

## Chapter 9 PRIORITY PROJECTS/PROGRAMS

### 9.1 *Projects/Programs to be Considered under the 8th Plan*

On the basis of the proposed development phasing for balanced regional development, as discussed in the foregoing Section 8.5, it is recommended that the following projects/programs be incorporated in the 8th Plan for full-scale implementation or at least for initiation of preparatory works:

<u>Project/Program</u>	<u>Responsible Agency</u>
<u>Social</u> (See Volume 2, Appendix III)	
(SS1) Social monitoring and evaluation	NESDB
(SS2) Local governance system improvement	Min. Interior
(SS3) Social partnership promotion	Min. Interior, BOI
<u>Education</u> (See Volume 2, Appendix III)	
(ED1) Experimental school and curriculum revision	MOE
(ED2) High-technology universities (partly incorporated into Initiative-5)	MOUA
(ED3) Industry-based training center (incorporated into Initiative-4 and 6)	MOL
(ED4) Computer availability expansion	MOE
<u>Public Health</u> (See Volume 2, Appendix III)	
(PH1) Medical research laboratory with hospital (incorporated into Initiative-5)	MOPH
(PH2) Regional occupational health center (incorporated into Initiative-6)	MOPH, MOL
(PH3) Emergency medical service upgrading	MOPH, PHO
(PH4) Integrated HIV/AIDS control	MOPH, PHO
(PH5) Health promotion upgrading	MOPH, PHO
<u>Rural/Urban</u> (See Volume 5, Appendix II to Chapter 1, Volume 5, Appendix I to Chapter 2)	
(RD1) Rural development models	NRDC, ARD
(UD1) Upper WSB urban cluster planning	DTCP

(UD2)	Specific city plans (Science City incorporated in Initiative-5) (Bang Saphan industrial city in Initiative-6)	NESDB, etc.
(UD3)	Urban social infrastructure	Local Gov.
(UD4)	Urban amenity improvement	Local Gov.
(UD5)	Institutional strengthening	Min. Interior, DTCP
<u>Agriculture/Fisheries</u>		
(See Volume 6, Appendix I)		
(AG1)	Field crop restructuring (partly incorporated into Initiative-2)	MOAC, etc.
(AG2)	High-value crops for niche markets (partly incorporated into Initiative-2)	MOAC, etc.
(AG3)	Tropical fruit improvement (partly incorporated into Initiative-7)	MOAC, etc.
(AG4)	Tropical fruit center (incorporated into Initiative-7)	MOAC
(AG5)	Cattle fattening	MOAC, etc.
(AG6)	Dairy production promotion	MOAC, etc.
(AG7)	Slaughterhouse modernization	MOI, MOAC
(AG8)	Agro-processing promotion	MOAC, MOC
(AG9)	Water application efficiency	MOAC, RID
(AG10)	Coconut-based livelihood	MOAC
(AG11)	Agricultural marketing information (partly incorporated into Initiative-2 and 7)	MOAC, MOC
(AG12)	Farmers' lifetime training	MOAC
(AF1)	Coastal fisheries rehabilitation	OEA, DOF
(AF2)	Aquaculture model	DOF
(AF3)	Fish processing industry complex	DOF
<u>Industry</u>		
(See Volume 7, Appendix II)		
(ID1)	Free trade areas (incorporated into Initiative-4 and 6)	MOI, IEAT
(ID3)	Rural-industrial community model	MOI
(ID4)	Quality/productivity enhancement	MOI
(ID6)	New investment promotion	MOI, BOI
<u>Tourism</u>		
(See Volume 8, Appendix I)		
(TO1)	Zone-wise development (partly incorporated into Initiative-1)	MOSTE, TAT
(TO2)	Amenity preservation program	OEPP, TAT

(TO3)	Tourism related infrastructure (partly incorporated into Initiative-1)	DOH, etc.
(TO4)	Lodging facility upgrading (partly incorporated into Initiative-1)	BOI
(TO5)	Tourism information service promotion	TAT, Local G

Resources Management/Environment

(See Volume 9, Appendix I to Chapter 1)

(EV1)	Organic farming promotion	DA, etc.
(EV2)	Reforestation program	RFD
(EV3)	Domestic waste water treatment	OEPP
(EV4)	Solid waste management (partly incorporated into Initiative-5)	OEPP
(EV5)	Environmental research center (incorporated into Initiative-5)	DEQP

Water Resources

(See Volume 9, Appendix I to Chapter 2)

(WR1)	Irrigated agriculture intensification (partly incorporated into Initiative-2)	RID
(WR3)	Multipurpose reservoir development (incl. Tha Sae reservoir in Initiative-6)	RID
(WR5)	Flood control and drainage improvement	RID

Energy/Power/Telecommunications

(See Volume 9, Appendix I to Chapters 3 and 4)

(EP1)	Cooking stove dissemination	PDA
(EP2)	Energy substitution (ceramic/lime)	DEDP
(EP3)	Demand side management	EGAT
(EP4)	Partially insulated cable promotion	PEA
(TL1)	Telecommunications expansion	TOT
(TL2)	Teleport promotion (partly incorporated into Initiative-5 and 6)	TOT, CAT
(TL3)	Agricultural information system	TOT
(TL4)	Medical information system	MOPH
(TL5)	Tourism information system	TAT
(TL6)	Information highway for education	MOE, PTD

Transportation

(See Volume 9, Appendices I and II to Chapter 5)

(RP1)	Industry-supporting roads (incorporated into Initiative-4 and 6)	DOH
(RP2)	Ratchaburi-provincial capital links (partly incorporated into Initiative-4)	DOH
(RP3)	Pathiu-Rt.4 and Pathiu-Bang Saphan	DOH
(RP5)	Secondary/feeder roads	DOH
(RP6B)	Urban roads	Local Gov.
(RP7)	Rural roads	PWD
(RP8)	Upgraded road maintenance	DOH
(RP9)	Outer-outer orbital route	DOH
(RP10)	North-south links	DOH
(RP11)	Chumphon-Ranong links	DOH
(RP12)	Subregional links with Myanmar (incl. Kanchanaburi-Tavoy corridor)	DOH
(RT1)	Intercity and rural bus transport	LTD
(RT3)	Road safety	HPD, DOH
(WT1)	Prachuap deep-sea port expansion	IEAT, HD
(WT2)	Chumphon feeder port	HD
(WT5)	Gulf navigation promotion	HD
(WT8)	Tavoy (Dawei) deep-sea port	(MPA)
(RW1)	Southern line railway improvement	SRT
(RW5)	Freight transport improvement	SRT
(AT1)	Marketing of Pathiu airport	DOA

The estimated cost of the projects/programs proposed for consideration under the 8th Plan is summarized in Table 9.01 below. It may be noted that the project/program investment plans are indicative rather than specific, complete, and detailed in nature.

**Table 9.01 Indicative Investments under the 8th Plan**

Sector	Amount (\$ million)	Share (%)
Social, Education, and Public Health	47	(1.3)
Rural and Urban	678	(19.4)
Agriculture and Fisheries	232	(6.6)
Industry	764	(21.9)
Tourism	60	(1.7)
Environment	204	(5.8)
Water Resources, Power, Telecoms	160	(4.6)
Transportation	1,355	(38.7)
<b>Total</b>	<b>3,500</b>	<b>(100.0)</b>

Investments in socially-oriented and human-centered development projects/programs are not necessarily limited to investment in the social, education, and public health sector, but earmarked in other sectors, such as rural/urban, agriculture, industry, environment, energy, and transportation sectors. An aggregate investment in social and human development oriented projects and in the environment amount to about \$610 million, which account for about 17.4 per cent of total indicative investments. Additionally, agricultural projects that benefit small farmers and some elements of the Science City are also regarded as socially-oriented and human-centered. Thus, the social and human development oriented projects amount to over 20 per cent of the \$3.5 billion of Phase I expenditures.

Importance of the transportation sector is taken into account in Phase I investments. About 39 per cent of the estimated Phase I expenditures is earmarked for this sector, so that linkages within the WSB and with other regions and subregions can be strategically developed to enhance social and economic prosperity of the WSB region.

## **9.2 Development Initiatives**

A number of projects/programs proposed for area development in Section 8.3 can be integrated and jointly promoted for implementation as "Development Initiatives". Seven development initiatives are recommended for implementation during the 8th Plan period, are outlined below.

### **(1) Kanchanaburi Tourism Promotion Initiative**

#### **Background**

Kanchanaburi is one of the tourism centers of the WSB region, having a large number of natural, historical, (e.g., the River Kwai bridge), and cultural attractions. An inventory survey of these attractions was conducted by Chulalongkorn University in 1996. About 1.2 million tourists (of which 1.1 million were Thais) and 1.1 million excursionists (i.e., day-trip visitors; of which 1.0 million were Thais) visited the Kanchanaburi area in 1994. Since the area offers an excellent environment for eco-tourism, it is not suggested that the number of tourists and excursionists to this area be expanded rapidly; rather a modest annual increase of 3.3 per cent for tourists and 1.6 per cent for excursionists is projected towards 2011. As tourism facilities are still insufficient in Kanchanaburi, it is proposed to improve existing facilities and enhance amenities in the Kanchanaburi area.

