009, and commenced the Study based on the schedule as agreed upon in the 1st S/C, held in Phnom Penh on 30th March, 2009. Progress Report was submitted in September 2009 and the contents were approved by the Cambodian side in the 2nd S/C. Interim report was submitted and the Integrated Strategy for Coastal area was firstly proposed in the 3rd S/C meeting held in November 2009. Subsequently, Draft Final Report was submitted in May 2010, and the contents were approved by the Cambodian side in the 4th S/C meeting.

1.08 This report is a part of Final Report that summarizes the Integrated Strategy for Coastal area, which has also been approved by the Cambodian side.

2: ISSUES IN THE PRESENT CONDITIONS OF COASTAL AREA: SOCIO ECONOMY

< Population >

2.01 The population census in 1998 and 2008 are summarized in Table S2.01. In 2008, the coastal area was inhabited by 960,487 people, of which about 81% were living in rural areas and 19% in urban areas. The population growth rate between 1998 and 2008 was 1.3%, which was lower than national average of 1.6%

Table S2.01 Population of Coastal Area: 1998 and 2008

	1998 Census			2008 Census			Annual Growth Rate (98-08)		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
Kampot	528,405	45,240	483,165	585,850	48,274	537,576	1.0%	0.7%	1.1%
Koh Kong	117,141	41,808	75,333	117,481	36,053	81,428	0.6%	-1.5%	0.8%
Kep	28,660	4,017	24,643	35,753	4,678	31,075	2.2%	1.5%	2.3%
Preah Sihanouk	170,655	66,723	103,932	221,396	89,846	131,550	2.6%	3.0%	2.4%
Coastal Area	844,861	157,788	687,073	960,480	178,851	781,629	1.3%	1.3%	1.3%
Cambodia Total	11,437,658	2,025,733	9,411,925	13,395,682	2,614,426	10,781,256	1.6%	2.6%	1.4%

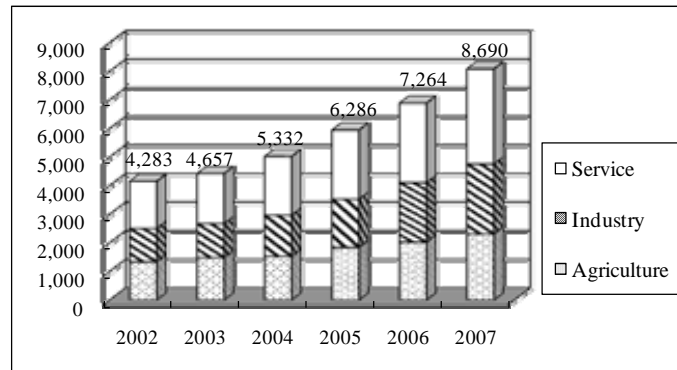
Source: NIS

2.02 Working population (=employed population) in Study area has increased rapidly from 323,159 in 1998 to about 475,432 in 2008 with annual average increase rate of 4.4%, which is considerably higher than the population increase rate (1.3% per annum) during the same period. The primary industrial sector plays a vital role in the Study area, which absorbed 75.3% of the working population in Study area. While the tertiary industrial sector absorbed 19.0% of working population, labors engaged in the secondary industrial sector accounted only 5.7% of total working population.

< Economy >

2.03 Cambodia's economy is one of the fastest-growing economies in the region. From 1997 to 2007, the growth rate averaged 9.5% per annum, underpinned by the growing garment, construction, and tourism sectors.

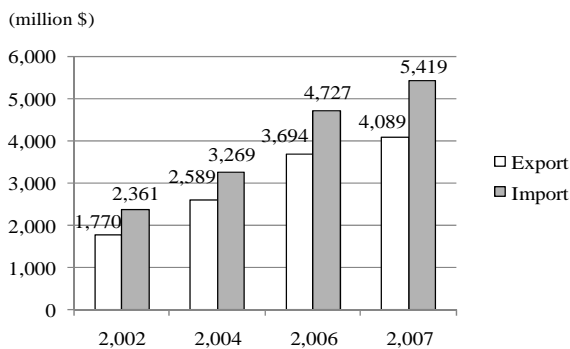
2.04 Cambodia's economy is mainly based on garment exports, services, and agriculture. The growth of GDP and the GDP growth rate of value added by industry are shown in Figure S2.01.



(in millions of US\$)
 Source: IMF Country Report 2009

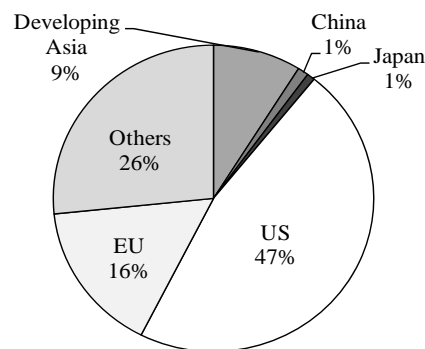
Figure S2.01 Growth of GDP by Industry

2.05 Trade: As shown in Figure S2.02, the trade volume (both imports and exports) has more than doubled from 2002 to 2007. The main driver of exports, as mentioned earlier, is garments and footwear, which make up 73% of total exports. The US and EU markets are the two main destinations for Cambodia's exports (Figure S2.03), mostly under the preferential treatment of the GSP and the MFN status.



Source: IMF Country Report 2009

Figure S2.02 Export/Import of Cambodia (in millions of USD)



Source: Asian Development Outlook 2009

Figure S2.03 Direction of Cambodia's Export 2008

2.06 Fiscal Condition: Government revenue rose to CR 5,290 billion in 2008, an increase of 32% from the previous year. Nevertheless, state revenue remains weak compared to the overall level of economic activities, reaching only 13% of GDP in 2008. As for fiscal expenditure, this stood at about CR 6,337 billion in 2008 with the overall budget deficit accounting for 2.1% of GDP in 2008. This deficit is mainly financed through foreign assistance.

<Industry>

2.07 Agriculture: Agriculture is definitely important factor for Cambodian Economy, as Agriculture in Cambodia employs 4.75 million workers out of the total labor force of 8 million, which is equivalent for 56% of total labor force, currently. However, the sector's contribution to GDP is remained one third only. The main issue that the agricultural sector in Cambodia has faced is the low productivity and value of agricultural crops. The improvement in productivity, consistency in quality,

and development of well-organized marketing channels are critical issues to be addressed for achieving sustainable economic development and increase in the household income of rural households in Coastal area.

2.08 Fisheries: Cambodia has abundant marine and freshwater fish resources (a variety of over 500 freshwater and 476 marine fish species). Approximately 4 million people (29% of population) are dependent on direct or indirect income from fish resources. The fishery sector accounts for more than 11% of GDP, with the official export value being USD 105 million (2.6% of the total export) in 2007.

2.09 Freshwater fisheries in Cambodia are well-known for their high productivity due to the presence of large flood plains around the Mekong River. Marine fishery production is small and mostly family run. Demand for marine products has been increasing rapidly with an annual growth rate of 10% to 15% from 2003 onwards, and statistics indicate an upward trend of fish catch, but there is concern about depletion of marine resources along the Coastal area because of intensive trawl fishing in the area.

2.10 Secondary (Manufacturing) Industry: Cambodia has a large pool of unskilled, cost-effective labor, with which the garment and footwear industries have achieved rapid growth since 1997. At peak, more than 300 garment factories were operating in Cambodia, employing 340,000 workers. However, due to the worldwide economic crisis since 2008, 70,000 workers in the garment sector have been laid off and another 100,000 jobs will remain under threat over the next two years.

2.11 Cambodian manufacturers in light industries, including garment and footwear, have to overcome the following disadvantages:

- A shortage of skilled middle management / skilled workers, resulting in a strong dependency on expatriate supervisors;
- High levels of official and unofficial transaction costs in import / export processes;
- High transportation costs;
- Higher electricity costs than neighboring countries; and
- Low labor productivity (the productivity in the garment sector is among the lowest of the competing countries).

2.12 Tourism: Cambodia is an attractive home to both heritage and natural tourism attractions. International arrivals have continued growing by 20% annually since 2001, reaching 2.1 million in 2008. The tourism sector is the second largest foreign currency earner for Cambodia after garments, with total receipts reaching USD 1.1 billion, generating 13% of GDP. While development of tourism creates ample employment opportunities, an impact of an increase in tourist arrivals on the Cambodian economy is limited. This is due to the fact that many of high-end hotels and restaurants tend to use materials imported from foreign countries, since the domestic materials tend to lack of reliability in supply and quality consistency.

2.13 The Department of Tourism has published a specific leaflet to introduce major tourist spots in the four provinces, although these leaflets are only distributed within respective provinces. However, still the information about these tourist spots and attractions is little known to international tourists. Apart from the beaches of Preah Sihanouk, very few initiatives have been initiated to attract and promote international tourism in the region. Thus, for the promotion of tourism, it is vital to

introduce innovative methods for dissemination of information about tourist attractions to potential tourists.

<Investment in Cambodia>

2.14 Current situation of private investment in Cambodia: “Mid-term Review 2008 on National Strategic Development Plan (NSDP) 2006-2010” projects the investment trend of Cambodian during 2006-2010 as shown in the following Table S2.02. Among the projected total private investment of USD 9,146.7 million in five years, the foreign financed private investment is projected to occupy 39.0% (USD 3,567.7 million). Of the total investment, which includes the public investment, 14.1% will go to the agriculture, fishery and forestry fields, 51.9% to industry and 34.0% to services.

Table S2.02 Projected Investment in Cambodia

	Million USD					
	2006	2007	2008	2009	2010	Total
Public Investment	417.3	520.9	639.4	681.2	674.0	2,932.8
- Domestic financed	59.3	64.9	155.5	177.5	197.7	654.9
- Foreign Financed	358.0	456.0	483.9	503.7	476.3	2,277.9
Private Investment (a)	1,227.4	1,759.7	1,822.7	2,028.5	2,308.4	9,146.7
- Domestic financed	752.4	892.7	1,140.7	1,310.5	1,482.7	5,579.0
- Foreign Financed (b)	475.0	867.0	682.0	718.0	825.7	3,567.7
- (b)/(a): %	(38.7)	(49.3)	(37.4)	(35.4)	(35.8)	(39.0)
Total Investment	1,644.7	2,280.6	2,462.1	2,709.7	2,982.4	12,079.5
- Total Domestic financed	811.7	957.6	1,296.2	1,488.0	1,680.4	6,233.9
- Total Foreign Financed	833.0	1,323.0	1,165.9	1,221.7	1,302.0	5,845.6

Source: MEF

Note: Estimated figures for 2008 and projected figures for 2009 and 2010

2.15 Implementation ratio of approved investments in Cambodia: There have been 1,537 approved Investment Projects and QIPs between 1994 and 2008. Among them, 1,139 projects are counted as “Former Active” or “Active” at the end of 2008. 74% of the approved projects are thought to have been implemented by the number of project or 71.6% by the approved fixed asset amount (USD 18,406 million out of the total approved investment of USD 25,711 million). “Active Project” is accounted to be 935 projects at the end of 2008, of which approved fixed asset is USD 17,476.4 million. In other words, 60.8% of the approved projects are still in operation in Cambodia by judging from the number of projects or 68.0% by the approved fixed asset amount.

2.16 Issues in private sector investments in Cambodia are summarized below:

- Private sector investment in Cambodia is heavily dependent on the performance of tourism sector and construction sub-sector. In the last 15 years, the 62% of the total approved investment went to tourism and construction sector, whereas, merely USD 4,287 million and USD 1,184 million of investments approved for the manufacturing and agriculture sector respectively.
- FDIs seem to be staggering in recent years, at least in terms of its percentage to the total private investment.
- Large scale investment tends to rely on FDIs and the Cambodian enterprisers still lack of enough capital to cover such larger scale projects only by themselves.

- “Active Projects” ratio may quickly decrease in near future because the recently approved projects include the large-scale projects in the field of area-wise development or tourism sector.

<Investment in Coastal Area>

2.17 Current situation of private investments in coastal area: In the last 15 years in four coastal provinces, total 117 projects have been approved as the Investment Projects or QIPs. The approved fixed assets of 117 projects account for 41.6 % share of the total amounts of approved projects in Cambodia. On contrary, 117 projects accounts for only 7.6% of the total number of the approved projects in Cambodia in the same period. The investment amounts of approved “Active” projects in the field of tourism and area development is 83.2% of the total “Active” investment projects in coastal area. Of the total 117 projects, only 20 projects are in the tourism and area-wise development and the average investment amount per project is approximately USD 416.7 million. On the other hand, 29 approved “Active” projects with a total investment of about USD 741.2 million are in manufacturing sector in the entire coastal area. The average investment per project in manufacturing sector is USD 25.6 million, which is quite low as compared to the average investment in tourism and area wise development projects. Thus, current private sector investment in coastal area is characterized with heavy dependency on the fields of tourism and area development.

2.18 Implementation ratio of approved investments in coastal area: Out of 117 projects, 11 projects are judged as “Former Active” and 72 projects are judged as “Active”. The implementation ratio of the approved project (“Former Active” plus “Active” projects) is 70.9% by the number of projects and 94% by the fixed asset amount.

2.19 Issues in private sector investments in Coastal area: The recently approved investment projects are large in their scale and as most of them have just just started the implementation, it is still uncertain or predict whether the project shall be able to keep its status “Active” or not. The uncertainty is mainly due to the following reasons:

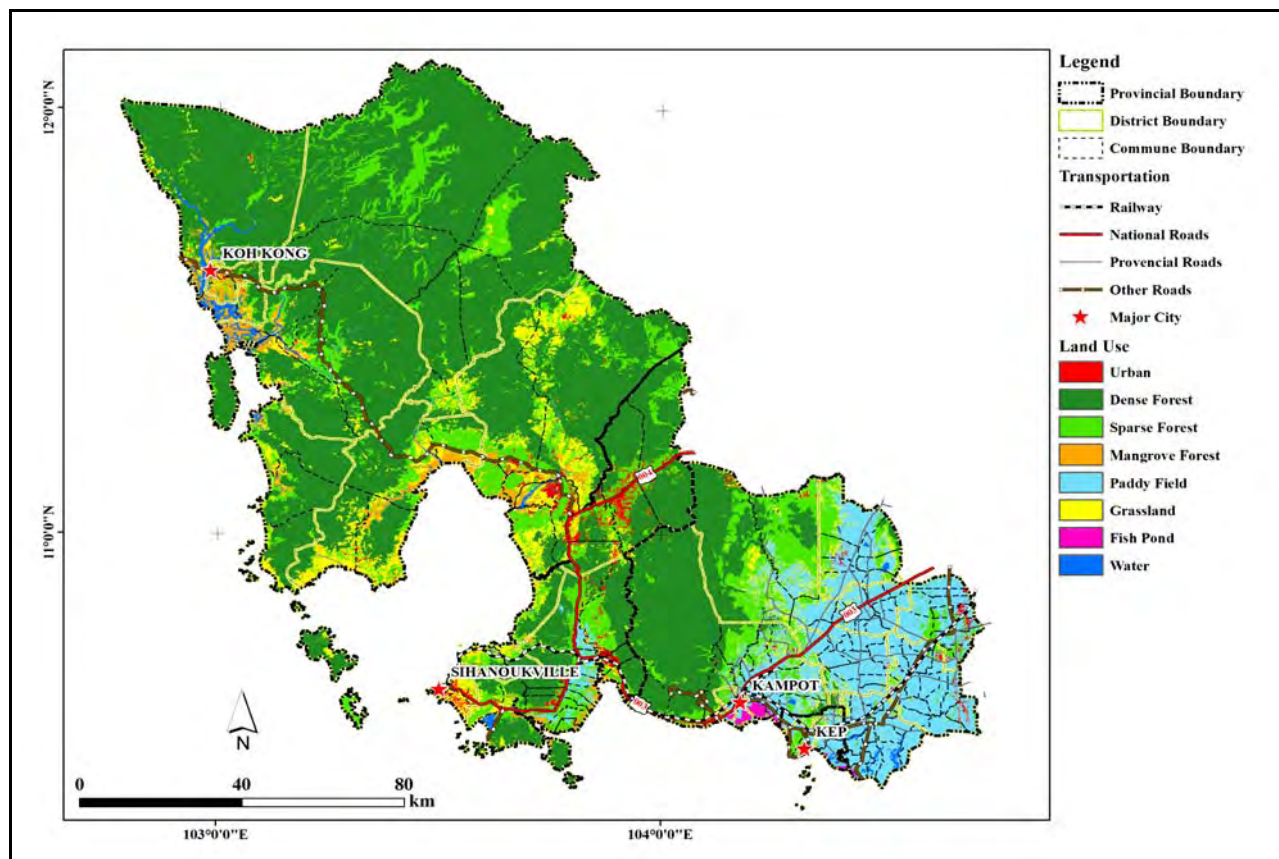
- Most of such large-scale investments projects are in the fields of tourism or area development. Although they require large amount of capital, the capital sources are uncertain or unknown in many projects.
- The projects in tourism or area development tend to be easily halted by various objection and protest from local residents mainly related to eviction.