### Functions

Since Kanchanaburi province offers a variety of attractions and environments, it is proposed that the improvements be implemented zone by zone. The Upper Zone in the western part is designated as an "eco-tourism zone I", and the central part is designated as an "eco-tourism zone II". The Lower Zone in and around Kanchanaburi city is designated as an "urban tourism zone". Promotion of man-made attractions will be planned in the latter stages of the development initiative. It is also proposed that a natural science museum contemplated by the Royal Forestry Department be located in this zone and that an exhibition center be developed at the Khao Laen damsite by EGAT/RID.

### Social/Human Considerations

Tourism development in Kanchanaburi is expected to vitalize rural economies and contribute to social development through promotion of rural industries and services supporting tourism activities directly and indirectly. Eco-tourism would serve as the means for environmental education, and study tours/camps for school children would be promoted. The proposed national science museum and the Khao Laen exhibition center would also promote human-centered development.

### Principal Features

Under the tourism promotion initiative, it is proposed to improve: (i) access roads, trekking/hiking paths, parking lots, restrooms, and other facilities; (ii) camping and auto-camping sites; and (iii) hotel/lodging facilities. It is preliminarily estimated that the improvements would cost about \$44 million (about \$14 million in Phase I). A substantial part of the estimated cost (about 57 per cent) is earmarked for hotel/lodging facility development, which should be implemented by the private sector.

### Implementation Plan

The proposed improvement plan will be executed stage by stage. Phase I (1997-2001) will involve improvement of 15 tourism spots and eight camping/auto-camping sites, as well as hotel/lodging development of about 700 units. TAT should take the initiative in promoting the proposed improvements and in ensuring public support for investment by the private sector. (See Volume 8, Appendix II for further detail)

## **(2) Kanchanaburi Agricultural Intensification Development Initiative**

### **Background**

The eastern part of Kanchanaburi province, which is encompassed in the Study Area, is covered by the Greater Mae Klong Irrigation Scheme (GMIS), particularly by the Phanom Thuan irrigation sub-project (53,170 ha). Paddy and sugar cane are still major crops in this sub-project area, despite the government's policy to restructure low-value crops and replace them with high-value crops. Since the Phanom Thuan district is provided with irrigation systems and is located close to the major consuming center in the BMA, the district has emerging economic opportunities for intensifying and modernizing agricultural activities.

### **Functions**

The proposed agricultural intensification initiative in the Phanom Thuan district will be composed of the following three components: (i) crop restructuring and production of high-value crops, (ii) support for market improvement, and (iii) land consolidation and on-farm development for crop diversification. A model/demonstration area of 1,600 ha (10,000 rai) will be selected in and around Tambon Rang Wai to practically introduce intensified and modernized agriculture of high-value crop cultivation. Training of farmers in farming practices and marketing will be incorporated as a major component of the proposed initiative.

### **Social/Human Considerations**

It is proposed that agricultural intensification be demonstrated in a model area in Phanom Thuan district facing emerging economic opportunities. The proposed programs will also constitute one of the rural development models proposed under this Study, which will be directed towards socially-oriented development in rural areas in association with agricultural development. The proposed initiative is also planned to promote human-centered development through the training of farmers in agricultural practices and marketing.

### **Principal Features**

In the model/demonstration area for agricultural intensification in Phanom Thuan (1,600 ha in the initial stage), the cultivation of vegetables (e.g., baby corn, asparagus) and fruit trees (e.g., guava, rose apple, banana, papaya, mango) will be introduced. Some paddy fields will remain in the initial stage but will be gradually shifted to combined paddy and upland crop cultivation through land consolidation. It is preliminarily estimated that \$15 million will be required to implement the proposed development initiative.

### Integrated/Related Projects

The proposed initiative will integrate the programs for field crop restructuring (AG1), high-value crops for niche market (AG2), tropical fruit improvement (AG3), and water application efficiency improvement (AG9). The initiative will constitute one of the rural development models (RD1).

### Implementation Plan

The proposed initiative will be implemented in five years in Phase I as a springboard for agricultural intensification in the GMIS and eventually in the Upper WSB. As the initiative contains multiple components/programs, cooperation and coordination among MOAC, RID, CLCO, MOC, and BAAC will be indispensable for successful implementation. (See Volume 6, Appendix II for further detail)

## **(3) Ban Pong Industrial/Distribution Development Initiative**

### Background

The Upper WSB, with improved transportation links to other areas of the WSB as well as to the BMA and other regions, is expected to function as an "industrial logistic center" (ILC). The basic idea is to locate all the relevant functions and facilities of industrial logistics in the center to ensure the right product with the right conditions to be delivered at the right place, at the right cost and at the right time, integrating production and distribution activities. As Ban Pong is located in the center of ILC and at the crossroads of north-south and east-west arteries, it is proposed that an industrial/distribution center be developed at Ban Pong.

### Functions

The Ban Pong Industrial/Distribution Center (BPIDC) is planned to have five major functions: (i) industrial estate, (ii) distribution center, (iii) truck terminal, (iv) inland clearance depot, and (v) R&D and testing center. Through these functions, the BPIDC will facilitate transport and storage, loading/unloading, distribution, processing/production, repairing and cleaning, packing/packaging, and R&D/testing. The BPIDC will promote linkages among the Upper, Central, and Lower WSB, as well as linkages with other regions and subregional linkages with Myanmar.

### Social/Human Considerations

The BPIDC would be instrumental in strengthening functional linkages between the WSB, the BMA and Myanmar as well as within the WSB. It would help not only to

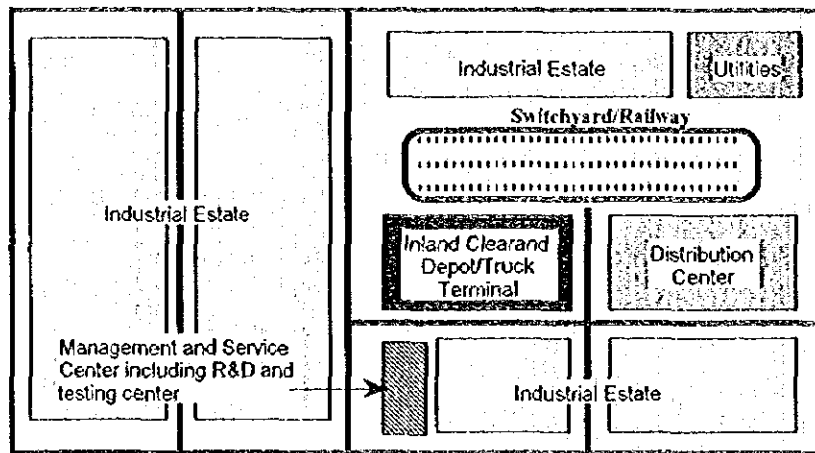


generate higher value-added within the center but also to expand/diversify opportunities for various socioeconomic activities outside. Increased interactions through various socioeconomic activities would contribute to human and social development. The R&D function at the BPIDC would contribute more directly to human development.

**Principal Features**

Five functions are proposed to be located in a compound of about 170 ha at a site to be selected near Ban Pong. The BPIDC will generate or handle cargoes of about 1.3 million tons annually. The construction of BPIDC facilities will cost about \$260 million in total.

**BPIDC Concept Plan**



**Integrated/Related Projects**

The BPIDC will be incorporated into the Upper WSB urban cluster development (UD1) and strategic industrial estates (ID2). Within the BPIDC, the projects proposed for inland depot development (ID4) and truck terminal development (RT2) will be integrated. The BPIDC will have a close relation with the proposed outer-orbit route (RP9), which will start from the junction at Ban Pong.