2.20 While the investments of USD 8,333.2 million (average investment amount of USD 416.7 million per project) have been approved for the tourism and area development projects, the investments in the manufacturing fields have been limited in numbers and volume (total USD 741.2 million for 29 projects, average investment amount of USD 25.6 million). The SEZs in the area have so far failed to attract export-oriented industries and to bring in enough economic effect as expected. The reasons for this seem to be in vulnerability of legal framework, and lack of attraction in fiscal preferential treatment and institutional setting.

3: ISSUES IN THE PRESENT CONDITION OF COASTAL AREA: Land Use Analysis

<Present Land Use>

3.01 The land use analysis of Study area utilized ASTER VNIR satellite imagery with 15 m spatial resolution, covering the period from 2002 to 2009. The land use map was classified into eight categories: urban, dense forest, sparse forest, mangrove forest, paddy field, grassland, fish pond, and water, as shown in Figure S3.01.



Source: JICA Study Team

Figure S3.01 Land Use Map of the Study Area

3.02 To assess the land use of each province, the GIS layer of provincial boundary was obtained from MLMUPC. Table S3.01 provides the land area (in hectares & percentage) of the classified eight land uses in each province.

Table S3.01 Land Area (ha) of each Land Use Category in each Province

Land Use Class	Koh Kong		Preah Sihanouk		Kampot		Kep	
	Area (ha)	Area (%)	Area (ha)	Area (%)	Area (ha)	Area (%)	Area (ha)	Area (%)
Urban	10,916	1	15,176	6	10,380	2	712	4
Dense Forest	788,740	72	136,133	52	138,843	30	113	1
Sparse Forest	167,223	15	67,697	26	89,175	19	3,155	18
Mangrove Forest	33,386	3	7,372	3	759	0	252	1
Paddy Field	0	0	7,802	3	194,661	41	10,607	60
Grassland	78,943	7	22,569	9	27,334	6	1,520	9
Fish Pond	0	0	11	0	2,707	1	627	4
Water	21,110	2	3,941	2	5,551	1	592	3
Total	1,100,318	100	260,701	100	469,411	100	17,576	100

Source: JICA Study Team

3.03 The major findings from the land use analysis of Study area are summarized as follows:

- **Koh Kong Province:** About 90% of Koh Kong province is covered with forest, of which dense forest is a dominant forest cover, whereas, the urban land use represents only 1% of the total area of the province.
- **Preah Sihanouk Province:** The urban area covers about 15,000 ha or 6% of the total area of Preah Sihanouk province, and it is the highest value in all other provinces in Study area. On the other hand, the province is encompassed with precious natural resources and the total forest cover in the province is still high and represents 81% of the provincial land area.
- **Kampot Province:** The province is hosting most of the agricultural lands, especially paddy fields, and they represent 41% of the total area of Kampot province. The urban area covers only 2% of the provincial land area.
- **Kep Province:** The smallest province in Study area, about 17,580 ha., is mainly covered by paddy fields, which represent about 60% of the total area of Kep province. The urban area represents 4% of the provincial land area. The fish ponds along the coast cover about 630 ha or 4% of the provincial land area.

3.04 Major issues regarding the land use analysis are summarized as follows:

The total investment asset value of the approved active QIPs during the past 15 years in Coastal area is about USD10 million. However, 83% (or USD 8.33 million) of them are categorized into large scaled tourism development and/ or area development projects. Most of these projects were approved after the year 2004, and some have been even located in national park.

Also, SEZ development projects are concentrated in Coastal Area, because in this region, eleven (11) SEZ projects have been applied to CDC while the total number of approved SEZ development projects is twenty-one (21) in Cambodia. Although most of them are Non-Active, the cumulated planned developed area of these eleven SEZ projects are 4,900ha.

Most of the above development projects are concentrated in Preah Sihanouk. The forest coverage rate of Coastal area from 1997 to 2006 was consistent from 55% to 52%, whereas the forest coverage rate of Preah Sihanouk for the same period was decreased from 62% to 56%. Lack of the collaboration between land use management and investment management is one of the main factors on this.

4: ISSUES IN THE PRESENT CONDITONS OF COASTAL AREA: INFRASTRUCTURE

<Road>

4.01 A few rehabilitation projects have been implemented or planned, but the progress of the rehabilitation projects has been behind the schedule. Especially, the rehabilitation of a part of NR3, NR31 and NR33 has been delayed and the road surface remains deteriorated. The Table S4.01 gives the status and details of the planned rehabilitation projects in the study area that are either under-implementation, completed, or not initiated.

Table S4.01 Rehabilitation Projects for the Southern Coastal Corridor

No.	Route Description	Cost (USD million)	Financial Source	Status
1	NR. 48 (Koh Kong – NR. 4) : 151.3 km	21.69	Thailand Loan	Completed (in 2008)
2	NR. 48 (4 major bridges)	7.20	Thailand Grant	Completed (in 2008)
3	NR. 3 (Veal Renh – Trapang Ropao) : 32.5 km	6.5	World Bank	Completed (in 2004)
4	NR. 3 (Trapang Ropao – Kompot) : 32.0 km	21.3	Korean Loan	Completed (in 2007)
5	NR. 3 (Kompot – Phnom Penh) : 147.0 km	50.0	Korean Loan	Started (up to 2011)
6	NR. 31 (Kompong Trach – Junction of NR.3) : 55.0 km	N/A	Korean Loan	Started (up to 2011)
7	NR. 33 (Kompot – Kompong Trach) : 39.8 km	N/A	Korean Loan	Started (up to 2011)
8	NR. 33 (Kompong Trach – Prek Chak/Lork : 15.0 km, Structure Widening & Road Maintenance bet. Kompong Trach & Kompot : 34.0 km, and 2 Cross Border Facilities at Prek Chak/Lork & Koh Kong	18.0	Asian Development Bank	Not started

Source: JICA Study Team, Kingdom of Cambodia Ministry of Public Works and Transport and Overview on Transport Infrastructure Sectors in the Kingdom of Cambodia

4.02 Traffic accidents are a major cause of death, injury and disability in Cambodia. Occurrence of traffic accidents increased more than the increase in the number of vehicles. In Study area, 61% of all traffic accidents resulted in slight injuries in 2008, followed by serious injuries which respectively accounted for 30% and fatalities at 10% on average. About 35% of fatalities were due to a collision between motorcycle and 4-wheeler vehicle, and 19% in motorcycle-motorcycle collision. Based upon a simple traffic survey, conducted in June 2009 by the Study Team, motorcycles accounted for a largest share of traffic volume. Comparing with the result of the survey conducted in 2005, it is clear that the traffic volume increases; especially the number of motorcycles and light vehicles in Kampot has doubled over the last 4 years.

4.03 The main issue for road sector is the lack of maintenance. Due to the inadequate budget, insufficient technical staff and machinery, necessary maintenance activities have not been efficiently

conducted by the Department of Public Works and Transportation (DPWT), Provincial Rural Road Office (PRRO) and City/Provincial engineering offices.

<Railway>

4.04 There is no reliability in railway in Cambodia because of the frequent occurrence of derailment and the unpunctual operation. The railway was seldom on time. In addition, the lack of railway maintenance and the improvement of roads running in parallel to the railway track resulted in the decrease of freight share of railways.

4.05 The study on the rehabilitation of the railway in Cambodia was conducted under a technical assistance of ADB in 2006 and was implemented according to the loan agreement between RGC and ADB in March 2007. The target lines of rehabilitation were i) the Northern Line (340km), ii) the Southern Line (254km), and iii) the linking Destroyed Rail Link (48km). However, in order to achieve the stable and safety freight transportation, introduction of signaling system and level crossing, exchange of deteriorated rail, development of the railway freight terminal station are prerequisite, which are not included in the main component of this ADB project.

<Port>

4.06 There are seven (7) commercial ports in the study area. In 2008 total cargo throughput of these ports was estimated to be approximately 2,630 thousand tons, of which 61.0% was handled by Sihanoukville Port, 17.2% by Oil Terminals, 18.2% by Oknha Mong Port and 3.6 % by other ports. As per national economic growth, it is expected that total cargo throughput will increase steadily to 6,644 thousand tons by 2020.

4.07 Sihanoukville Port is the only international deep seaport in Cambodia. The container terminal has been developed with Japanese ODA loans, and multipurpose terminal is scheduled to be constructed. Considering the various matters related to ports in the study area such as natural condition, demand forecast and transportation infrastructure, Sihanoukville Port will continue to maintain and further strengthen its present role as the national gateway in future. However, there is a conceptual plan to develop few other deep sea ports namely Stueng Hav Port, Kampot SEZ Port and Kirisakor Koh Kong SEZ Port to support the SEZ activities. These ports have the potential to enhance the regional economy. However, prior to any conclusion and execution, the feasibility study including the investigation of natural condition, construction cost estimation, demand forecast and financial analysis is required.

<Logistics>

4.08 At present, most of the sea-born cargoes are transported through National Road No.4. The coal is transported to the cement factory located in Kampot through National Road No.3 and Railways. Border trade to Thailand and Vietnam is mainly carried out through National Road No.48 and No.33.

4.09 Railway rehabilitation project is currently under execution under a Public Private Partnership (PPP) scheme. Toll Company, under the concession scheme, plans to transport fuel from Oil Terminals as one of their main business, and plans to construct a container transshipping station close to Sihanoukville Port and a Dry Port (ICD) located in Phnom Penh, aiming to enhance the container cargo transportation by rail. In general, railway transportation will also be adequate for transporting the bulk cargoes such as coal and wood chip. One of the investors is interested in wood chip producing business and plans to transport wood chip from plantation to the port by railway.

4.10 The international competition for logistic services is very high and will further exaggerate with the completion of planned deep sea-ports particularly in Southern Vietnam, such as Cai Mep and Chi Vai Port. Considering the tough competition ahead, Cambodia will have to improve its logistics network and services. Implementation of effective sea-and-rail integrated cargo operation has to be seriously considered.

4.11 In cross border transport/logistics, there are institutional cross border barriers such as the absence of transit arrangement and the lack of mutual admittance of vehicles observed in Cambodia. Though the government of Cambodia signed the GMS CBTA in March 2007 which is a comprehensive multilateral instrument covering all relevant aspects of cross border transport facilitation, e.g. transport, customs, immigration and quarantine, the cross border facilities in the study area have not been improved.

<Water Supply>

4.12 Approximately 51% of households in Coastal area have access to safe water. Only 16% of households in the coastal zone provinces have access to toilet facilities. There is significant regional variation with the highest levels of access usually found in urban areas. In some remote communes and districts where water shortage is pronounced, access to safe water is less than 5% and sanitation facilities virtually do not exist.

Table S4.02 Comparison of Water and Sanitation at the District Level

Province/District	Access to safe water	Access to sanitation	Province/District	Access to safe water	Access to sanitation
Coastal Zone	51.2	16.6			
Kampot Province	45.7	9.8	Koh Kong Province	61.8	23.4
Angkor Chey	44.5	8.7	Botum Sakor	94.9	4.6
Banteay Meas	39.8	6.4	Kiri Sakor	92.8	2.3
Chhuk	42.9	5.6	Koh Kong	41.8	4.2
Chum Kiri	43.7	1.4	Smach Mean Chey U	69.3	52.0
Dang Tong	58.8	2.8	Mondol Seima	49.3	45.7
Kampong Trach	38.3	8.4	Srae Ambel	39.2	22.3
Kampot	39.7	10.1	Thma Bang	18.5	0.8
Kampong Bay U	90.5	62.0	Kampong Seila	88.4	11.2
Kep	52.1	12.0	Preah Sihanouk	62.5	36.7
Damnak Chang'aeur	43.2	8.8	Mittakpheap U	37.7	67.0
Keab U	68.7	17.9	Prey Nob	80.2	12.0
			Stueng Hav	91.0	21.5

U=urban: districts with Provincial headquarter towns are treated as urban

Source: Seila Program Commune Database, as published in the MOE State of the Coastal Environment Report 2007

4.13 Except Kep city, all the main cities of Coastal Area have water supply system. But water connection rate of the respective cities are 35% for Preah Sihanouk, 38.1% for Kampot, and 18.7% for Koh Kong.

<Wastewater Disposal>

4.15 MPWT is responsible for the drainage and wastewater treatment. Urban wastewater collection and treatment is absent in all urban centers except for Preah Sihanouk. Currently, wastewater is being discharged to open storm water drains, sometimes to septic tanks or pits, polluting freshwater sources and rivers that eventually discharge to the coastal marine environment. The

uncontrolled discharge of wastewater has a negative impact on beaches, tourism development, and fishing industry.

4.16 Recent water quality surveys (DANIDA Coastal Zone Project 2005) indicate that the water quality in the rivers flowing into the coastal waters as well as the coastal waters themselves still have an acceptable water quality, but there is also clear evidence that human activity is having an impact on it. The most heavily polluted rivers are located in the more densely populated Southeast part of Coastal area near Preah Sihanouk and Kampot. Significant sources of pollution include wastewater, agricultural fertilizers and livestock.

4.17 The wastewater collection system in Preah Sihanouk was constructed in 2004 with the financial assistance from ADB. However, the system covers only the densely populated commercial downtown core of the city and the tourist area around Ochheutal Beach. The Cambrew beer and beverage factory has its own treatment plant and is currently not connected to the collection system..

4.18 The collection system drains by gravity to a sewage lagoon located southwest of the city behind Ochheuteal beach. Provision has been made for future expansion of the collection system to nearby catchments areas but large parts of the city have not been included in the future development plan.

4.19 It has been estimated that only 1,500 connections have been made to the sewer system representing a very small portion of the total urban population living within the sewer system service area are benefited. As there is no monitoring system in place, it is difficult to assess the impact of this system on the water quality along the beaches.

<Solid Waste Management>

4.20 Generation: In Coastal area, waste is mainly generated in households and in businesses such as retail stores and food shops. About half of discharged waste is thought to be organic waste. At present as little quantity of industrial waste is generated, it is difficult to estimate the exact waste generation. However, considering the economic development, the industrial waste could increase rapidly many times in future. The following table shows the current amount of waste generated based on the data obtained through the interview in the provinces.

Table S4.03 Amount of Waste reported by each Province

Koh Kong	Kep	Kampot	Preah Sihanouk
17m ³ / day (Collected)	5 tons/ day (Collected)	80m ³ / day (Collected)	85 tons/ day (Generated) 73 tons/ day (collected)

Source: JICA study team (based on the interviews with each province)

4.21 Charge: A user fee is incurred to subscribers in all the four provinces. Contractors of garbage collection collect the fees directly from waste generators; residents and businesses. The fees are decided according to the agreement between the contractor and province. The fees are different and depend on the type of waste generators. In general, the commercial users pay more fee than residents do. In case of households, the fee is CR 4,000 to CR 8,000 / household/ month. There are also free users who do not pay any fee.