**Implementation Plan**

The BPIDC is scheduled for implementation during Phase II (2002-2006) because of the complexity of the initiative and the long lead time required, but it is recommended to initiate preparatory works (e.g., feasibility study and institutional arrangements) during Phase I (1997-2001). It is proposed to set up a development corporation for implementation; IEAT is expected to take initiative for the study and implementation. (See Volume 7, Appendix III for further detail)

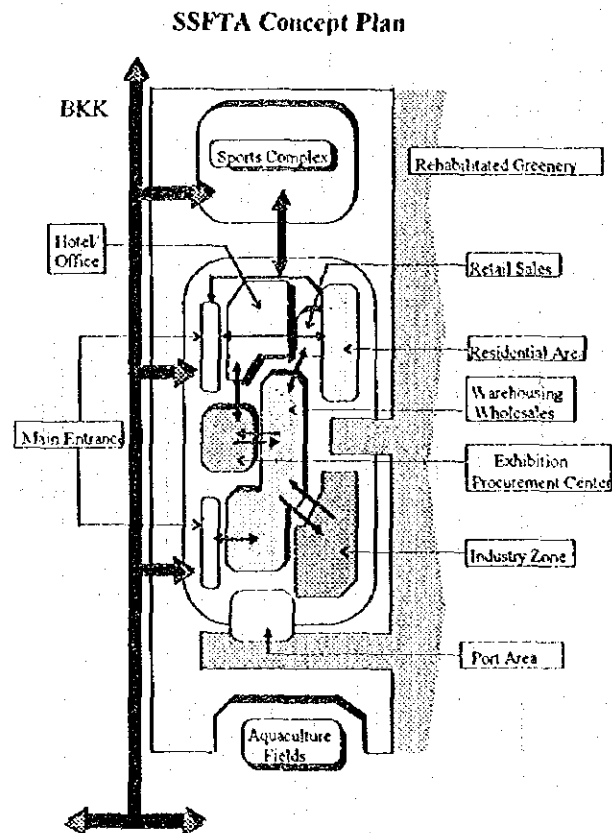
#### (4) Samut Songkhram Free Trade Area Development Initiative

##### Background

In the early years of the 21st century, the AFTA and WTO agreements will come into full force, and competition will be intensified under the free trade regime. Since Thailand has lagged behind other ASEAN nations in R&D activities, which will play a vital role in strengthening competition, it is suggested that the free trade concept be introduced and investment promoted in strategically designated areas before the AFTA and WTO agreements become fully effective. The Samut Songkhram Free Trade Area (SSFTA) is therefore proposed under these impending circumstances. The SSFTA will also decentralize industrial and business activities, which are excessively concentrated in the BMA, and assume functions supplemental to those of the BMA. It is proposed that the sizable abandoned shrimp fields in Samut Songkhram be used for the development of the FTA.

##### Functions

The SSFTA is proposed to serve as an (i) industrial estate, (ii) warehousing, (iii) exhibition, (iv) merchandising (wholesale/retail sale), (v) business/financial activities, and (vi) residential area. It is proposed that duty-free import/export privilege be granted in the SSFTA, i.e., no restriction be imposed on imported goods and their storage, no limitation be imposed on business activities, and VAT be exempted on trade within the FTA.



##### Social/Human Considerations

The SSFTA would re-establish the livelihood of local people living in and around the abandoned shrimp fields. They may continue to live in the area, either within the SSFTA or outside, as the SSFTA would offer a wide range of employment opportunities and housing as well. It is expected that the local people will be involved in the planning and implementation of the SSFTA. Some of them may invest in new business opportunities

or even participate in the proposed Development Corporation to manage the development.

#### Principal Features

It is proposed that about 1,000 ha be designated initially for the SSFTA on the abandoned shrimp fields, with the land to be utilized for various functions as proposed above. It is preliminarily estimated that the development of the SSFTA would cost around \$800 million.

#### Integrated/Related Projects

The SSFTA will integrate the proposed development of free trade areas (ID1), Upper WSB urban cluster development (UD1), roads to support specific industrial development (RP1), and the Samut Songkhram feeder port (WT4). The SSFTA will also have synergies with the Ratchaburi - Samut Songkhram link road (RP2) and mangrove reforestation program (EV2).

#### Implementation Plan

Under the existing IEAT Act, free trade is permissible to a certain extent (e.g., EPZ status is granted for industries exporting over 40 per cent of their products). On the other hand, FTZ (free trade zone) status by MCI Decree is extended to limited categories of industry. It is suggested that a feasibility level study be initiated to work out a physical plan for the SSFTA and that further modification/integration of the existing act/deGREE be studied jointly by MOI, IEAT, and other authorities concerned. It is recommended that the SSFTA be operational before AFTA becomes fully effective in 2003. (See Volume 8, Appendix IV for further detail)

### **(5) Science City Development Initiative**

#### Background

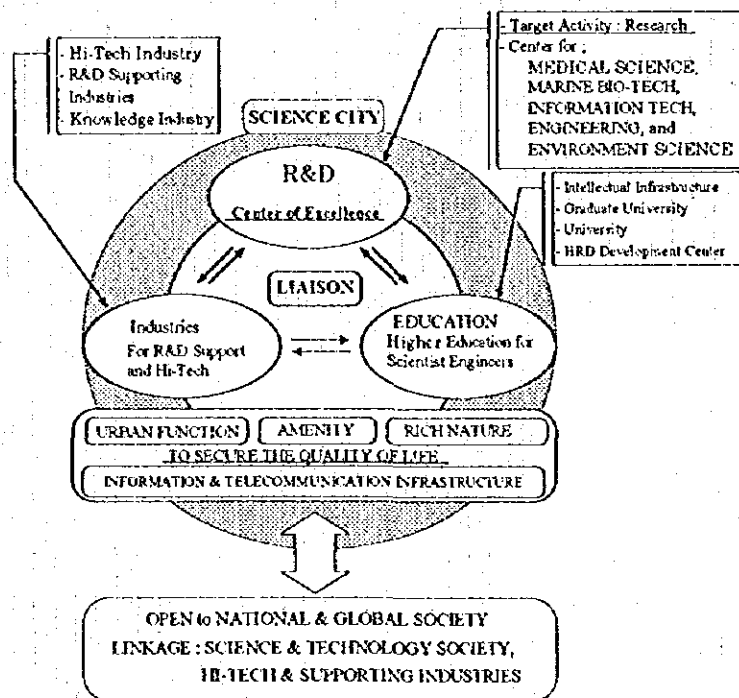
Research and Development (R&D) activities have lagged far behind in Thailand. Total R&D expenditures accounted for 0.18 per cent of GDP in 1993 (the 8th Plan envisages it increasing to 0.75 per cent by 2001), and R&D activities are rather concentrated on "applied research" in agriculture and medical science. To sustain economic development under the intensified competition of the emerging free trade regime, it is vital to advance "basic research" and "technology development" and to further develop "applied research". Design and engineering must also be developed more rapidly. In addition, considering that more than 85 per cent of existing R&D units in Thailand are located in Bangkok and that they are isolated from each other in the congested traffic environment

of the BMA, it is proposed that R&D activities be developed in an integrated form, demonstrating a firm commitment to decentralization. It is therefore recommended to develop a Science City in Petchaburi to meet these acute and urgent requirements.

### Functions

The proposed Science City in Petchaburi (SCP) will have three major functions: (i) higher education for scientists and engineers (intellectual infrastructure); (ii) R&D activities to establish a "center of excellence"; and (iii) R&D support for industries. It is envisaged that R&D activities will cover medical science, marine biotechnology, information technology, engineering, environmental science, and the like. The SCP will promote linkages between academia and R&D activities (including linkage with the Chumphon campus of the King Mongkut's Institute of Technology), linkages between science/technology circles and high-tech industries, and linkages among research activities (interdisciplinary). Information technology (IT) will be applied to the maximum extent in the proposed SCP. A new town will be developed to support R&D activities in the SCP, having urban functions, amenities, and infrastructure, as well as facilities for information exchange and telecommunications.

### Basic Concept of Science City



### Social/Human Considerations

The proposed SCP is totally human-centered and socially-oriented. It is designed to contribute to educational and R&D development, as well as to promote public health and betterment of the environment in the region.

### Principal Features

It is proposed to develop SCP at a site located to the west of Petchaburi city. The proposed site is close to the resort areas at Cha Am and Hua Hin, and it is located within a distance such that a one-day round trip is possible to/from the BMA. It is preliminarily planned for the SCP to have a total area of about 2,400 ha, and an population of about 20,000. The total cost of SCP is estimated to be in the order of \$2,200 million for full-scale development.

### Integrated/Related Projects

The SCP will integrate such projects as a high-technology university (ED2), research hospital (PH1), and environmental monitoring, research, and training (EV5). SCP will be closely linked to industrial R&D promotion (ID6), teleport promotion (TL2), and other urban infrastructure development programs.

### Implementation Plan

It is proposed that NESDB prepare a detailed plan for the proposed SSP in coordination with MOSTE and other related institutions. The SSP is planned to be implemented stage by stage, with Phase I (1997-2001) costing about \$630 million.