4.22 Discharge and Collection of Waste: Residents and businesses discharge waste into containers placed in front of their houses/ buildings. In Coastal area, all of the provinces have signed a contract with either private companies or individuals for the garbage collection service. The contractors collect

waste from containers, load it to dumping vehicle or compress car and transport it to the dumping sites. In principle, the contractors have to collect waste every day, but in actual they collect waste after every two or three days.

4.23 Disposal of waste: The contractors dump the collected waste at the dumping sites designated by the provinces. The transported waste is thrown into the dumping site without any precautionary measures or treatment or any provision of soil cover. Sometimes rainwater collects around the waste and stagnate the site. In general, it can be mentioned that the condition of dumping sites are unsanitary in Coastal area. Waste or Rag pickers are apparently live in and around some of the dumping sites and collect recyclables from the dumped waste. Three provinces respectively use a temporal dumping site which belongs either to the province or a private firm. Preah Sihanouk province does not use a temporal dumping site, but they strive to find a new landfill site. Two provinces, Kampot and Preah Sihanouk have proposed the new sites for waste dumping.

4.24 Recycling: Recycling in Coastal area is done by private sector without any involvement of the public sector. In general, recyclable waste is picked up either at source or during collection & dumping or after dumping. Waste pickers or junk buyers collect recyclables at source, collection workers pick up recyclables from discharged waste at the time of collection, and waste pickers pick up recyclables from dumped waste at dumping sites. Later, these collected recyclables are sold to junk shops that sell them to dealers mostly in Vietnam. Waste treatment by means of composting has not been observed in the Coastal area.

5: ISSUES IN THE PRESENT CONDITIONS OF COASTAL AREA: ENVIRONMENT

5.01 The environment in Coastal area mainly comprises of forests, rivers, mangrove forests, agricultural lands, sea grass areas, coral reefs and sea. The combination of various natural elements keeps rich biodiversity intact and provides ecosystem services in the form of food, water, energy, climate regulation, waste decomposition, purification of water, disease control and recreational experiences. While people in Coastal area, particularly the poor, make a living mainly with fishery and subsistent agriculture, negative impacts caused by human activities such as illegal logging, poaching, fishing, reforestation and uncontrolled industrial developments have degraded the ecosystem in Coastal area. The ecosystem in Coastal area is fragile, and if once it is destructed, restoration would probably be impossible.

5.02 Biodiversity in Coastal area is still high. Inland forests contains rich flora and fauna, which provides habitat to threatened species in the world such as Asian elephant, Indochinese tiger and Pileated gibbon. Combination of mangrove forests, sea grass beds and coral reefs also nurtures rich marine organisms with several species of dolphins, Hawksbill turtle and Fluted giant clam.

5.03 However, the biodiversity is declining. The decline of biodiversity is attributable to logging and hunting for local consumption, commercial trade and medicinal use of natural resources. Other causes for habitat degradation and non-sustainable development are rapid and uncontrolled population growth, haphazard development, poverty, lack of sustainable agriculture methods, and lack of conservation awareness.

5.04 The lack of adequate land use plan weakens the land use control. Investment licenses are given sometimes in protected areas, causing uncontrolled development activities that make significant negative impacts on natural resources. Forest clearances and habitat losses are often seen even in the protected areas. A part of Botom Sakor national park that has important ecological function in Coastal area was excluded with royal decree after the application for QIP in 2008 for a large-scale development. Logging and burning of the forests including mangrove forests are proceeding in the part.

5.05 Legislation on natural environment is weak particularly in law enforcement. Relevant legislation such as Protected Areas Law, sub-decree on EIA, Law on Investment (LoI) and Law on Concession do not seem to be enforced properly and stringently. The low capacity in form of low number of trained officials, budget constraint, and lack of coordination among organizations further weakens the law enforcement process. EIA has not been implemented at the provincial level mainly due to the existing low capacity in provinces. Furthermore, sometimes the legal framework is misinterpreted, or intentionally distorted. As the result, developments have been permitted in critical protected areas. Another issue regarding legislation is that some legislation is incomplete. For example, boundary and zoning of protected areas are determined by sub-decree, but it has not been issued. This causes possible debate over the expected core zone. Detail EIA process is not been explained in Sub-decree on EIA. Though recently in September 2009, MOE has published an EIA guideline but there is a need for a detailed EIA. The preparation of EIA manual will be first step in this process.

6: INTEGRATED DEVELOPMENT STRATEGIES FOR COASTAL AREA

<Visions for Coastal Development>

6.01 The results of field studies mentioned in the previous sections together with the outputs of public consultation were reviewed and summarized as following SWOT (Strength, Weakness, Opportunity, and Threat) analysis matrix.

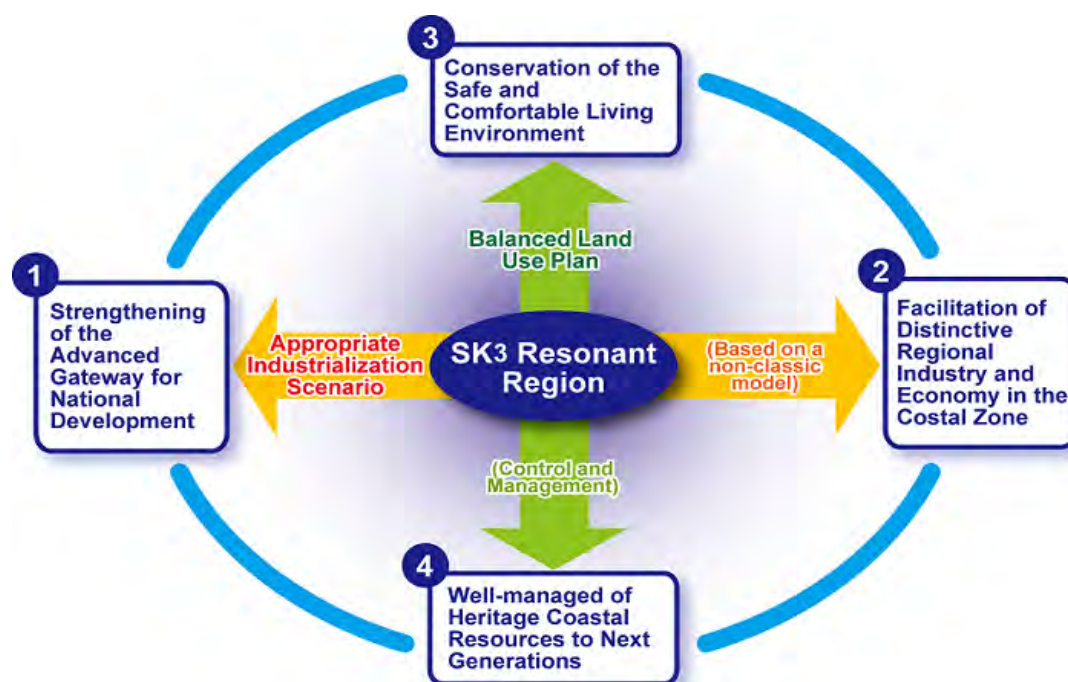
<i>Strength</i>	<i>Weakness</i>
<ul style="list-style-type: none"> - Rapid economic growth and fiscal improvement - GSP and MFN status of the WTO regime to US, EU and other developed country - Unique development resources, such as beautiful oceanic tourism spots, aquaculture, and forest products - Concentration of the private investment - Land management development project done by DANIDA/DFID/NZAids - Only the deep sea port in the country 	<ul style="list-style-type: none"> - Monotonous economy depending on garment sector - Informal trading and immatured taxation system leads weak state revenue - Improper Use of agricultural chemical that leads high risk and low value crops - Few initiative to promote tourism attractions over the Coastal area for foreign tourists - Many of the investment projects in Coastal area are unactive or unapproved - Weak institutions including issues with corruption and unobservance of land use plan - Quality and quantity of road infrastructure - Very weak in health, primary education and higher education, and technological readiness - Underperformance of using tariff concessions under ASEAN
<i>Opportunity</i>	<i>Threat</i>
<ul style="list-style-type: none"> - World economy's recovery from the global financial crisis - Relatively abundant youth working age population - Significant demand for organic products - High potential and attention on development of the Southern Economic Corridor in GMS - Growing people's awareness for environmental conservation - Port, Airport, and Railway rehabilitation projects are on-going or pledged. 	<ul style="list-style-type: none"> - Vulnerable for the external economy as the country highly depending on exporting garment - Living many urban poors those who limits the development opportunities and may lead to relocation problems - Concentration of tourism, commercial and industrial development investment projects may lead to the environmental destruction - Goods are increasingly distributed to/ from Cai Mep Chea Bui Port through Phnom Penh port - Congestion and traffic accidents due to the heavy and light traffic mix and increase in traffic volume

Source: JICA Study Team

Figure S6.01 SWOT Analysis

6.02 Based on the analysis of opportunities and constraints of Coastal area, which were mentioned in the above SWOT analysis, and viewing the importance of Coastal area for the entire Cambodian national economic development in the long-term future, an underlying principle for the development is to form a “**Resonance Region**” for the four provinces. It means that one positive initiative in one province shall resonant and reflect to all four provinces; Koh Kong, Preah Sihanouk, Kampot and Kep (**SK³** provinces).

6.03 Under this planning principle, four (4) visions are proposed to be pursued as the orientations of development as follow. A relational structure among these four (4) visions is conceptually illustrated below.



Source: JICA Study Team

Figure S6.02

Visions and Orientations of Development for Coastal Area

- **Vision 1: Strengthening of the Advanced National Gateway for National and Regional Development:** Coastal area shall be an advanced national gateway that will encourage international exports and imports, thereby leading to the accelerated and sustainable economic development of Cambodia.
- **Vision 2: Facilitation of Distinctive Regional Industry and Economy in Coastal Area:** Unique economic and industrial activities, using locally available resources such as agricultural, forestry and marine products, shall be integrated to enhance the economic competitiveness.
- **Vision 3: Conservation of the Safe and Comfortable Living Environment:** All those who live in Coastal area must enjoy their safe and comfortable lives, and the social environment to assure and enhance this condition must be formed.
- **Vision 4: Well-management of Beauty and Heritage of Coastal Resources for Next Generations:** Valuable natural, environmental and historical/cultural resources shall be managed properly in such a way that social costs shall not be transferred to the next generations.

<Socio-economic Framework>

6.04 Population: Population projection up to the target year 2030 for Coastal area has been conducted by JICA Study Team. The projection followed the long term population projection done by National Institute of Statistics (NIS) in 2004, as this is only long term projection officially approved by RGC. The NIS 2004 population projection has employed a somewhat high TFR, and also overestimated the number of migrants in Coastal area. Thereby, the Team has carried out a revision on the NIS 2004 projection. This revised population projections, which are shown in Tables S6. 01-02, has been adopted for the strategic plan of this Study.

**Table S6.01 Population Growth Rate revised for the New Administrative Boundary:
the Team's Scenario**

	2008 – 10	2011 – 2015	2016 – 2020	2021 – 2025	2026 – 2030
Kampot	1.2%	1.5%	1.7%	1.7%	1.5%
Koh Kong	0.8%	1.6%	2.1%	2.1%	2.0%
Kep	2.5%	2.9%	2.7%	2.6%	2.5%
Preah Sihanouk	2.7%	3.0%	2.7%	2.6%	2.5%
Coastal Area	1.6%	1.9%	2.1%	2.0%	1.8%

Source: JICA Study Team

**Table S6.02 Population Projection revised for the New Administrative Boundary:
the Team's Scenario**

	2008*	2010	2015	2020	2025	2030
Kampot	585,850	599,990	646,360	704,930	765,040	822,140
Koh Kong	117,481	119,250	129,100	143,240	158,930	175,470
Kep	35,753	37,560	43,330	49,500	56,280	63,680
Preah Sihanouk	221,396	233,740	270,970	309,580	351,970	398,220
Coastal Area	960,487	990,540	1,089,760	1,207,250	1,332,220	1,459,510

Source: JICA Study Team

6.05 **Employment:** Labor force participation rate in the Study area has significantly increased during the past decade. Such increase in labor force participation rate is expected in urban areas of the 4 provinces and the rural areas of Preah Sihanouk and Koh Kong, which are still suffering from the low labor force participation rate and high unemployment rate.

Table S6.03 Forecasted Labor Force Participation Rate to Working Age Population

	1998 (actual)		2008 (actual)		2020 (forecasted)		2030 (forecasted)	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Kampot	61.51%	79.29%	74.12%	82.08%	74.00%	82.00%	74.00%	82.00%
Koh Kong	65.94%	56.61%	62.25%	74.12%	65.00%	76.00%	72.00%	80.00%
Kep	81.61%	-*	75.25%	83.14%	75.00%	83.00%	75.00%	83.00%
Preah Sihanouk	62.94%	-*	61.30%	71.87%	65.00%	75.00%	70.00%	80.00%

* Note: Whole areas of Preah Sihanouk province (former Sihanoukville) and Kep province were classified as urban in 1998

Source: JICA Study Team

6.06 The percentage distribution of the labor force in Cambodia has changed along with the *Petty=Clark's rule* (labor force reallocation from agricultural to non-agricultural activities). Sector wise labor force proportion of the Study area was estimated using the same trend as 2000 -2007. In addition to these base growth rates, additional growth rates were applied taking development potential of each province in to consideration. Forecasted sector-wise labor force proportion rate is as follows;

Table S6.04 Forecasted Sector-wise Labor Force Proportion

	2008 (actual)				2030 (forecasted)			
	Koh Kong	Kampot	Kep	Preah Sihanouk	Koh Kong	Kampot	Kep	Preah Sihanouk
Primary Industry	63.6%	86.1%	78.9%	47.1%	42.3%	64.3%	48.9%	19.8%
Secondary Industry	6.9%	2.7%	4.5%	14.9%	20.2%	12.7%	19.4%	35.9%
Tertiary Industry	29.5%	11.2%	16.6%	38.0%	37.4%	23.0%	31.8%	44.2%

Source: JICA Study Team

6.07 Based on the working age population projection, labor force participation rate and proportion of labor force by industrial sector in the Coastal area were forecasted by the Study Team and are shown in Table S6.05. According to the Team’s calculation, the total labor force of Coastal area will reach about 759 thousand in the target year of 2030.

Table S6.05 Labor Force Forecast

	2008 (actual)					2030 (forecasted)				
	Koh Kong	Kampot	Kep	Preah Sihanouk	Total	Koh Kong	Kampot	Kep	Preah Sihanouk	Total
Primary Industry	34,100	266,000	14,800	48,200	363,100	38,300	282,000	16,600	38,800	375,700
Secondary Industry	3,700	8,300	800	15,200	28,100	18,300	55,700	6,600	70,300	150,900
Tertiary Industry	15,800	34,700	3,100	38,900	92,500	33,900	100,800	10,800	86,600	232,100
Total	53,600	309,000	18,700	102,300	483,700	90,500	438,500	34,000	195,700	758,700

Note: Above figures were rounded nearest 100

Source JICA Study Team

<Industry Promotion Strategy>

6.08 Based on visions recommended in the foregoing section as well as the major issues in industrial sector in Coastal area, following three (3) industrial promotion strategies were developed. Figure S6.03 illustrates the relation between the issues in industrial sector in Coastal area, Visions, and the three industrial promotion strategies:

Strategy 1: Formulation of an “**International Logistic Center and Base of Export-oriented Industries**”

Strategy 2: Promotion of “**Regional Agriculture and Fishery**” and Formation of the “**Regional Market**” at Provincial Cities

Strategy 3: Development of an “**International Tourist Destination**”

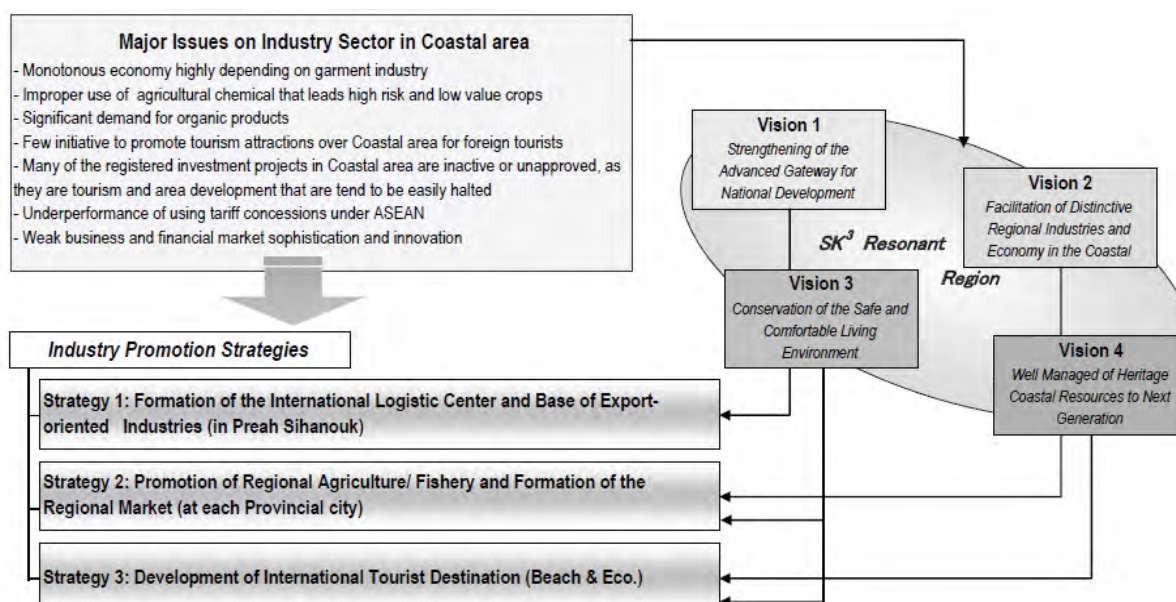


Figure S6.03 Relation among Issues on Industry Sector, Visions of Coastal Development and Industry Promotion Strategies

6.09 The JICA Study Team also proposed the industrial promotion sub-plans under the three (3) industrial promotion strategies to materialize each strategy. In total seven (7) industrial promotion sub-plans are proposed in this section. The seven sub-plan along with proposed key actions against each strategy are shown in the Figure S.6.04 as follows.

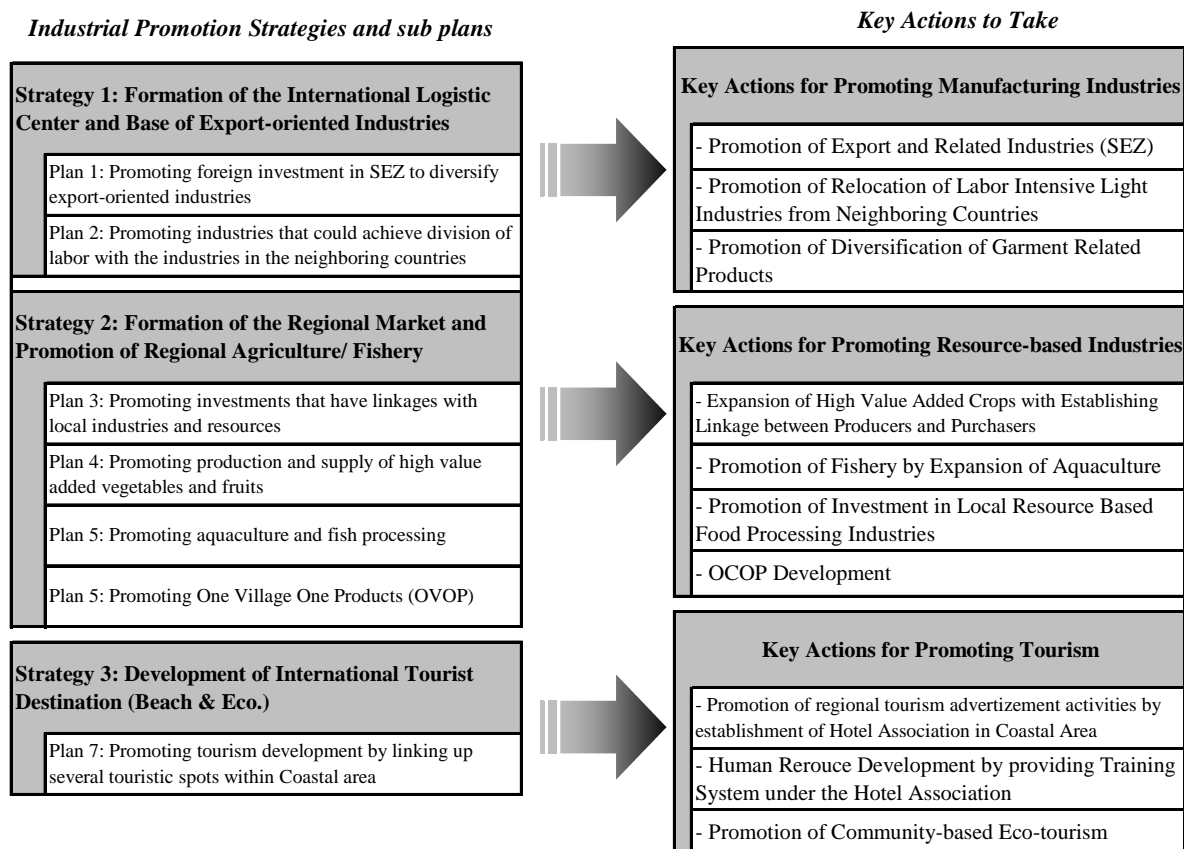


Figure S6.04 Relation between Major Strategies, Sub Plans and Key Actions to Take

<Spatial Development Strategy>

6.10 Coastal area has a direct connection with the two neighboring countries, Thailand and Vietnam. Considering the location advantage, the border areas are expected to benefit in the following ways:

- Tourism is promising, but it is noted that its direct impacts on the local economy will be minimal, unless foods and employees are provided by the local.
- Introduction of new technologies and collaboration of human resource are expected to benefit the development of the local economy.
- Manufacturing industries' locations are expected to increase in border areas under an ASEAN supply-chain network.
- The development of a potential hydro power station in Koh Kong should be considered.

- Vietnam is accelerating the tourism development of Phu Quok island which is near Kep and Kampot. Develop and strengthen a network to make an attractive international tourist area.

6.11 There exist three (3) Major Growth Centers in Coastal area to facilitate the regional development:

- **Preah Sihanouk National Growth Center** is the unique international gateway for trades at the Sihanoukville Port and its hinterland with potential for non-traditional export industries;
- **Koh Kong Sub-center** will become a new focal area for industrial locations as well as eco-tourism, with potential in marine and forest resources, linking with the Thai economy; and
- **Kampot-Kep Sub-center** has an additional capacity to become a trading center in border area, with potential in agriculture and tourism, connecting with the Vietnam economy.

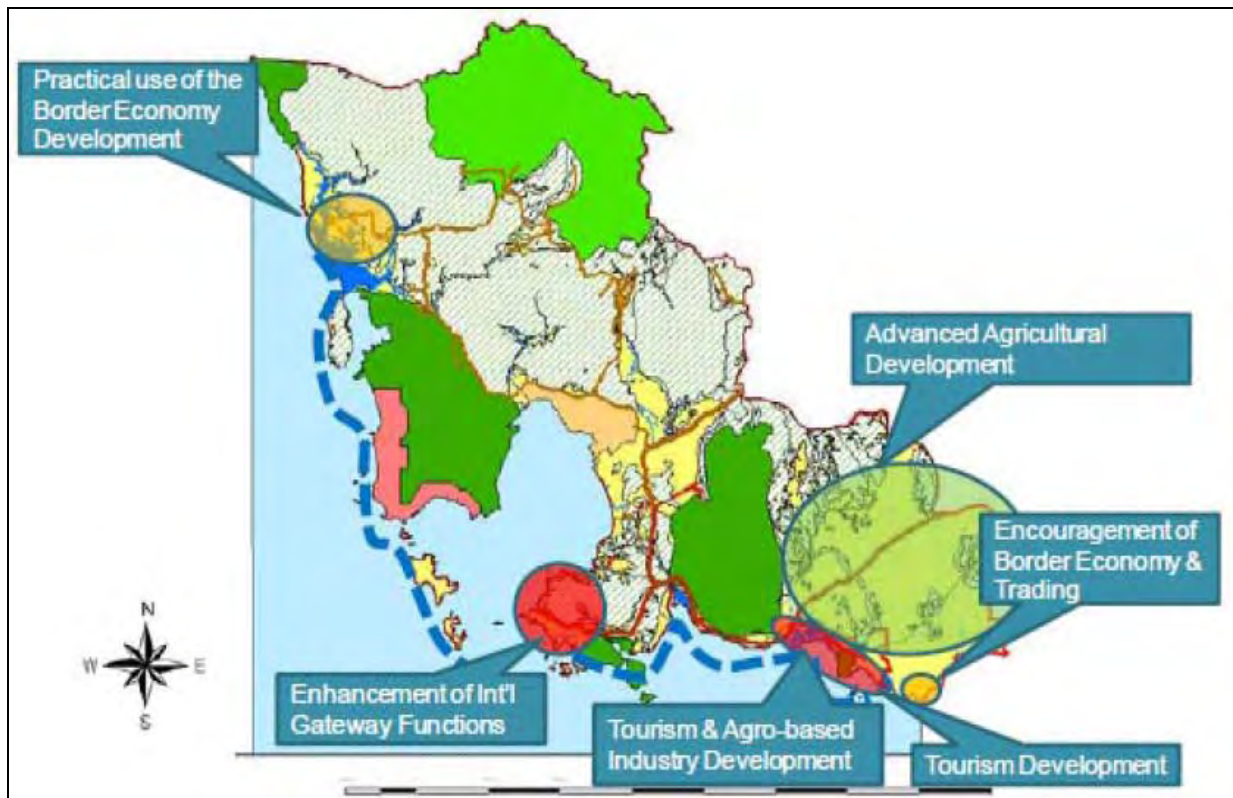
6.12 Two (2) development corridors should be strengthened as the backbone of Coastal area:

- **Preah Sihanouk-Phnom Penh Growth Corridor** (National Highways No. 3 and No.4) is one of the most important national lifelines of Cambodia, connecting the Capital City and Preah Sihanouk with efficient and smooth distribution of goods and safe journeys trips to tourist and businesses.
- **Coastal Integration Corridor** (National Highways Nos. 48. No.4. No.3. No.33 and No.117) shall integrate various economic potentials dispersed in Coastal area. From the Sihanoukville Port, if it takes less than 3 hours drive to/from the eastern/western borders, then this corridor shall be able to integrate all economic potential opportunities. As this corridor journey can be accomplished within a one-day travel time, it will be able to develop an efficient economic sphere.

6.13 The spatial structure to ensure the development of the proposed spatial structure should be formed with a strategic scenario as follows:

- **Stage 1:** Development of the Preah Sihanouk-Phnom Penh Growth Corridor, strengthening the gateway function at the Sihanoukville Port, and encouraging the local industries as well as proactive inducement of foreign investments on the manufacturing sector.
- **Stage 2:** Development of the Coastal Integration Corridor, strengthening the industrial functions at Koh Kong and Kampot - Kep Sub-Centers in relation facilitate trades to the neighboring economies.
- **Stage 3:** Integration of the two growth corridors linking with the international or Asian market and neighboring countries' markets.

6.14 Following the abovementioned discussions, a proposed spatial plan is shown in Figure S6.05.



Source: JICA Study Team

Figure S6.05 Proposed Spatial Plan for Coastal Area

<Living Environmental and Consideration for the Urban Poor>

6.15 Although, living environment in Coastal area should be safe and comfortable as mentioned in Vision 3, urban poor is still a persistent issue in Coastal area. To solve this, three issues are conceived:

- **On-site Improvement** is applicable at urban poor areas where the government does not have any resettlement plans. Establishing community based organizations and constructing networks among community based organizations, government, and NGOs are the key to succeed in the on-site living environment improvement.
- **Resettlement and Compensation** is applicable to urban poor areas where the government has resettlement plans and resettlement is inevitable. In such a case, all viable project options should be explored so that the resettlement be minimized, to where unavoidable.
- **Controlling the Expansion of Urban Poor Area** is applied to urban poor areas where influx of migrants from rural areas and other provinces is expected. In this regard, preparation of a land use plan is the first step to achieve this. In parallel, the number of in-migrant should be reduced through income generation activities in the rural areas with accelerated rural development.

6.16 The relationship between types of lands and these three development issues are illustrated in Figure S6.06.

Table S6.06 Outline of Development Issues and Approaches

Issue 1: On-site Improvement of Urban Poor Area
Approach 1-1 Establishment of Community Based Organization
Approach 1-2 Encouraging Support by Government
Approach 1-3 Encouraging Support by NGO
Issue 2: Resettlement and Compensation
Approach 2-1 Ensuring Accountability
Approach 2-2 Encouraging Community Participation
Approach 2-3 Setting Objective Criteria of Compensation
Issue 3: Controlling Expansion of Urban Poor Area
Approach 3-1 Preparing Land Use Plan
Approach 3-2 Enforcing Land Use Control
Approach 3-3 Promoting Rural Development

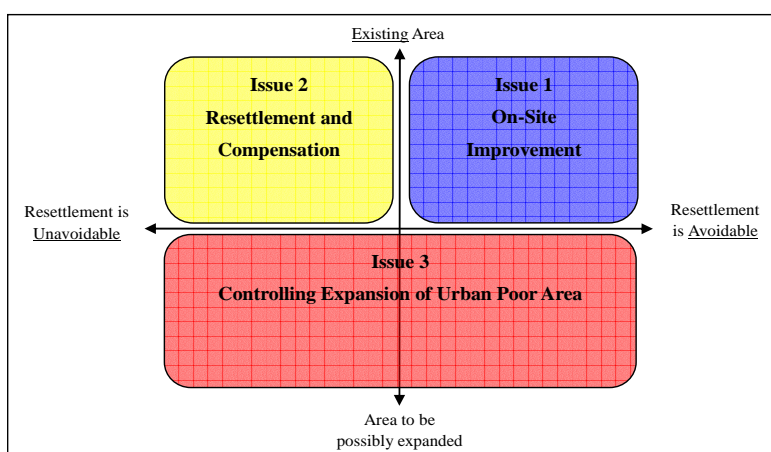


Figure S6.06 Relationship between Land Types and Development Issues

<Infrastructure Development Strategy>

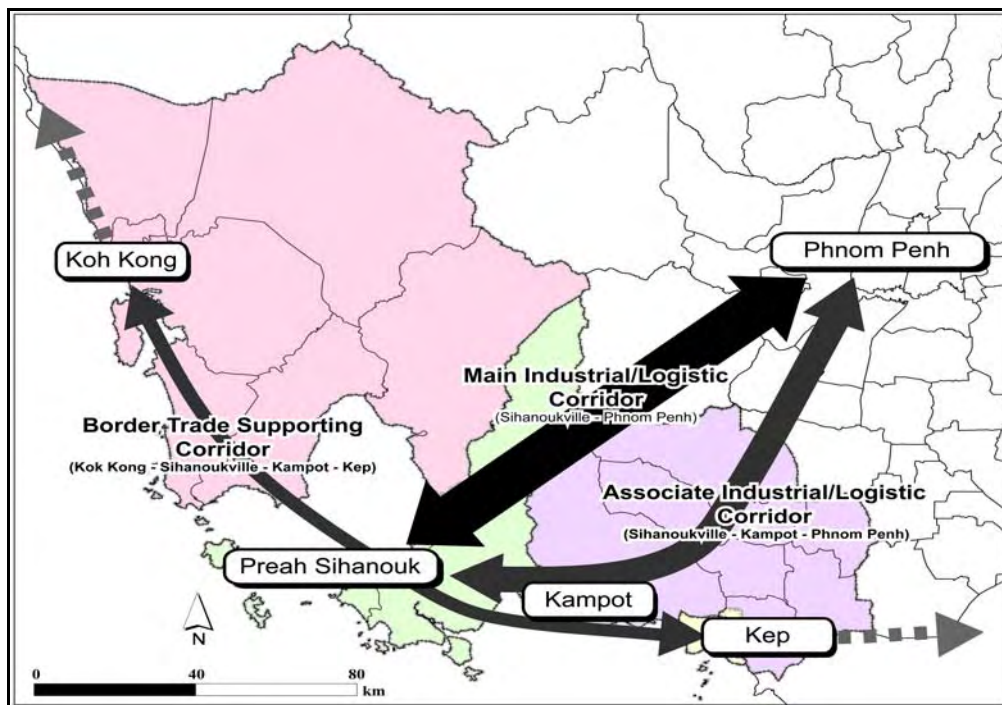
(1) Transportation Infrastructure Development Strategy

6.17 In consideration of the cargo throughput, its origin and destination and the industrial activities, the axis for logistic movements in Study area will be composed of following three industrial/logistic corridors as shown in Figure S6.08. Based on these corridors, Well-arranged “Complex Transportation System” consists of the port, the road and the railway will be required to realize the efficient logistics system.