(See Volume 5, Appendix III to Chapter 2 for further detail)

## **(6) Bang Saphan Free Trade Area Development Initiative**

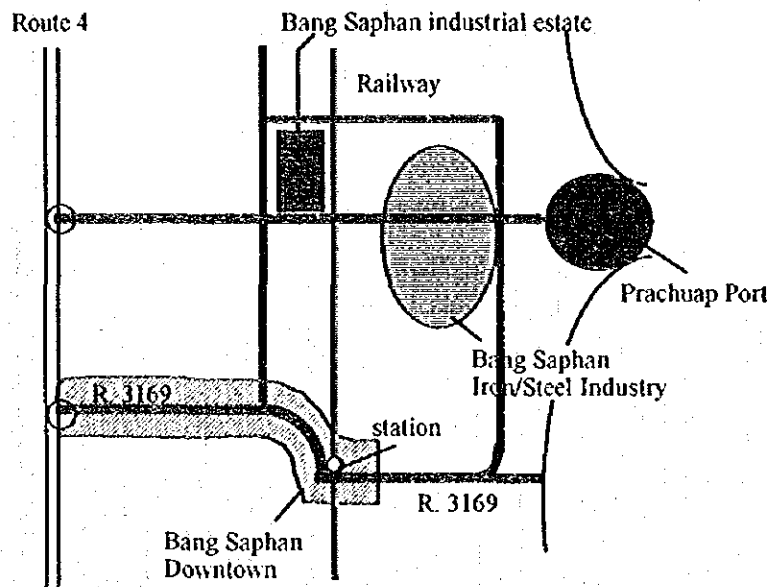
### Background

Bang Saphan is the only site available for a deep-sea port along the Gulf of Thailand, capable of handling over 200,000 DWT class vessels. By private initiative, Prachuap port at Bang Saphan has been partially constructed (a breakwater and a wharf for three berths), and a steel complex is being developed. IEAT has recently completed a feasibility study of an industrial estate to be located to the west of Prachuap port and the steel complex.

### Functions

The Bang Saphan Free Trade Area (BSFTA) will be composed of three major components: (i) expansion of Prachuap port, particularly for handling general cargo; (ii)

further expansion of the existing steel complex by private initiative; and (iii) development of Bang Saphan industrial estate. It is proposed that the area where these components are developed be designated as an FTA. Public sector support is expected for implementation of the following facilities: (i) expansion of Prachuap port; (ii) development of the industrial estate; (iii) construction of an access road to the port and industrial estate; (iv) provision of water supply from the Tha Sae dam/reservoir to Bang Saphan; and (v) industrial city development.



#### Social/Human Considerations

The proposed industrial city will promote socially-oriented development, providing opportunities for housing and social infrastructure. A regional hospital for occupational health is also proposed in the Bang Saphan area. Skill development at the training center and R&D/testing center will contribute to human-centered development in association with industrial promotion.

#### Principal Features

Port expansion involving the construction of additional berths with a total length of 1,735 m (estimated cost of about \$240 million) is required to handle general cargo of about 8 million tons per annum. The industrial estate is planned to reach 600 ha in the ultimate stage (estimated cost of \$110 million). The 16 km access road is planned to reach Prachuap port (estimated cost of \$47 million). Water supply of 30 million cubic meters (MCM) annually from Tha Sae dam/reservoir will require construction of a pipeline of about 72 km in length (estimated cost of \$130 million). An urban center/industrial city is planned for the estimated population of about 55,000.

### Integrated/Related Projects

The BSFTA will integrate the following programs: (i) industrial core development (ID3); (ii) industrial R&D promotion (ID6); (iii) industrial city development (UD2); (iv) Prachuap port expansion (WT1); (v) roads to support specific industrial developments (RP1); and (vi) reservoir construction (with Tha Sae - Bang Saphan pipeline). Also, the BSFTA is closely related to the regional occupational health center program (PH2) and teleport communications development (TL2).

### Implementation Plan

Expansion of Prachuap port and development of the industrial estate will be implemented stage-wise under a public/private partnership. The water supply scheme (pipeline) and the access road to the port are expected to be implemented by the public sector at the initial stage. (Refer to the feasibility report on the Bang Saphan Industrial Estate, by IEAT/JICA, January 1997.)

## **(7) Chumphon Tropical Fruit Development Initiative**

### Background

In terms of agro-climate, soils, and topography, Chumphon province in the Lower WSB is one of the most advantageous regions in Thailand for production of tropical fruit. Currently, about 84,800 ha or 30 per cent of the province's agricultural land is cultivated with fruit (e.g., durian, rambutan, mangosteen, pomelo, banana, jackfruit, longan, lansat). Further, about 63 per cent of the agricultural land is cultivated by tree crops (i.e., coconut, coffee, oil palm, and rubber). The proposed initiative intends to develop a "fruit country" in Chumphon province, by improving agronomic research, marketing, and farming credit.

### Functions

The Chumphon Tropical Fruit Development Initiative (CTFDI) will be composed of three major components: (i) development of tropical fruit through an expanded line of credit, (ii) establishment of a tropical fruit center by expanding the existing horticulture research center, and (iii) promotion of tropical fruit marketing support. CTFDI will also aim at improving the environment through reforestation by fruit tree plantation in the watershed of major rivers in the province.

### Social/Human Considerations

CTFDI will enhance farmers' income and eventually improve the social environment in rural areas through a shift to cultivation of higher-value crops. Further, the proposed tropical fruit center will promote research and training for farmers, traders, and processors of tropical fruit. Thus, CTFDI will greatly contribute to socially-oriented and human-centered development in association with regional agricultural development.

### Principal Features

The tropical fruit development program is proposed to cover an area of 16,000 ha for plantation with an expanded line of agricultural credit. The credit requirement is estimated to be \$128 million in 10 years. The existing Chumphon Horticulture Research Center, which is currently limited to research on coconut, cocoa, and spices, will be expanded to cover research and training for other tropical fruit such as durian, rambutan, mangosteen, and other citrus fruit, by providing additional experts, equipment, and facilities. For tropical fruit marketing support, the establishment of a fruit market is proposed in Thung Tako, where a rural development model is proposed in this Study, and a frozen fruit factory will be newly set up in Chumphon. A market information system is to be improved in parallel.

### Integrated/Related Projects

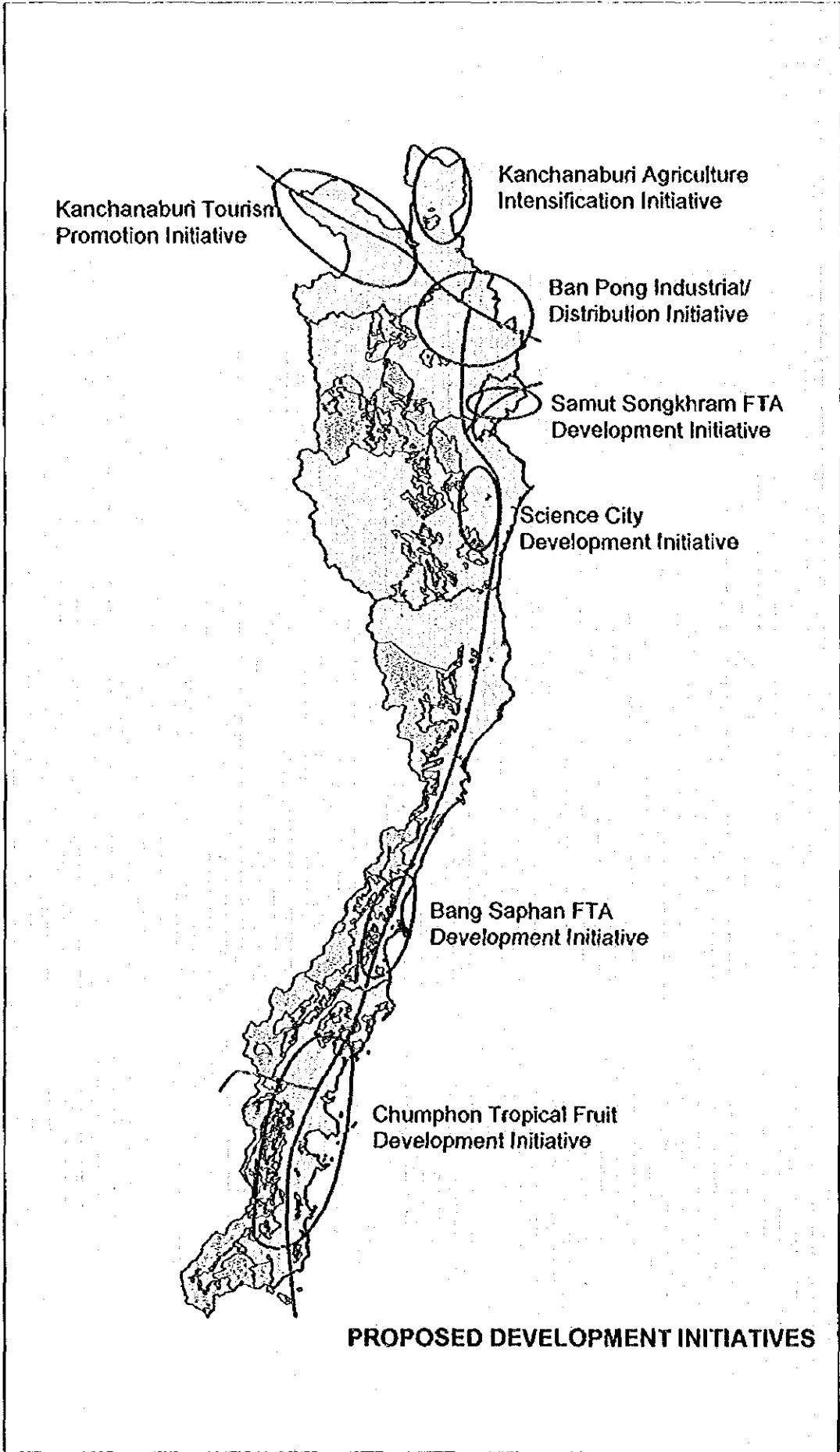
CTFDI will integrate several projects proposed in the agricultural and rural development; i.e., field crop restructuring (AG1), high-value crops for niche markets (AG2), tropical fruit improvement (AG4), tropical fruit center (AG5), agro-processing promotion (AG8), agricultural marketing information (AG11), and rural development model (RD1). An area development approach is proposed to integrate these projects/programs.