6.18 **Preah Sihanouk – Phnom Penh Growth Corridor** (Preah Sihanouk - Phnom Penh): Currently, only National Road No.4 has a function of Main Industrial/Logistic Corridor. To cope with the increasing traffic demand, expanding width of the existing road or constructing a new road will be required. Plural transportation routes in addition to National Road No.4 are essential from the viewpoint of keeping the function of national logistic intact especially during the natural disasters.

6.19 **Associate Industrial/Logistic Corridor** (Preah Sihanouk - Kampot - Phnom Penh): The railway, connecting Sihanoukville Port and Phnom Penh via Kampot, is being rehabilitated with an ADB loan, and after its completion, it is expected to function as a environmental-friendly and effective alternative means of freight transportation. In general, transportation cost to/from the port is quite high and is a heavy burden for shippers/consignees. Railway transportation will be effective and best choice in order to reduce the land transportation costs and time.

6.20 **Coastal Integration Corridor (Koh Kong - Preah Sihanouk - Kampot - Kep):** Coastal area of Cambodia will be host for the cross-border transport between Thailand and Vietnam. In order to develop the border trade, improvement in road connection and enhancement of custom facilities will be required.



Source: JICA Study Team

Figure S6.07 Image of Logistic Axis in the Study Area

6.21 **Road:** The strategies and action plans to improve and establish the road network and related infrastructures as mentioned by province are as follows:

1) *Koh Kong*

Strategy: Improvement of the road surface condition on NR48 and the cross border facility at the border of Thailand.

Action Plan: The improvement of the cross border facilities should be implemented based on the recommendations made by the study as conducted by Asian Development Bank (ADB). Though NR48 was rehabilitated in 2007 by the support of Thailand, the road surface condition considerably deteriorated due to the DBST pavement design. It is thus suggested to have a periodical road maintenance by DPWT, PRRO and City/Provincial engineering and provision of pavement design considering asphalt concrete to improve the road surface condition.

Note: Though the rehabilitation/maintenance of NR48 has been implemented but considering the maintenance ability of DPWT, PRRO and City/Provincial engineering, it has been estimated that it took much more time than expected to accomplish it. In such cases, an use of asphalt concrete is a suitable choice for the rehabilitation of the pavement.

2) *Preah Sihanouk*

Strategy: Provision of both of an industrial road and a tourism road and improvement of NR4 and NR3.

Action Plan: To prevent traffic accidents due to the congestion and provide efficient road services on NR4, the route from the Preah Sihanouk port via the Stung Hav port to NR4 should be considered as an industrial road while rest of NR4 should be maintained as a tourism road. In addition, widening of NR4 and the development of the access roads to the center of Preah Sihanouk are required considering the large volume of traffic in future. Moreover, envisaging the high volume of traffic demand in 2030 and beyond, an alternative route should also be considered.

Note: Though the road connecting Preah Sihanouk and Stung Hav exists but there is not enough capacity to meet the demand especially of heavy vehicles. To provide the industrial road in northern area of Preah Sihanouk, a new access road capable to meet the requirement of heavy vehicles to Stung Hav is needed to develop. At present, there is only one access road to the center of Preah Sihanouk and beach resorts. Considering the current requirements, the growth in tourism and the opening of Preah Sihanouk airport, a few number of access route from NR4 or airport to City Centre will be required to meet the growing demand.

3) *Kampot*

Strategy: Improvement of the cross border facilities at the Vietnam border and provision of the access road to Kampot port as well as to junction of Kampot city where three major roads/routes i.e. NR3 (from Phnom Penh to Kampot), NR3 (from Preah Sihanouk to Kampot) and NR33 (from Kep to Kampot) meet each other..

Action Plan: The improvement of the cross border facilities should be implemented based on the recommendations made by the study as conducted by Asian Development Bank (ADB). Considering the inflow of heavy vehicles in Kampot Port, the pavement of the existing access road should be upgraded. In addition, the ring road should be developed in order to prevent the passing of heavy vehicles through the center of the city.

Note: The development of the access road to Kampot port and the ring road should be done in accordance with the Kampot city development master plan.

4) *Kep*

Strategy: Development of a coastal road from the border of Vietnam to Kep.

Action Plan: With the development of the tourist resorts in Cambodia and Vietnam, a number of tourists inflow increased from across the border, Vietnam to Kampot and Kep area. In the present condition, tourists have to make a detour passing through Kampong Trach and it is not possible to come directly to Kampot and Kep. Thus, to facilitate the convenient passage with considerable reduction in travel time for the tourist to visit Kampot and Kep, a straight line connection between the Vietnamese border and Kep is suggested.

Note: The coastal road from the border of Vietnam to Kep is required, which will also have a major influence in the development of mangroves, agriculture and fishery.

6.22 Railway: The strategies and action plans to improve and establish the railway infrastructures are mentioned as follows:

1) *Development of ICD and railway freight terminal*

Strategy: Development of ICD and railway freight terminal as a series of the associate industrial/logistic corridor (Preah Sihanouk - Kampot - Phnom Penh)

Action Plan: The development plan of the ICD and the railway freight terminal should be prepared through a discussion with Toll company. At the same time, the operation in the railway freight terminal of Sihanoukville Port should be discussed with Toll company and PAS. On the other hand, in order to establish and operate the ICD efficiently, it is required to consider the functions and facilities of an ICD.

Note: It is important and a must requirement to consider and assess the level and type of facilities provided by the Cambodian government and their expectation from the private organizations.

2) *Acquisition of safety and reliability*

Strategy: Establishment of the railway system with safety and reliability based on the concept of the associate industrial/logistic corridor (Preah Sihanouk - Kampot - Phnom Penh)

Action Plan: In order to acquire safety, reliability and sustainable railway system, it is needed that a series of logistic corridor from Sihanoukville Port to Phnom Penh should be established. As a first step, the rehabilitation project of the railway should be completed following the latest schedule. However, the development and operation of the ICD/the railway freight terminal need to be discussed with Toll Company.

Note: Need is to include not only Sihanoukville port but also Sihanoukville port SEZ in a series of the system. As the result, the efficient transport system will be provided which will connect and establish the link between the production and consumption area.

6.23 Ports: Sihanoukville Port is the only international deep seaport and plays a role of national gateway. Multipurpose terminal within the port area is scheduled for construction with a Japanese ODA loan, and furthermore, PAS intends to expand the container terminal to cater the growing future container cargo demand. Taking advantage of natural condition (the depth of channel, area of turning basin), Port SEZ (under construction by Japanese ODA loan) and integrated port-related business, Sihanoukville Port will continue to maintain and further strengthen its important role of the national gateway and logistics center. There are other ports i.e. Stung Hav Port, Kampot SEZ Port and Kirisakor Koh Kong SEZ Port, which are planned as deep seaport.

6.24 In order to strengthen the competitiveness of Sihanoukville Port from the logistics view point, the introduction of an effective logistics network connecting the Preah Sihanouk sea lane transport and Cambodian inland transport between Preah Sihanouk and the capital area, Phnom Penh will further strengthen its competitiveness. Possibility of seamless connection of the railway cargo transport on the Southern Line of CNR with the Sihanoukville Port operation has to be considered. This all will facilitate in establishing an effective ICD on the fringe of Phnom Penh, effective transport on CNR Southern Line and smooth and seamless connection to the Sihanoukville Port.

6.25 Table S6.07 shows the category (role) of ports in the study area. These categories are based on the analysis of current port conditions, future development plans, contribution to regional economy, situation of port related industry, and cargo flow.

Table S6.07 Category (Role) of Ports in the Study Area

Name of Port	Category (Role)	Present Condition	Future Plan
Sihanoukville Port (including Oil Terminals)	National Main Port	Existing	Multipurpose Terminal Expansion of Container Terminal
Oknha Mong Port	Ancillary Port	Existing	
Kampot Port	Regional Port for Import	Existing	Additional Berth (under Construction)
Tomnop Rolok Port		Existing	None
Sre Ambel Port		Existing	None
Stueng Hav Port	Commercial Port to Support SEZ Activities	Existing	SEZ Area (under Construction)
Kampot SEZ Port	Commercial Port to Support SEZ Activities		
Kirisakor Koh Kong SEZ Port	Commercial Port to Support SEZ Activities Industrial Port		

Source: JICA Study Team

(2) Water Supply System Development Strategy

6.26 Urban Water Supply: Water supply systems have been established in all provincial capitals with the exception of Kep where construction is in progress. Existing systems must be renewed and expanded to keep pace with population growth. The most pressing needs for improvement of urban water supply in order of priority are:

- Hydrological studies and monitoring to confirm the safe yield of available surface water resources;
- Hydro-geological studies to confirm groundwater potential for urban water supply;
- Regulations and structural measures to protect water supply sources from urban development;
- Replacement of old water mains to reduce leakage, improve water quality and provide more capacity for increased demands;
- Extension of the distribution network to serve more people and improve revenue;
- Construction of storage facilities to improve performance of the water distribution network; and
- Continued strengthening of O&M capacity for efficient management, leakage detection and correction, repair and replacement of water mains.

6.27 Rural Water Supply : The RGC should continue their efforts to improve water supply and sanitation conditions throughout Coastal area. Development of water supply in most rural areas has a positive effect on health. Most rural water supply schemes are dependant on groundwater sources however there is a lack of supporting information on groundwater potential and quality. Hydro-geological studies are required throughout Coastal area to support the development of rural water supply.

(3) Sewage System Development Strategy

6.28 Pollution from untreated wastewater will quickly become a problem that could adversely affect public health, tourism potential and fisheries.

6.29 The most pressing needs for Preah Sihanouk in order of priority are:

- Mandatory connection of all households, hotels and commercial establishments in the existing sewer service area;
- Implementation of an interceptor sewer serving Ochheutal beach;
- Continued strengthening of institutional capacity for implementing sewer connections including the legislation of sewer by-laws;
- Extension of the existing sewer system as originally planned to protect Sokha beach;
- Separate wastewater disposal system to serve Victory and Hawaii beach area; and
- Water quality monitoring (including fecal coli form) along the beaches to assess impact of wastewater discharges.

6.30 The priority for establishing wastewater collection and treatment systems in the other three (3) coastal cities are based on population size, impacts on water quality and impacts on tourism. Development should proceed in the following order of priority:

- **Kampot:** because it has the largest population and largest pollutant load, and there are plans to expand the water supply network.
- **Kep:** to protect its beaches and marine environment because wastewater generation and pollutant loads will increase significantly when the new water supply system is implemented.
- **Koh Kong:** put in last place because water quality is still relatively good and the population is relatively small. Its position in the rankings could change if it becomes an important tourism destination.

(4) Solid Waste Management (SWM) Development Strategy

6.31 Stepwise Establishment of SWM: With the limitation of financial resources, SWM would be established stepwise from urban area to rural area. This is because of the following reasons.

- Sanitary conditions in urban areas are generally more serious than rural areas. This is mainly due to economic development because of high density of population and building
- To establish SWM in urban area is easier than it in rural area because garbage collection services in urban areas have been widely provided, though not quite sufficiently.

- Accordingly, infrastructures as sanitary landfills would be established in urban areas prior to rural areas.

6.32 Introduction of 3R-based SWM: Establishment of sanitary landfills is urgent and it is essential to promote waste reduction in order to use landfill site as long as possible, since it is not easy to find land for sanitary landfill one after another. Based on the 3R (Reduce, Reuse and Recycle) concept the national government should introduce and implement the activities related to waste reduction. Considering the high content of organic waste in solid waste and potential demand of compost, one of the activities can be of solid waste composting.

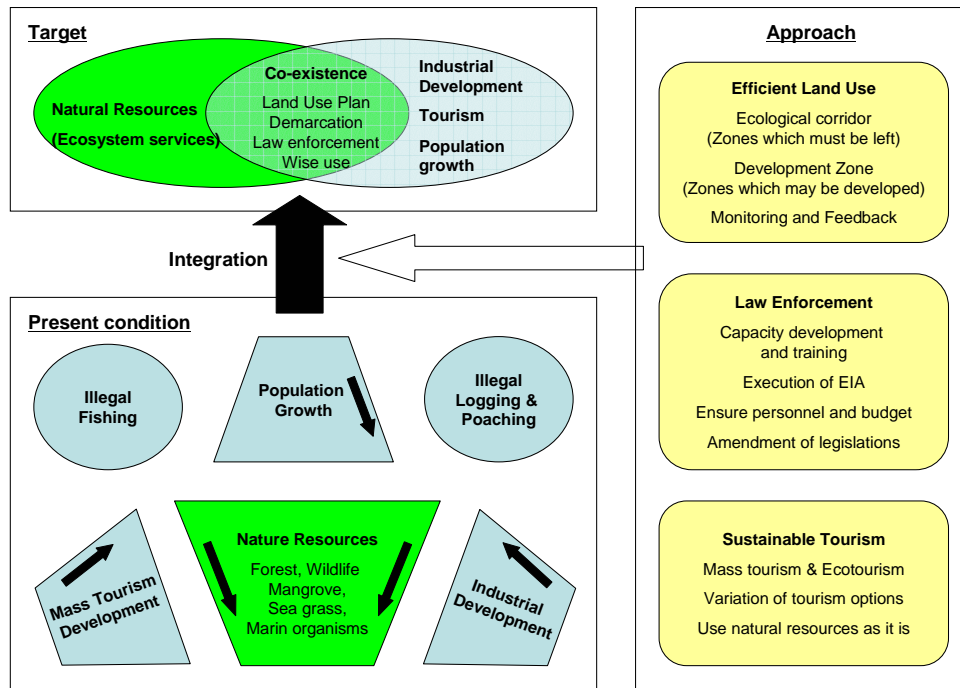
6.33 Introduction of Community-based SWM: Community-based SWM should be introduced and disseminated in order to improve the status of garbage collection fee and to encourage the communities to implement self-sustaining activities. Such kind of activities are in practice in a village of Preah Sihanouk Province. The community implements primary collection service by its self and succeeds in raising collection fee for the garbage collection service and improving sanitary conditions in the community. The model has a further scope and can be further developed by combining it with waste reduction programs, including home-made compost.

6.34 Main Required Infrastructures of SWM: Considering the above description, the following infrastructure facilities related to SWM should be taken up for construction:

- Sanitary landfill, including operational equipments
- Composting plant, including operational equipments
- Additionally equipments will be required to establish comprehensively SWM, including the garbage collection vehicle, collection container, cart for Primary collection and equipments for home-made compost.

<Environmental Protection Strategy>

6.35 Several measures must be taken to achieve the environmental protection, as the national coastal environmental protection strategy, including “efficient land use”, “law enforcement”, and “sustainable tourism”. The outline of the strategy is described in the following figure.