### Implementation Plan

CTFDI is proposed to be implemented in 10 years starting from the initial years of the 8th Plan. About 30 per cent of the total coverage (16,000 ha) for the expansion of agricultural credit is envisaged in the first five years, together with the establishment of tropical fruit center, fruit market, and frozen fruit factory. Research and training will be extended in the second five years, along with the second tranche of the credit expansion. (See Volume 6, Appendix III for further detail)

The location of the seven development initiatives is shown on the following page.







### 9.3 Investments in Development Initiatives

A number of the proposed projects have been grouped into seven development initiatives as a focus for implementing the overall development strategy of the WSB, as discussed in the foregoing Section. Investments in these development initiatives are summarized in Table 9.02.

Table 9.02 Budget for Development Initiatives

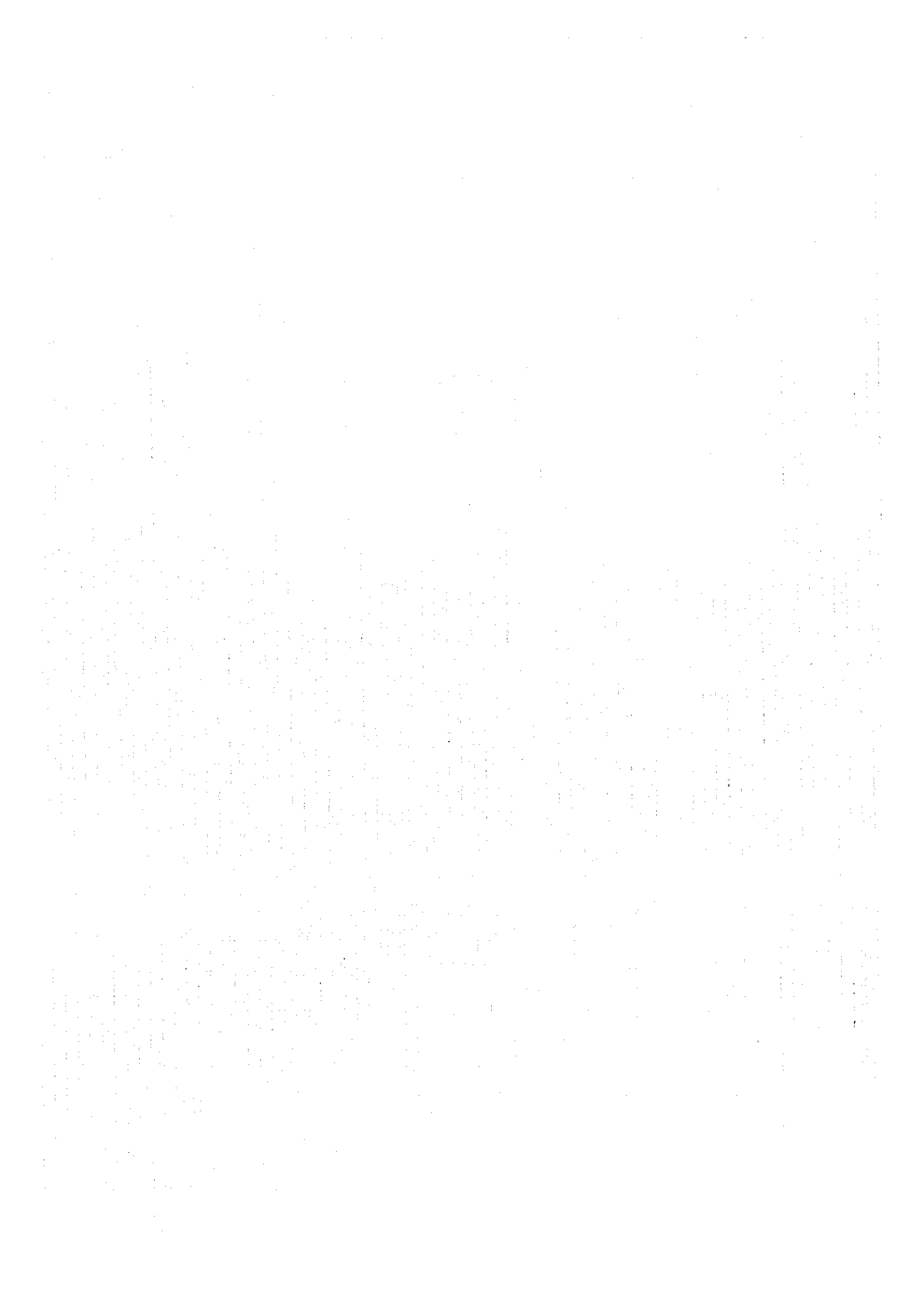
Initiative	Phase I	Phase II	Phase III
1) Kanchanaburi Tourism Promotion	14 (8)	19 (8)	10 (8)
2) Kanchanaburi Agricultural Intensification	15 (5)	- (-)	- (-)
3) Ban Pong Industrial/Distribution	1 (-)	268 (190)	- (-)
4) Samut Songkhram FTA	600 (450)	200 (150)	- (-)
5) Petchaburi Science City	640 (430)	1,064 (760)	540 (450)
6) Bang Saphan FTA	155 (115)	130 (100)	180 (112)
7) Chumphon Tropical Fruit	75 (62)	119 (112)	- (-)
Total	1,500 (1,070)	1,800 (1,320)	730 (570)

Note: Figures in ( ) indicate the amount of investment by the private sector

The seven development initiatives, which span the area of the WSB region and reflect the analysis for the pattern of spatial development, amount in total to \$4,030 million (about 100 billion Baht) and represent about 5.5 per cent of expected investment requirements under the moderate growth macroeconomic scenario. During Phase I, investments in these initiatives will amount to \$1,500 million (37.5 billion Baht), accounting for 9.7 per cent of expected Phase I capital requirements estimated under the macroeconomic scenario.

Phase I investments in the seven development initiatives will account for about 43 per cent of total investments in the projects/programs proposed for consideration under the 8th Plan. They will represent nearly 70 per cent of the non-transport projects/programs.

Further, over 70 per cent of total investment is expected to come from the private sector, and the seven development initiatives are expected to exert a significant catalytic effect on private sector economic activity. This implies investment by the public sector in less than 30 per cent (\$430 million) of Phase I investments. The public sector investments will account for 2.8 per cent of the expected investment requirement under the moderate growth macroeconomic scenarios. From this perspective, it would appear that the proposed seven development initiatives could be readily accommodated in the 8th National Development Plan.



## **Chapter 10 INSTITUTIONAL ARRANGEMENTS**

### **10.1 Institutional Strategy for WSB Development**

#### **(1) Institutional Strategy**

The WSB regional development plan should take advantage or rather make a precedent of administrative reforms currently discussed and undertaken to effect further decentralization. It should also substantiate the socially-oriented and human-centered development advocated by the 8<sup>th</sup> plan and the Thailand Vision 2020. Thus, the following four components should constitute the WSB institutional strategy:

- (i) To utilize the established system for rural/regional development effectively and to attempt early realization of expected reforms,
- (ii) To maximize the role of the private sector in all phases of development from planning and investigation to implementation and management,
- (iii) To enhance local participation starting with development planning with a bottom-up approach, and
- (iv) To emphasize human development not only as a means for better management of development but as a goal of the development process by itself.

#### **(2) Early Reforms**

The management system for development of the WSB region should be established capitalizing as much as possible on the existing development administration while introducing some modifications and new elements. The following may constitute conditions to be satisfied earlier:

- (i) The incorporation of Tambon Councils into the local administration may be accelerated and more Tambon Administrative Organizations (TAOs) established and local participation institutionalized at the tambon level; this would strengthen the bottom-up planning mechanism.

- (ii) Provincial budgeting for development may be changed into a planning oriented one by adopting the planning-programming-budgeting system (PPBS); as a prerequisite, a provincial development plan should be prepared in line with the WSB regional development master plan.
- (iii) The annual plan of each province may be compiled by the Provincial Office of the Governor based on project proposals by tambons and regional government offices prepared according to guidelines provided by the master plan; this may be the first step toward decentralization of budget administration to the Governor.
- (iv) The WSB Development Committee just established should be supported by a permanent management office -- tentatively called the Project Management Unit (PMU) -- serving as its secretariat and Subcommittees to be nominated as necessary.
- (v) The PMU may carry out its functions through the provincial development committees, its main functions being the following:
  - (a) to review and update the master plan occasionally;
  - (b) to review the programs of line agencies, and coordinate and integrate them for submission to the Decentralization Committee;
  - (c) to identify fund sources for implementation of the programs;
  - (d) to initiate integrated area development and multisectoral programs; and
  - (e) to monitor and evaluate the implementation and performance of development programs.

The PMU may develop strong links with the local administration.

- (vi) The Subcommittees may deal with such subjects as the following:
  - (a) public-private cooperation through joint venture and other arrangements,
  - (b) marketing and promotion of private investment opportunities,
  - (c) urban development including promotion of amenity,

- (c) labor relations and management covering migrant labor as well, and
  - (e) social development.
- (vii) The membership of the WSB Development Committee may be expanded to include members from the private sector; subcommittee membership should include appropriate representatives of the private sector depending on the subject matter.

## **10.2 Alternative WSB Management Systems**

### **(1) Alternatives**

The early reforms listed above would call for relatively minor modifications of the existing development administration. The only institution to be newly created is the Project Management Unit (PMU). It would be different from any institution created, for instance, for the Eastern Seaboard in the sense that it would be a permanent management office with its own staff. Initially, the PMU may be established within the existing Central Region Development Center (CRDC) of NESDB. This is one possible alternative.

This alternative has a clear disadvantage. For effective coordination at the regional level, the Head of the PMU should have an administrative rank equivalent to or higher than a provincial governor. At present, however, even the Director of the NESDB Regional Development Center has a rank lower than that of a provincial governor. While this alternative has the advantages of easy establishment and a small incremental staff requirement as the PMU would be based on CRDC of NESDB, the role of the PMU would be limited under this alternative.

A more effective setup would be to place the PMU under the direct line of command of the Prime Minister's Office. If similar arrangements were made for other regional development projects, a national level organization could be established between the Prime Minister's Office and PMU. It may be called the Regional Development Office. It would perform the similar functions as those of the Decentralization Committee but have its own staff.

A third alternative is to establish the PMU as a public corporation with contributions from the private sector. It may be a financing agency for private development activities similar to the Industrial Finance Corporation of Thailand (IFCT). It should be an implementing agency, i.e., a development corporation to undertake major development activities including some infrastructure projects. Naturally, the corporation will have to operate under the supervisory control of the Government, and perform some management functions for development of the WSB region, supported by legislative measures.

Many variants of the alternatives presented above may be conceived. It is recommended that the PMU be established first as the governmental entity under a direct line of command of the Prime Minister's Office. For one of the development initiatives, a development corporation may be established with a private sector contribution. Subsequently, more development corporations may be established to take charge of different development initiatives, or the PMU itself may be restructured into a development corporation.

## (2) Naming and Jurisdictions

The PMU may be called the WSB Development Management Office (DEMO). Prefixing with the Western Seaboard or WSB is desirable for establishing identity and also for clearly delineating the jurisdiction.

A development corporation may also have "Western Seaboard" in its name, i.e., Western Seaboard Development Corporation, for its identity, although it will be in charge of only a small designated area. It is recommended, however, that the proposed development corporation take charge of selected development initiatives formulated by the WSB master plan; specifically the Samut Songkhram FTA Development Initiative, the Petchaburi Science City Development Initiative, and the Bang Saphan FTA Development Initiative. If separate development corporations should be established for respective initiatives, they may be called the Samut Songkhram Development Corporation, the Science City Development Corporation, and the Bang Saphan Development Corporation.

Specifics of the WSB Development Management Office and the WSB Development Corporation are described in the subsequent sections. Setups of the WSB Development Corporation may have variants should separate corporations be established for the development initiatives.



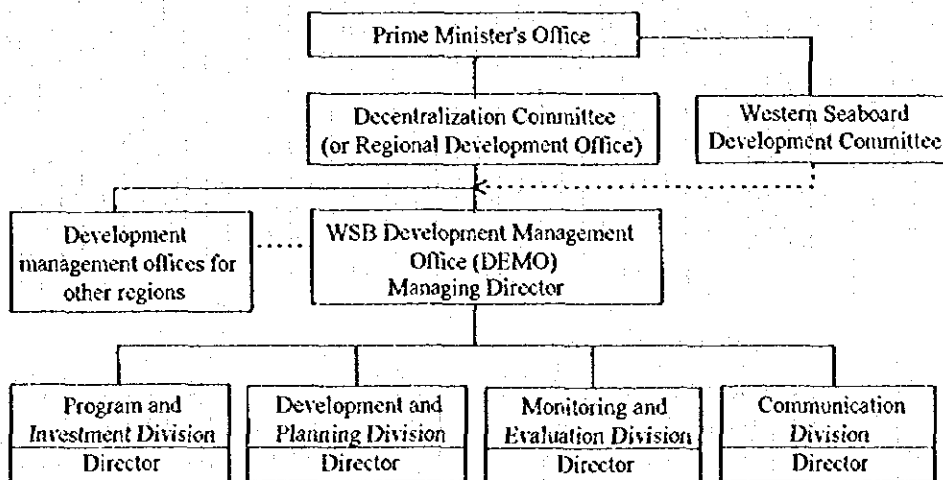
### 10.3 Proposed Organizations for WSB Development and Management

#### (1) WSB Development Management Office

**Head:** The Head of the Western Seaboard DEMO may be called the Managing Director. This post should have an administrative rank equivalent to or higher than a provincial governor (C-10) or regional director of line agencies to facilitate coordination at the regional level. This is quite possible as the DEMO would be placed directly under the Prime Minister's Office.

**Organization:** The DEMO may have the following four divisions: Program and Investment Division, Development and Planning Division, Monitoring and Evaluation Division, and Communication Division. Other divisions may also be established as its operation expands. It may be supervised by the Board of Directors chaired by the Prime Minister.

Organizational Structure of the WSB Development Management Office



**Stage-wise development:** The Managing Director of the Western Seaboard DEMO will be a full-time position to be assumed by a senior regional development planner. Initially, he/she may also assume the directorship of the Development and Planning Division to provide a stronger leadership necessary for these functions as well as to minimize staff requirements. Three more senior staff would be appointed to head the other divisions. Desirable qualifications are financial analysis for the Program and Investment Division,

environmental management for the Monitoring and Evaluation Division, and social assessment for the Communication Division. A limited number of junior experts may be recruited to assist the directors.

Initial tasks: The Western Seaboard DEMO may initially carry out the following broad tasks:

- i) To prepare an action program based on the WSB master plan, designating implementing agencies and identifying funding sources (the action program would serve as a basis for preparing an annual development budget);
- ii) To establish a Project Management System (PMS) by drafting the legislative documents necessary for streamlining functions of government agencies and by organizing a local support and advisory base;
- iii) To initiate specific area development and/or multi-sector programs through master planning, organizational arrangement, and recommendation of institutional measures necessary for implementation including those related to investment promotion and land acquisition;
- iv) To prepare legislative documents necessary for the establishment of WSB Development Corporation, clarifying its mandates with respect to functions/authority and jurisdictional areas;
- v) To develop guidelines for the preparation of development plans and land use plans by local governments and also for the management of development related data; and
- vi) To launch a communication package to disseminate the WSB master plan proposals and to cultivate public acceptance.

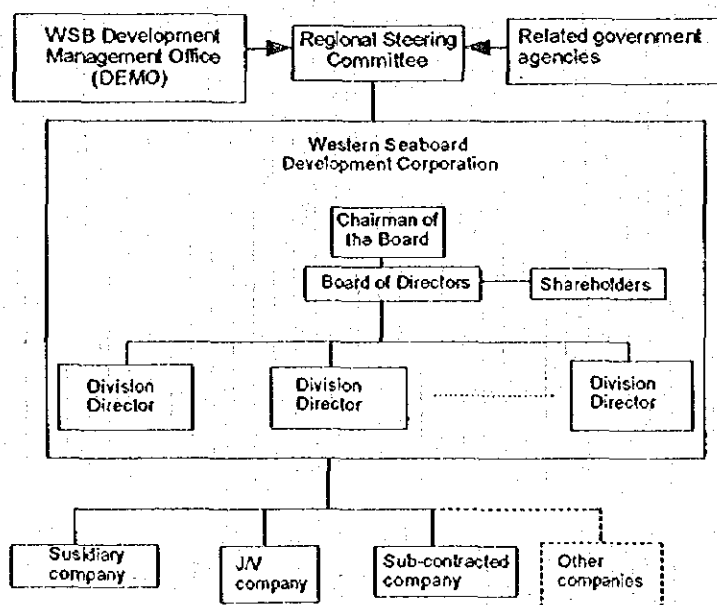
## (2) WSB Development Corporation

Heads: The success of the WSB Development Corporation will depend critically on the Chief Executive. He/She should be an active person with strong character, willing to make this executive position a main part of his/her career. He/She should have strong

personal connections with key government agencies as well as within business circles. He/She will be the Chairman of the Board of Directors. A few directors may be appointed by the Government, while a few other directors may be initially elected at the first meeting of shareholders.