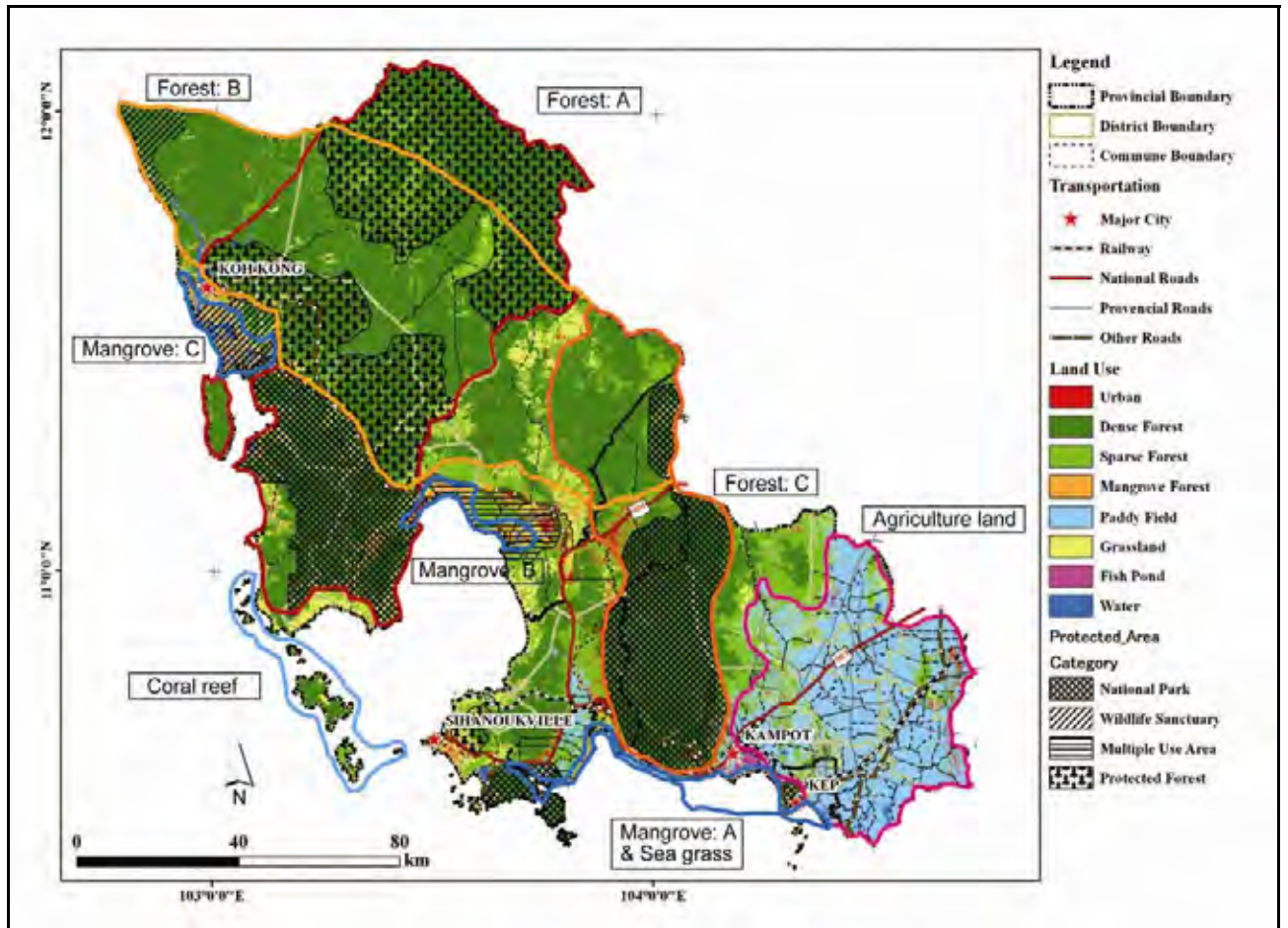


Source: JICA Study Team

Figure S6.08 Concept of Environmental Protection Strategy

6.36 To achieve the environmental protection target, grass root measures will be necessary. So far several donors and NGOs have implemented environmental education and livelihood improvement projects in some villages and communes. These activities as a part of environmental protection strategy must be continued along with an introduction of commune level interaction and measures to produce synergy effects.

6.37 Proposal of Ecological Corridors: A set of Ecological Corridor Area for conservation which is composed of i) Forest A, ii) Forest B, iii) Forest C, iv) Mangrove A and Sea Grass, v) Mangrove B, vi) Mangrove C, vii) Coral Reef, and viii) Agriculture Land, has been proposed and are discussed below. The components and locations are shown in Figure S6.09.



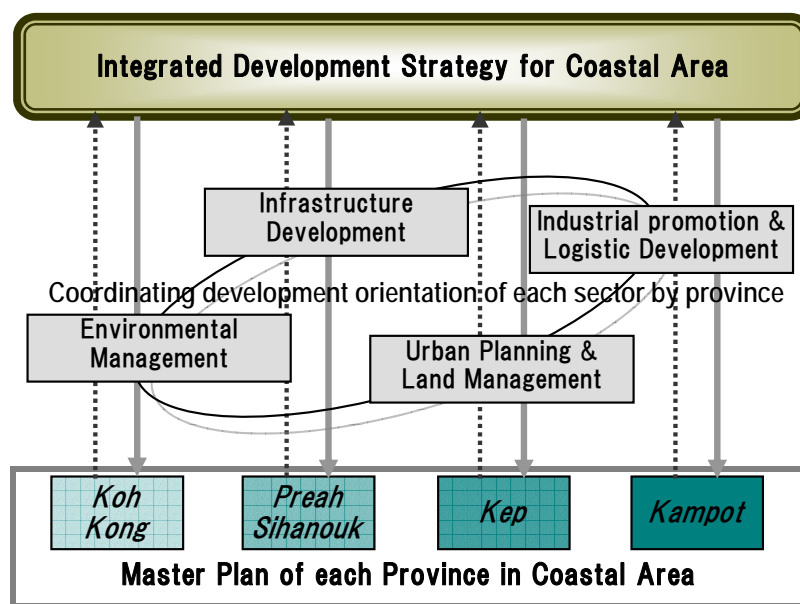
Source: JICA Study Team

Figure S6.09 Components of Ecological Corridor Area

7: IMPLEMENTATION FRAMEWORK

<Management Mechanism of Provincial Master Plans under the Strategy for Coastal Area>

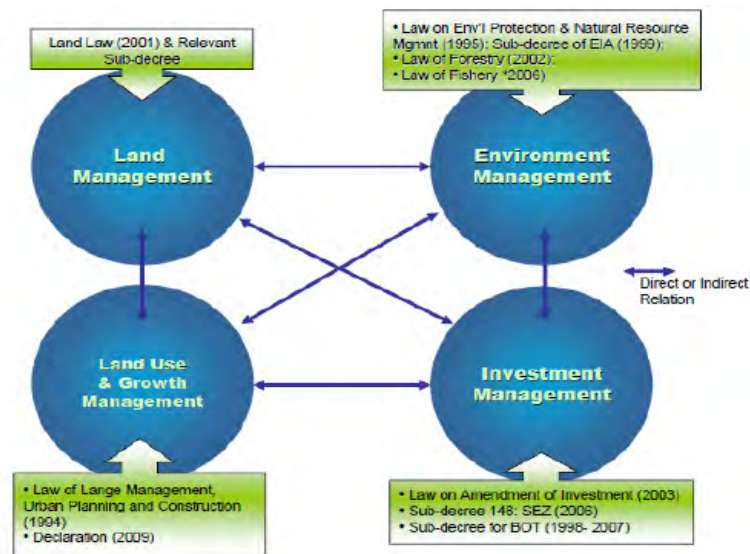
7.01 The Integrated Development Strategy for Coastal area plays an important role as development orientation for the Master Plan (M/P) of each province in Coastal area. Therefore, the Strategy coordinates the future development programs as well as the implementation management mechanism for those programs proposed in the each M/P in order to achieve the consistent and harmonized development over Coastal area, as SK³ Resonant Region. Furthermore, the Strategy shall contain inter-provincial development projects, which will be implemented under the strong initiative of project coordination body in Coastal area. Therefore, in the broad sense, the Strategy for Coastal area encompasses the M/Ps of four provinces. This interrelationship among the Development Strategy and the M/Ps is shown as following Figure.



Source: JICA Study Team

FigureS7.01 Interrelationship among Development Strategy for Coastal Area and the Master Plan of each Coastal Province

7.02 Four Management Issues for Implementation of the Master Plan: The Master Plan shall be implemented in practice under a well-organized and well-functioning management mechanism, which comprises of four (4) areas of institutional systems such as: i) Investment Management, ii) Land Management; iii) Land Use and Growth Management; and iv) Environmental Management. These four areas are institutionally supported by respective legal frameworks, which publicly guarantee the enforcement in order to achieve the preset objectives. These should also be directly or indirectly coherent with each other as illustrated on Figure S7.02.

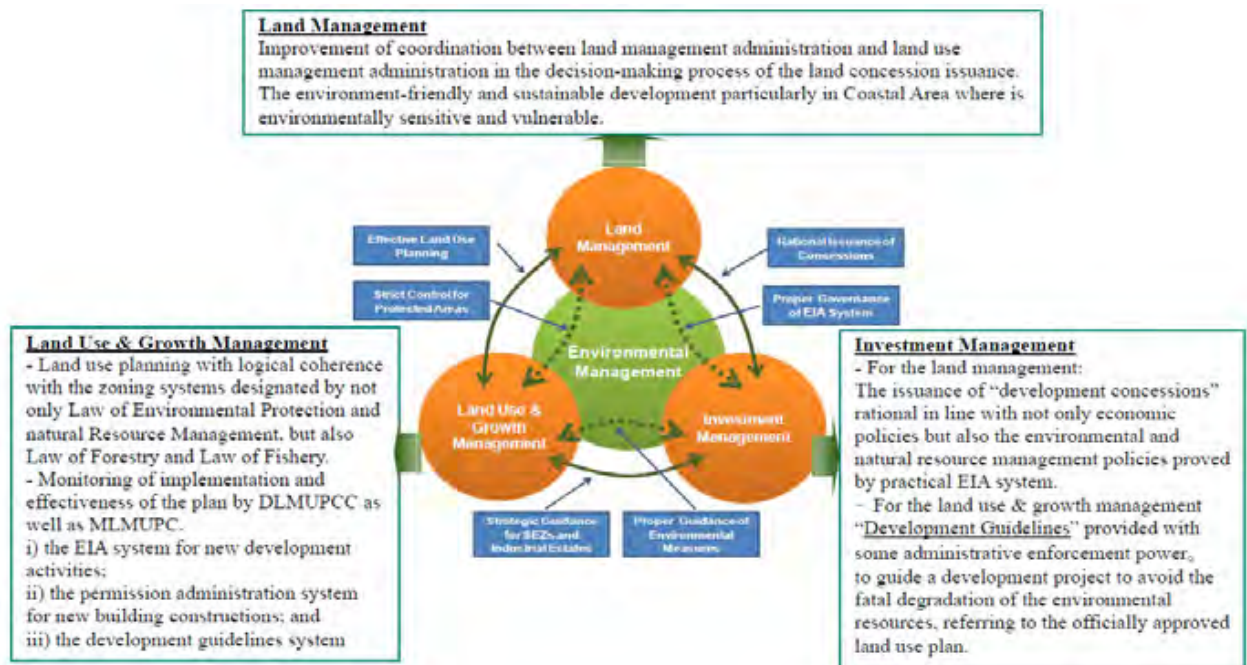


Source: JICA Study Team

Figure S7.02 Four (4) Development Management Issues and Mutual Linkages

< Integrated Mechanism for Development Management >

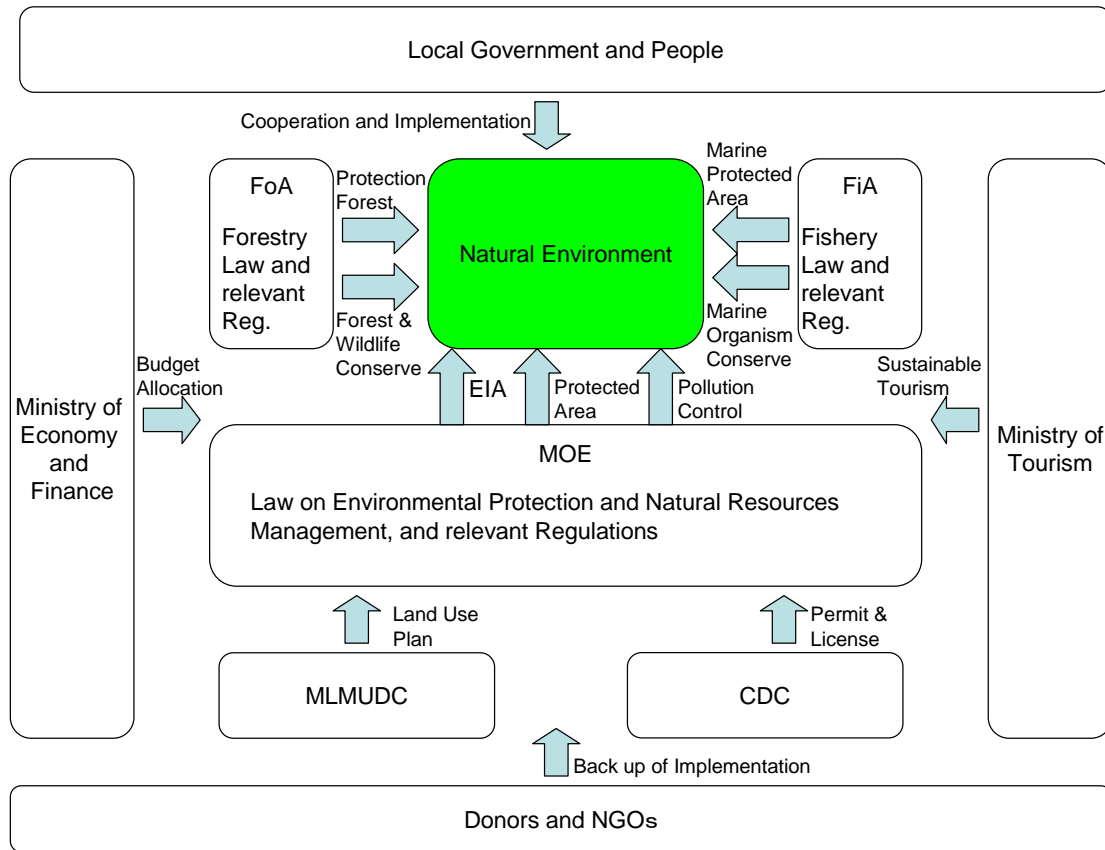
7.03 Establishment of an integrated development management system is proposed, based on the above observations on the current issues on the institutional systems. This is vital in order to implement the socioeconomic development as delineated in the Master Plan, keeping the environmental conditions sustainable. The proposed structure is conceptualized as shown below.