**Organization:** The corporate organization will have to allow for both the management flexibility of a private company and the supervisory control of the Thai government. The Corporation will be headed by the Chairman of the Board and supported by the Board of Directors and shareholders. The supervisory control of the government may be effected by a Regional Steering Committee with members from key government agencies. The chairmanship may be assumed alternately by member agencies. The Committee will have the authority to approve a master plan and projects prepared by the Corporation for its jurisdiction.

**Organizational Structure of the WSB Development Corporation**



**Initial steps:** After the nomination of the Chief Executive Director, the public will be notified to subscribe to the Corporation's shares and other related matters. At the first meeting of shareholders, a few directors may be elected to constitute the Board of Directors together with additional directors to be appointed by the Government. They will prepare the articles of association for the Corporation.

In this initial procedure, the Western Seaboard DEMO will prepare the legislative documents necessary for the establishment of the Corporation, the nomination of the

Chief Executive, and the public subscription for shareholders. Legislative actions necessary for land acquisition may also be initiated by DEMO. The Managing Director of DEMO may be a member of the Regional Steering Committee.

Tasks: The Development Corporation will be an implementing agency for development of a designated area. For coordinated and coherent development, the Corporation will first prepare a master plan for the area to be approved by the Regional Steering Committee. Consistency of the area development master plan with the WSB master plan will be ensured through the Western Seaboard DEMO. Within the master plan, the Corporation will further prepare a land use plan, an infrastructure development plan, and urban design guidelines for individual developments by using external consultancy if necessary.

The main task of the Corporation will be to undertake development by itself or to participate in joint development. For this task, the Corporation will perform the following functions:

- (i) to acquire and own land,
- (ii) to develop land and infrastructure,
- (iii) to build some facilities, and
- (iv) to own and operate some functions.

The Corporation may sell some plots of land to other developers, which will be developed according to the urban design guidelines. It may make a capital contribution to establish a company to develop some plot or facilities. It may engage in a joint venture with the public sector as well.

The Corporation may borrow from external sources as well as from the government. It is desirable that the government guarantee loans taken by the Corporation initially, although this may necessitate additional administrative constraints imposed on the Corporation's activities.

#### **10.4 Recommendation for Administrative Reforms**

The institutional arrangements for the WSB development presented above should take place in the midst of administrative reforms carried out at the national level for further decentralization. Most critical levels of local administration where the early reforms are

necessary throughout the country are province and tambon. Specifically, the following should be realized as key reforms at the respective levels.:

- (i) Decentralization of budget administration to the Governor as the chief executive of the PAO, and
- (ii) Institutionalization of local participation at the tambon level as TAO's are established.

A regional management office like the Western Seaboard DEMO may be established for any region of strategic importance, where a wider regional perspective, long-term vision and inter-provincial consideration are essential for the development. Main functions of such a management office are *planning and coordination at the regional level*.

Direct contribution of the private sector to area development management, as proposed for the WSB Development Corporation, should be introduced in steps. The public-private partnership for such an area development initiative represents a new form of incentive measures to promote private sector participation.



## Chapter 11 RECOMMENDED ACTIONS

As a result of this Study, a number of proposals for regional development of the WSB have been presented and various recommendations have been put forward in this Main Report and in the Sector Reports (Volumes 2 to 10). To ensure effective and efficient execution of the proposed WSB regional development plan, these recommendations have been sorted by agency and institution responsible for execution, as summarized below. It is expected that the recommended measures will be followed by each agency and institution.

### OPM (Office of the Prime Minister)

- Coordinate in finalizing institutional arrangements for regional development under the Decentralization Committee
- Set up more concrete programs for decentralization, including reinforcement of regional offices of the central government agencies

### NESDB (National Economic and Social Development Board)

- Set up an organizational structure for the WSB Development Management Office
- Coordinate the organizing of the WSB Development Corporation and/or development corporations to execute the proposed Development Initiatives
- Incorporate the proposed projects/programs into the Five-year Plans (8th, 9th, and 10th) in coordination with the ministries and agencies concerned
- Initiate multi-sector study programs, including the study of the proposed Science City
- Initiate and coordinate promotion of subregional cooperation with Myanmar, including the Kanchanaburi-Tavoy corridor project
- Coordinate with MOI and IEAT in legal and institutional arrangements for realization of the proposed free trade areas (FTAs)
- Monitor the progress of social development in the WSB as proposed in Project SS1 and suggested in Volume 2
- Monitor the progress of implementation of the proposed projects/programs and Development Initiatives every year, with thorough monitoring to be executed every three years

DTEC (Department of Technical and Economic Cooperation)

- Review the proposed projects/programs and coordinate with the related ministries and agencies in search for technical cooperation by international and bilateral aid agencies

BOI (Office of the Board of Investment)

- Work out measures to promote public-private partnership for regional development, including the proposed Project SS3
- Study and implement new types of development incentives, including incentives proposed under Project ID4, ID6, and TO4

NEPO (National Energy Policy Office)

- Study whether special power tariff reduction could be applicable (Project ID6)
- Work out measures to take at the provincial level for energy conservation, including Projects EP1 and WP2
- Work out measures to promote subregional cooperation with Myanmar for stable supply of natural gas and hydropower, including Project EP5 and the Tenasserim hydropower

EGAT (Electricity Generating Authority of Thailand)

- Further promote demand side management of electric power at the regional level (Project EP3)
- Promote subregional cooperation with Myanmar through power exchange, as well as power generation on the border and in the Myanmar side of the Isthmus (Project EP5 and Tenasserim hydropower)

TAT (Tourism Authority of Thailand)

- Promote the proposed Projects (TO1, TO2, TO5) and the proposed Kanchanaburi Tourism Development Initiative
- Coordinate with local governments and TOT in promoting tourism information systems by Internet (Project TL5)
- Strengthen and vitalize regional offices to promote zone-wise development with specific regional characteristics in tourism attractions
- Prepare action plans/programs for tourism development in the WSB, referring to the master plan prepared by Chulalongkorn University



MOI (Ministry of Interior)

- Improve local governance systems and social partnerships as proposed in Projects SS1 and SS2
- Work out plans to strengthen institutional frameworks for urban development, including reorganization of DTCP or establishment of public corporations
- Set up concrete programs for decentralization with the related budgetary systems, including vitalization of provincial and tambon councils
- Set up a joint committee to promote slaughterhouse modernization (Project AG7) with MOAC(DLD), MOPH, BAAC, and BOI

HPD (Highway Police Department of the Royal Thai Police)

- Promote realization of road traffic safety project (RT3) in cooperation with DOH and other authorities concerned

PWD (Public Works Department)

- Coordinate with OEPP for development of waste water treatment in municipalities as proposed in Project EV3
- Promote development of rural roads (Project RP7) with due consideration of the secondary/feeder roads to be improved by DOH (Project RP5)
- Cooperate with local governments in promoting urban social infrastructure and amenities (Projects UD3 and UD4)

DTCP (Department of Town and Country Planning)

- Strengthen the Department to plan and execute urban and urban cluster development, including Projects UD1 and UD5
- Coordinate with NHA for industrial city development at Bang Saphan, development of the Science City in Petchaburi, and other specific cities (Project UD2)
- Work out city plans for major urban centers, together with basic plans for urban transport, aqueduct, and other urban infrastructure

ARD (Office of Accelerated Rural Development)

- Further promote rural development, including model areas proposed in Project RD1
- Participate in vitalization of provincial and tambon councils, and TAOs

NHA (National Housing Authority)

- Promote planning and execution of specific city development projects, including Bang Saphan industrial city and the Petchaburi Science City

PEA (Provincial Electricity Authority)

- Promote stable power supply in rural and urban areas, including Project EP4

PWA (Provincial Waterworks Authority)

- Promote rural water supply programs, enhancing water supply service ratio
- Participate in water pipeline project from the Tha Sae reservoir to Bang Saphan