Source: JICA Study Team

Figure S7.03 Conceptual Structure of the Integrated Development Management System

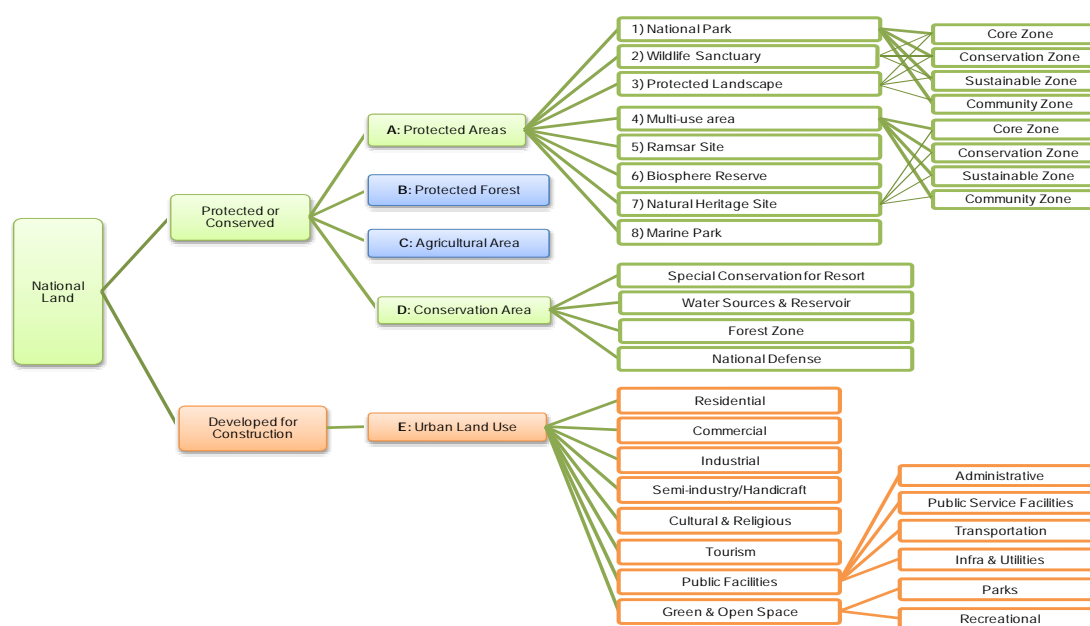
7.04 As seen in this figure, the environmental management shall be situated at the center of the entire system integrated with the other three (3) areas of management, because any development project has to strictly take into account environmental changes so as to minimize the negative impacts. The most difficult part in environmental management is not in planning, but in implementation. Legislation and institution must function consistently. Therefore, for effective law enforcement, adequate collaboration among relevant organizations and local people, and accordingly enough budget allocation are crucial. The concept of implementation framework is shown in Figure S7.04.



Source: JICA Study Team

Figure S7.04 Concept of Implementation Framework for Environmental Management

7.05 The categorization of land use zoning, which is applicable for the entire national land, is proposed in accordance with the relevant laws, as show in Figure S7.05. Based on the existing legal system, all the national land is divided into two categories of land, namely, Land to be protected/conserved; and Land to be developed for construction. Then, the former is divided into four (4) categories of land as follows:



Source: JICA Study Team

Figure S7.05 Proposed Land Use Categories for Land Use Planning

A: Protected Area, which is regulated by the Law of Environmental Protection and natural Resource Management and governed/managed by MOE;

B: Protected Forest Area, which is regulated by the Law of Forestry, governed/managed by MAFF;

C: Agricultural Area, where is governed/managed under MAFF;

D: Conservation Area, which is guided by the Law of Land Management, Urban Planning and Construction, under management by MLMUPC.

7.06 It should be noted that the land use planning at provincial as well as the national level shall start with designating boundaries to classify the entire national land into the five categories of land use (A to E) in collaboration with the relevant ministries such as MOE and MAFF. This is substantial part of land use planning work.

<Implementation Frame Work of the Development Strategy for Coastal Area>

7.07 Subsequent to the discussions on implementation mechanism of Master Plan in the previous section, the implementation mechanism of the Integrated Strategy for Coastal area is proposed.

7.08 An effective implementation mechanism of the Strategy should be established at the provincial level as well as at the national level. Under the on-going decentralization policy, needless to say, the provincial government should be further empowered for the project implementation in practice. For the effective management of the implementation of priority projects, which have been identified in the Strategy, the following three issues are envisaged.

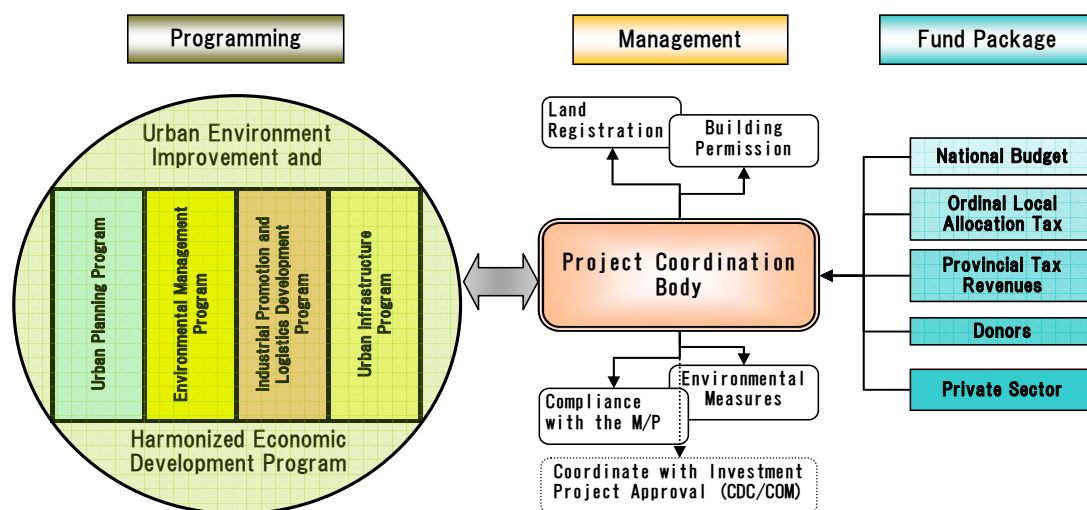
7.09 **Programming:** As will be discussed subsequent sections, a number of priority projects are recommended to be incorporated into a rational program, instead of leaving individual infrastructure

projects in hand of the different responsible line agencies. So, programming is a key to implement different types of projects in the most effective manner, keeping mutual linkages between those different projects.

7.10 **Fund Mechanism:** The provincial government’s self-financing capacity is extremely weak particularly for budgeting on capital formation and project implementation. Most of the financing capacity depends on the national government’s budget allocation and/or annual budgets appropriated to the line ministries. Under such a current constraint, a concept of “fund package” may deserve to be pursued to finance the planned program in an integrated manner, instead of preparing project budgets one by one in a separate manner. This fund package is all earmarked for the Urban Environment Improvement and Harmonized Economic Development Program, and managed by a single managing body.

7.11 **Implementation Body:** The third issue is who shall resume the full responsibility for the fund management as well as the program implementation. Needless to say, a strong capacity in the coordination and the management is required for such a coordination body. This body’s roles include some crucial administrative tasks to put each project forward, such as: i) settlement of some land registration issues; ii) compliance with environmental regulations on EIAs and other relevant laws; iii) issuance of building permission, if necessary; and iv) technical coordination with the officially approved master plan and the land use plan, and so on. In addition, this body should, of course, be closely involved in the process of approval on the large scaled development projects, which are currently determined and issued under the initiative of COM and CDC.

7.12 These three issues are linked with each other as an organic mechanism for the implementation, as shown in Figure S7.06. This mechanism might be unique in Cambodia, but is popular in other ASEAN countries such as Thailand and the Philippines, particularly for the city development. The regional development strategy is usually composed of different infrastructure projects such as roads/streets, SWM, water supply, drainage and sewerage,, bus terminals, parks and recreational facilities, so on. Because of this, an integrated approach is effective and efficient in terms of collective and synergetic project benefits and minimized loss of investments.



Source: JICA Study Team

Figure S7.06 Proposed Management Mechanism of the Program Implementation of the Strategy for Coastal Area

<Coastal Area Development Project Coordination Committee>

7.13 Under the current governmental organization, there is no coordinating section to look after the harmonized development of Coastal area. As a result, the policy matters are left only to the each provincial government. As seen before, as the investment projects in the area are large in scales, the effect and the impact of the huge investment to the projects has to be carefully measured along with its linkages with the development plans such as industrial plan, environmental plan etc.

7.14 From this viewpoint, it is recommended to establish the “Coastal Area Development Project Coordination Committee (CADPCC). The proposed mission of CADPCC is as follows:

- Provide comments prior to the investment permission on the large-scale investments projects be implemented in the area in light of the Land Use Plan and Development Guidelines applicable to the proposed project
- Provide construction permits with all sorts of concessions to be established in the area, based on the Land Use Plan and Development Guidelines applicable to the proposed area
- Closely monitor the progress of investment project implementation and provide advisory for harmonious effects
- Establish and promote the harmonized industrial development plans for the promotion of export-oriented industries, tourism, marine-based industries and resource-based industries in Coastal area.
- Collect and analyze all the investment related information in the area in order to coordinate harmonized development
- Be responsible for monitoring the investment project implementation including resettlement, proper use of land and environmental protection and solving the critical issues for the project implementation
- Establish and manage the SME Promotion Center for the area and monitor the effect of its activities. The SME Promotion Center shall manage the appropriate vocational and exports training and financial support scheme targeting the SMEs in the area.

7.15 The member of CADPCC is proposed to be in two tiers, one in the central government level, and the other in the provincial level. The central government level of CADPCC will focus on the policy issues, while the provincial level CADPCC will focus more on the condition issues on the site.

<Concept of Programming of Priority Projects>

7.16 As mentioned in the foregoing section, it is important to introduce an integrated programming approach to implement different projects varying in type, size and investment costs. In order to undertake these projects in the most effective manner by different ministries or line agencies, it is vital to establish and maintain mutual linkages with other different type of inter-related projects too. The overall program is proposed to be implemented by the CADPCC under the title “Urban Environment Improvement and Harmonized Economic Development Program’. This will be responsible for the clarification of the development purpose and to consider the development orientation as specified in the development visions. The program can be classified into the following four (4) sectors, which will further categorize or elaborate the details of the projects by its implementation period and its impact area:

- Urban Planning Sector;
- Environmental Management Sector;
- Industrial Promotion and Logistics Development Sector; and
- Urban Infrastructure Development Sector.

<Identified Projects to be implemented through the Programming Approach>

7.17 Following the proposed sector strategies, in total 42 projects as listed in Table S7.01 have been identified to realized the development goal toward 2030. As mentioned above, these identified 42 projects were categorized into four (4) sectors. The identified projects were further classified into three categories in terms of implementation period. The implementation period consist of three phases; i) a short term in the next five (5) years; ii) a mid term in the next ten (10) years, and iii) a long term in the next twenty (20) years.

7.18 Finally, the priority projects that are most urgently required for development were selected for implementation among the aforementioned 42 identified projects. Based upon the selection criteria, eleven (11) projects were selected as the priority projects, which are required to be implemented on urgent basis. These priority projects are listed and introduced in Book II.

Table S7.01 Identified Projects

Program Sector	Sub-sector	ID	Project Name	Schedule			Province				whole Cambodia
				Short	Mid	Long	Koh Kong	SHV	Kep	Kampot	
Urban Planning		1.1	Formulation of National Spatial Planning Project	■			✓	✓	✓	✓	✓
		1.2	Formulation of Master plan of urban planning for the Coastal area (including Short Term Follow-up Project of Urban Planning M/P in Preah Sihanouk and Kampot)	■				✓		✓	
		1.3	Establishment of National Technical Highschool in Coastal Area		■		✓	✓	✓	✓	
		1.4	Upgrading the Existing Training Center of MLMUPC and Strengthening Training System		■		✓	✓	✓	✓	
Environmental Management		2.1	Strengthening EIA Implementation Capacity Project	■			✓	✓	✓	✓	✓
		2.2	Capacity Development Project on the Management of Protected Areas	■			✓	✓	✓	✓	✓
		2.3	Study on Coral Reef Conservation in Coastal Area	■			✓	✓	✓	✓	
		2.4	Study on Aquatic Environmental Management in Preah Sihanouk	■				✓			
		2.5	Aquatic Environmental Improvement and Monitoring Program in Coastal Area (spin out project of 2.3 & 2.4)		■	■	✓	✓	✓	✓	
		2.6	Coastal Area Ecosystem Conservation Project through Ecological Corridor C		■		✓	✓	✓	✓	
		2.7	Study on Preaek Tuek Sab Watershed Management	■						✓	
		2.8	Preaek Tuek Sab Watershed Environmental Improvement and Monitoring Pr		■					✓	
		2.9	Establishment of FPP and Development of Infrastructure for Solid Waste Management for Sustainable Environmental Protection and Development in Coastal Area	■			✓	✓	✓	✓	
Industrial Promotion and Logistics Development	Manufacturing Industries	3.1	Promotion of Export and Related Industries through Strengthening and Improving SEZ Scheme	■			✓	✓	✓	✓	✓
		3.2	SME Promotion Development Project (SME Center/ Training/ Financing (TSL))	■			✓	✓	✓	✓	✓
		3.3	Utilization of the National Agency for Occupations and Labor for mobilizing labor	■			✓	✓	✓	✓	✓
	Resource-based Industries	3.4	Promotion of High-value added crops and improvement of productivity (including creation of a Farmer's Handbook to disseminate agri-chemical information)		■	■	✓	✓	✓	✓	
		3.5	OCOP (One Commune One Products) Development Project	■			✓	✓	✓	✓	
	Tourism	3.6	Creation of Hotel Associations and strengthening collective actions (promoting regional tourism advertisement activities, providing training opportunities for hotel association members, cleanup activities and upgrading infrastructure of common space, so on)	■			✓	✓	✓	✓	
		3.7	Facilitation of Movement of Tourists	■			✓	✓	✓	✓	✓
		3.8	Improvement of Infrastructure and Facilities for Tourist	■			✓	✓	✓	✓	
		3.9	Promotion of Community-based Eco-tourism		■	■	✓	✓	✓	✓	
	Logistics	3.10	Study on Comprehensive Logistics Development between Preah Sihanouk and Phnom Penh	■				✓		✓	
		3.11	Construction of Railway Terminal Station adjacent to the Sihanoukville Port and ICD in Phnom Penh	■				✓			

Infrastructure Development	Water Supply and Sewage	4.1	Hydrological Studies and Monitoring to Confirm the Safe Yield of Available Surface Water Resources				✓	✓	✓	✓	
		4.2	Hydro-geological Studies to Confirm Groundwater Potential for Urban Water Supply				✓	✓	✓	✓	
		4.3	Regulations and Structural Measures to Protect Water Supply Sources from Urban Development				✓	✓	✓	✓	
		4.4	Continued Strengthening of O&M Capacity for Management, Leakage Detection and Correction, Repair and Replacement of Water Mains				✓	✓	✓	✓	
		4.5	Preah Sihanouk Water Supply System Development Project					✓			
		4.6	Kampot Water Supply System Development Project								✓
		4.7	Implementation of a Water Quality Monitoring Program				✓	✓	✓	✓	
		4.8	Preah Sihanouk Sewage System Development Project					✓			
		4.9	Kampot Sewage System Development Project								✓
		4.10	Kep Sewage System Development Project							✓	
		4.11	Koh Kong Sewage System Development Project					✓			
	Transportation	4.12	Improvement of the Road Surface Condition on NR.48				✓				
		4.13	Cross Border Facility at the Border of Thailand				✓				
		4.14	Cross Border Facility at the Border of Vietnam								✓
		4.15	Road Network Construction and Old Bridge Rehabilitation Project in Kampot								✓
		4.16	Development of Coastal Road from Vietnamese Border to Kep							✓	
		4.17	Road Network Construction and Improvement Project in Preah Sihanouk					✓			

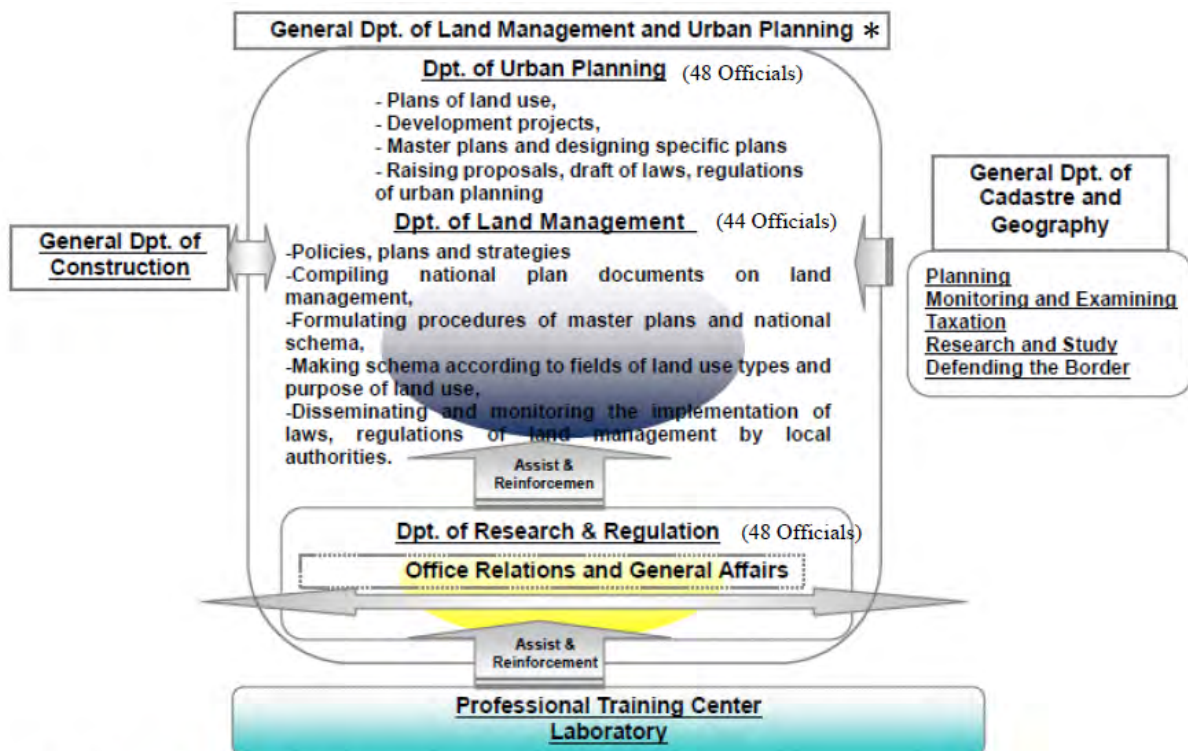
Note: The projects shadowed are the selected priority projects, which will be stated in detail in Book II.

8: CAPACITY DEVELOPMENT PLAN

<Major Roles and Duties of MLMUPC>

8.01 Major roles and duties of MLMUPC are stated as below.

- To formulate and implement policies, plans and strategies of land management to ensure appropriate balanced and sustainable use of land and natural resources, and urban planning including master plans and specific plans to improve the social order, beauty, safety, and well being of the cities.
- To collect and analyze information and data to be able to formulate and propose policies, planning, programs, procedures, regulations, regulations standards and measures, which related to land management and urban planning.
- To advise monitor, and encourage the coherent implementation of the policies of land management and urban planning
- To monitor the impact on land management and urban planning policies resulting from inside and outside the countries investment projects.



* : Target of Capacity Development Plan

Figure S8.01 Major Roles and Duties and Task Relations of MLMUPC

<Target Capacity to be Developed>

8.02 Target Capacity to be Developed are stated as below.

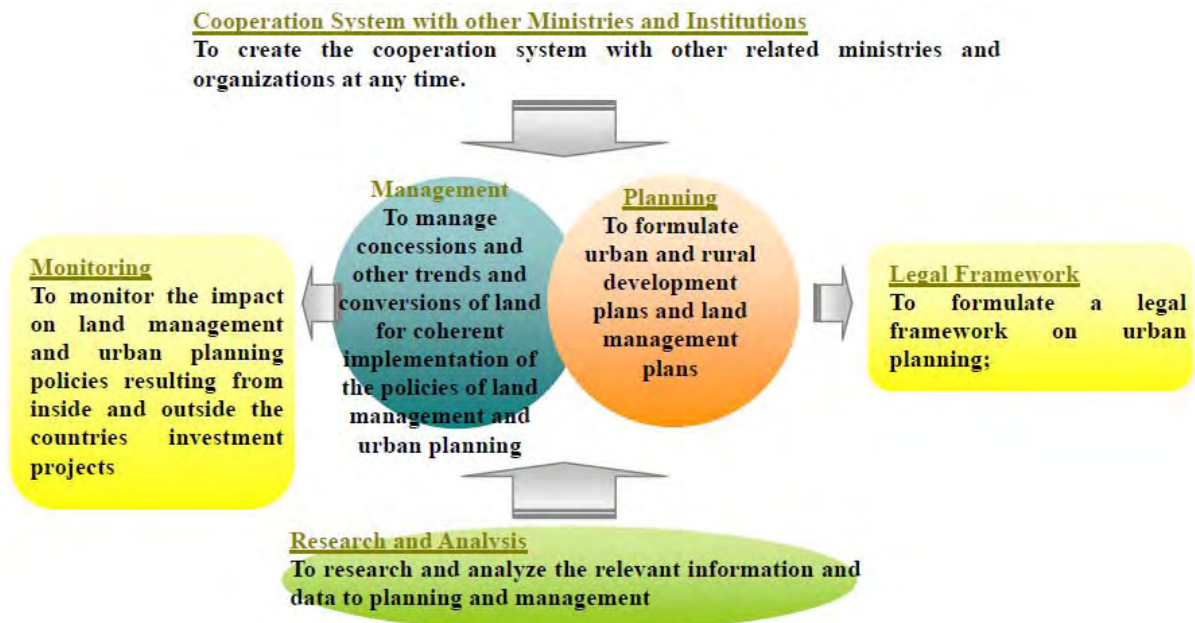


Figure S8.02 Target Capacity to be Developed

<Problem and Constraints to Management & Planning>

8.03 According to interviews, baseline survey and workshop by personnel of MLMUPC and DLMUPCC, 4 issues related to the target capacities to be developed has been derived in general.

Table S8.01 Problem and Constraints to Management & Planning

Problem and Constraints	
<p>Constraint 1: Human resource : Technical capacity of personnel for planning, management and legislation</p>	<ul style="list-style-type: none"> - Only 10 to 20% of the whole candidate to be entered into MLMUPC are college graduates or above. - Less than 50% of officials of MLMUPC with degree of bachelor or higher degree - Due to the status quo of the human resources, the actual planning work of Preah Sihanouk Province and other provinces are mainly conducted by the officials of the main office of MLMUPC, so that the personnel of provincial level have not enough experience and training for the integrated practical procedure of land management and planning - Low employee retention rate of officials of Provincial level due to the low salary with no allowance => MLMUPC started the local recruiting system two years ago in 8 Provinces including Koh kong which have the high employment separation rate in the country. - Though the Professional Training held in 2008 was highly evaluated in general, it is not planned as the long-term training so that it does not contribute to the sustainable capacity development. - The Professional Training Center is in charge of capacity development of its staff. However, the training center does not hold the permanent and stable program and trainers for sustainable training and capacity development.
<p>Constraint 2: Budgeting system for planning</p>	<ul style="list-style-type: none"> - Budget are distributed on the result base on each short stage and category on the process of planning, instead the whole budget is distributed in advance. It makes them difficult to pursue their own task and get the approval in appropriate stage. => It caused the time consuming procedure to end up that there is no plan which has been approved.

Constraint 3: Management system over land	- MLMUPC and DMLMUPCC are expected to be able to manage all issues and matters related to the land and planning. Nonetheless, a fully workable management system to control the land issue has not been constructed. MLMUPC has no right to regulate or manage over the issuance of concessions and transference of the land use type. (Refer to Figure S7.02)
Constraint 4: Efficient cooperation system with other related ministries and organizations	- Although MLMUPC have been devoted to conduct the cooperation system with other ministries and officials, however, there is no stable plan or methodology.

<Capacity Development Plan>

8.04 The general strategy for capacity development is proposed in the Figure below. The system to improve the three categories at the same time and continuously is recommended. For the best effect of capacity development, training and schooling will be conducted along with the proposed priority projects as stated below. The Training Center will take the main role to be responsible to the continuous and sustainable capacity development for the personnel in terms of the technical and management ability with the tight cooperation of academic institutes.

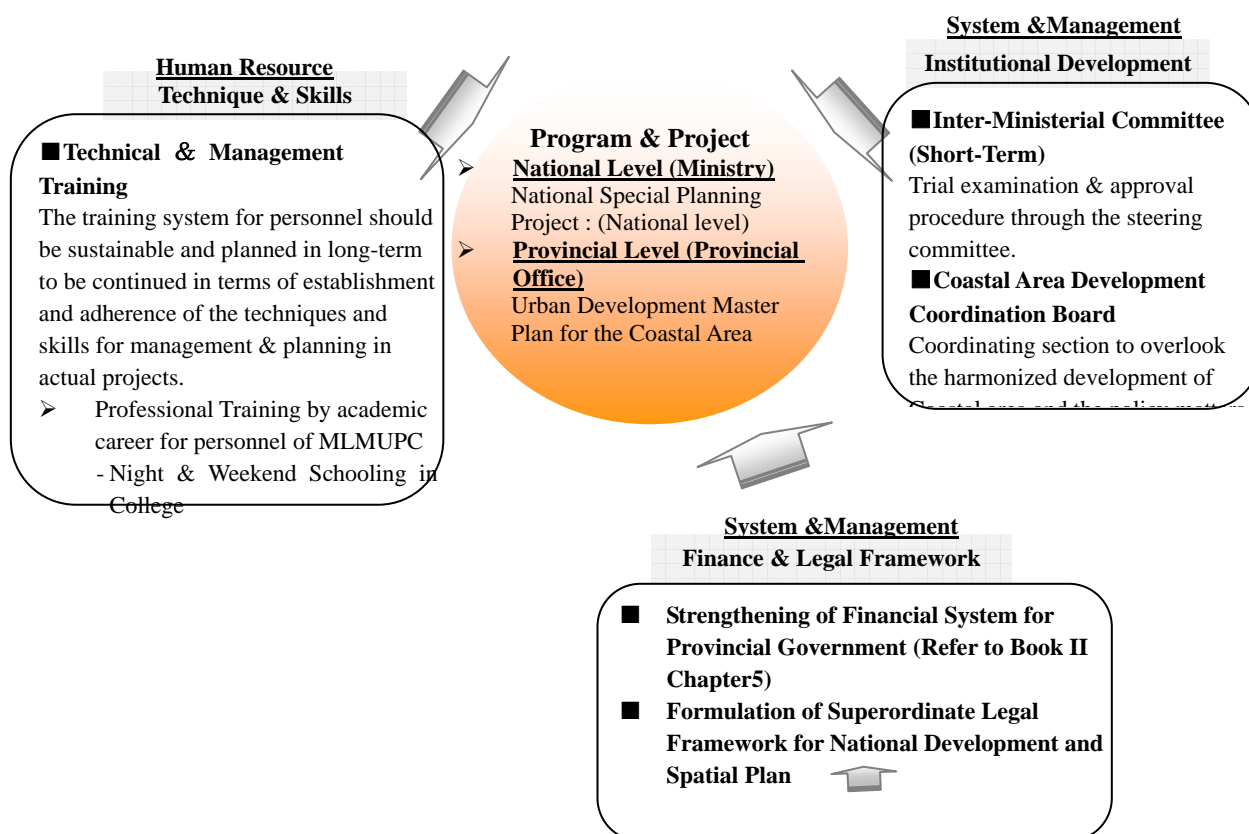


Figure S8.03 General Strategy for Capacity Development

9: RECOMMENDATIONS

9.01 The following are the recommendations for Coastal Area Development:

9.02 Coastal area of Cambodia has abundant resources and beautiful and precious nature. At the same time, Coastal area of Cambodia is faced with enormous pressure for development not only in and around the urban areas, but also in forest and even in national park areas.

9.03 Coastal area has the only deep seaport in Cambodia in Preah Sihanouk, and has unmatched potential for urban, tourism and industrial development. This is partly proven by a number of investment permits rendered within Coastal area.

9.04 Preah Sihanouk, with the nation's main seaport, is the hub for logistic movements mainly to and from the Capital Area of Phnom Penh. The Preah Sihanouk – Phnom Penh continues to be the nation's most important Growth Corridor for industry and logistics.

9.05 Effective connection between Preah Sihanouk and Phnom Penh for logistic movements of fully loaded containers is crucial to the nation's sustainable economic development. While today, NR4 functions as the major regional artery, improvement of NR3 needs to be accelerated to create the double axis between the two cities. In future, an alternative high-speed road with limited access will be needed in parallel to NR4..

9.06 Rehabilitation of the railway network is in progress with a PPP scheme with ADB assistance. It will be crucial for Coastal area to have functional and efficient railway transport of goods, including the containers, oil products and bulk cargoes. For containers, efficient sea-and-land integrated transport system has to be built urgently.

9.07 Coastal area shares the borders with Thailand on the northwest and with Vietnam on southeast. A high standard regional arterial road connecting Koh Kong, Preah Sihanouk, Kampot and Kep will be indispensable for the establishment of Coastal area Integration Axis. This axis will support Cambodia in the border trading with the two nations. This will also facilitate economic activities throughout the Coastal area along with promotion of regional tourism.

9.08 Development of SEZ is an important instrument for Cambodia for diversifying the export industries. Though a number of SEZs are permitted in Cambodia, the number of firms located in these SEZ's are still limited. For the development and promotion of SEZs, the improvement in SEZ administration, better governance, transparency in management and operation and revisions of the legal base will be required..

9.09 In order to make SEZ more beneficial to Cambodia, means to assist the formation of backward linkages have to be implemented which focus on SME support mainly in human resources training and micro financing.

9.10 More attention needs to be paid to the technical and environmental standards of SEZ, such as water effluent quality and air pollution, so that the SEZs will not negatively affect the surrounding natural environment.

9.11 Tourism has great potential in Coastal area as the third destination in Cambodia after Angkor and Phnom Penh. Tourism information highlighting the area's attractive tourist spots and destinations need to be accumulated and disseminated by effective channels to the interested tourists.

9.12 Agricultural products such as vegetables and fruits are abundant in Coastal area, and are mostly supplied to the domestic market, or exported mainly as raw materials with low value added.

While some of the products have good quality, promotion of export has to be supported. Organic vegetables and fruits will be attractive for export markets.

9.13 There is a strong demand for seafood in Cambodia and in neighboring nations. In order to increase production with consistent quality, promotion of aqua culture needs to be supported. In addition, processing of marine products need to be promoted in Coastal area.

9.14 One Community One Product (OCOP) is a method of economic development for systematic and continuous integration of knowledge, skill and business development. A demonstration project together with a microfinance scheme is proposed for implementation.

9.15 While Coastal area has high potential for development, environmental protection has to be put in effect thoroughly so that the precious nature and environment should not be lost forever. In particular, Ecological Corridor has to be conserved along with certain essential areas that needs special protection measures.

9.16 Concessions for development must be carefully examined from the viewpoint of the environment, and the rational decision must be made when permission for such concession development is given. Prior to granting permission, any conditionality related to concession development must be clearly clarified to the applicant.

9.17 For the concession projects, the procedures of EIA (MOE) and building permit (MLMUPC) must be applied as the laws and regulations stipulates.

9.18 For sustainable economic growth of Coastal area, the establishment of integrated development management is proposed with four (4) components; the Environmental Management, Land Management, Investment Management and Land Use and Growth Management.

9.19 Under the current governmental organization, there is no coordinating section to look after, coordinate and monitor the harmonized development in coastal area. As a result, the policy matters are left only to the each provincial government. It is recommended to establish an inter-ministerial body, "Coastal Area Development Project Coordination Committee (CADPCC) under MLMUPC.

9.20 The member structure of CADPCC shall basically follow the existing S/C members and inter-ministerial technical working group members, which were established for the implementation of this Study.

9.21 This recommendation of the establishment of CADPCC has been approved by the RGC and the minutes of meetings on the action plans for establishing CADPCC by June/ July of 2011 was signed between the JICA Study Team and the Cambodian Steering Committee of this Project, on May 27th 2010.