Provincial Governments

- Collaborate with MOI in improving local governance systems (Project SS2)
- Collaborate with ARD in promoting rural development (Project RD1)
- Promote improvement of urban social infrastructure and urban amenities in municipalities, including Projects UD3 and UD4
- Cooperate with TAT in promoting tourism information services at the provincial level (Projects TO5 and TL5)
- Cooperate with NGOs in rural development, including cooperation with PDA (Population and Community Development Association) for cooking stove dissemination (Project EP1)
- Strengthen and vitalize TAOs, tambon councils, and provincial councils for project/program planning, budgeting, and implementation
- Cooperate and coordinate with neighboring provincial governments in promoting the proposed Initiatives and urban cluster development at the regional level
- Review and update the provincial investment plans prepared in 1994-95 and prepare action plans/programs for development, referring to this Study

CD (Customs Department of the Ministry of Finance)

- Collaborate with MOI and IEAT in preparing the legal/financial framework to realize free trade areas (FTAs)
- Study and realize special customs tariff to promote subregional cooperation with Myanmar

BAAC (Bank of Agriculture and Agricultural Cooperatives)

- Participate in agricultural development through execution of the proposed projects (AG1 to AG3 and AG5 to AG10)
- Participate in execution of the proposed Kanchanaburi Agricultural Intensification and Chumphon Tropical Fruit Development Initiatives
- Study and realize loans for fruit tree plantation as a program of reforestation and enhancement of the environment, on terms more concessional than the current loans

#### MOAC (Ministry of Agriculture and Cooperatives)

- Coordinate implementation of the proposed projects (AG1 to AG12) in parallel with the promotion of Agricultural Restructuring Programs
- Coordinate implementation of the proposed agricultural development Initiatives
- Formulate a joint committee to accelerate on-farm development in the Greater Mae Klong Irrigation Scheme and the Petchaburi Agricultural Development, and coordinate activities of RID, CLCO, DAE, and BAAC
- With NRDC and ARD, coordinate promotion of rural development associated with agriculture
- Work out plans to strengthen regional offices of the agriculture related agencies (i.e. RID, DAE, CLCO)
- Promote relocation of research laboratories under the Ministry to the proposed Science City
- Promote trade of agricultural products with Myanmar for subregional cooperation

#### RID (Royal Irrigation Department)

- Realize the proposed projects (WR1 to WR5)
- Participate in a joint committee to accelerate on-farm development in the existing irrigation schemes
- Strengthen regional offices to accelerate on-farm development
- Expedite realization of the Tha Sae reservoir and water supply to the Bang Saphan area
- Review, with EGAT, the reservoir operation of the existing dams/reservoirs to ensure maintenance flow for salinity control and other purposes in the downstream reaches

#### RFD (Royal Forestry Department)

- Realize the reforestation program, including mangrove reforestation (EV2)
- Cooperate with MOAC and BAAC in promoting plantation of fruit trees as a reforestation program with loans on concessional terms
- Cooperate in realizing the proposed Science City in Petchaburi (economic forest area)

#### DOF (Department of Fisheries)

- Execute the proposed projects AF2 and AF3
- Cooperate with OAE in studying the proposed project AF1
- Work out measures to regulate overfishing in the Gulf of Thailand and promote sound management of fishery and coastal resources for sustainable use

DA (Department of Agriculture)

- Promote organic farming for environment-friendly agriculture (EV1)
- Take the lead in the implementation of the proposed Chumphon Tropical Fruit Development Initiative

DAE (Department of Agriculture Extension)

- Collaborate in realizing the proposed projects (AG1, AG2, WR1, Initiative 2)
- Participate in a joint committee to accelerate on-farm development in the existing irrigation schemes

OAE (Office of Agricultural Economics)

- Propose optimum cropping patterns to be applied in the WSB, in view of crop diversification and enhancement of productivity
- Initiate study of coastal fisheries rehabilitation (AF1) for small-scale fisherfolk
- Coordinate the study on demand of tropical fruit and high-value crops

CLCO (Central Land Consolidation Office)

- Review Land Consolidation Act to promote land consolidation in the existing irrigation schemes
- Review the applicability of intensive land consolidation in the existing irrigation schemes in the WSB
- Participate in a joint committee to accelerate on-farm development, and collaborate with RID in land consolidation

MOI (Ministry of Industry)

- Review and study industrial policies and promote the proposed projects (ID4, ID5, ID6)
- Further promote the rural industrialization program (ID3)
- Work out, in collaboration with IEAT, a legal framework for realization of free trade areas (FTAs)
- With MOL, coordinate the promotion of industry-based training (ED3)
- Promote relocation of research laboratories under the Ministry to the proposed Science City

DIP (Department of Industrial Promotion)

- Promote realization of the proposed projects (ID3, ID4, ID5)

- Work out a new system to promote recycling industry and reduce the environmental impact of the existing industries

IEAT (Industrial Estate Authority of Thailand)

- Collaborate with MOI in formulating a legal framework for realization of FTAs, and promote realization of FTAs at Bang Saphan and Smut Songkhram
- Initiate a study on the Ban Pong industrial/distribution development (Initiative 3)
- Lead implementation of the Tha Sae - Bang Saphan water pipeline project, and cooperate with RID for the earliest realization of the Tha Sae reservoir
- Participate in expansion of general cargo berths at Bang Saphan (Prachuap) port
- Realize the industrial estate in Bang Saphan under public-private partnership

PTT (Petroleum Authority of Thailand)

- Review possibility of downstream gas industries in Ratchaburi (Volume 7, Appendix 1)
- Review and work out alternative alignments for a pipeline from the Yatagon gas field, in light of the Kanchanaburi-Tavoy corridor and other east-west corridors

MOTC (Ministry of Transport and Communications)

- Establish policies to promote public-private partnership for development of transportation and telecommunications
- Set up policies to expand general cargo berths at Bang Saphan (Prachuap) port and to develop the area surrounding Pathiu airport
- Coordinate the realization of a multi-modal transport corridor (highway/railway) along the outer-outer orbital route between Ban Pong and Ayutthaya/Lopburi
- Coordinate the setting up of policies for transportation and telecommunication linkages with Myanmar, particularly in the Tavoy area

LTD (Land Transport Department)

- Promote implementation of the proposed projects (RT1 and RT2)

DOA (Department of Aviation)

- Promote implementation of the proposed projects (AT1 to AT4), particularly the marketing of Pathiu airport

HD (Harbor Department)

- Promote implementation of the proposed projects (WT2 to WT7, and WT9)

DOH (Department of Highways)

- Promote implementation of the proposed projects (RP1 to RP6, and RP8 to RP12)
- Cooperate with HPD in promoting road traffic safety

PTD (Post and Telegraph Department)

- Set up policies to accelerate the expansion of telecommunications in rural areas
- Coordinate with other Ministries and agencies (MOAC, MOPH, TAT, MOE) in introducing information technologies for regional development (Projects TL3 to TL6)

TOT (Telephone Organization of Thailand) and  
CAT (Communications Authority of Thailand)

- Promote implementation of the proposed projects (TL1 to TL6)
- Facilitate installation of teleports in the FTAs and the Science City

SRT (State Railway of Thailand)

- Study and promote implementation of the proposed projects (RW1 to RW7)

MOSTE (Ministry of Science, Technology and Environment)

- Coordinate the implementation of the projects in the environment sector (Projects EV3 to EV5)
- Cooperate with NESDB in studying the Science City development initiative, through the National Science and Technology Development Agency (NSTDA)
- Support the promotion of industrial R&D and new investments in recycling industries (ID5, ID6)

OEPP (Office of the Environment Policy and Planning)

- Promote implementation of the proposed projects (EV3 and EV4)
- Study and promote implementation of a composting plant in the Central WSB
- Promote amenity preservation in the tourism centers (TO2)
- Expedite approval of EIA on the construction of the Tha Sae dam/reservoir
- Work out and promote the environmental action plans at the provincial level

PCD (Pollution Control Department)

- Continue monitoring of water quality along the major river courses, and coordinate with OEPP for promotion of waste water treatment in major municipalities in the WSB

- Promote implementation of sanitary landfill to substitute open dumps, and establish a composting plant

DEQP (Department of Environmental Quality Promotion)

- Promote the implementation of an environmental research center (EV5)
- Work out programs to promote environmental advocacy at regional and national levels

DEDP (Department of Energy Development and Promotion)

- Promote implementation of energy substitution (Project EP2)

MOC (Ministry of Commerce)

- Cooperate in promotion of the project implementation (AG8 and AG11)
- Cooperate in promotion of trade with Myanmar through the east-west corridors proposed in the WSB

MOL (Ministry of Labor and Social Welfare)

- Cooperate with MOPH in setting up a regional occupational health center (PH2)
- Promote, through Department of Skills Development, implementation of industry-based training centers (ED3)

MOE (Ministry of Education)

- Promote implementation of the proposed projects (ED1, ED4)
- Coordinate promotion of industry-based training through the Department of Vocational Education (ED3)
- Support the realization of information highway for education (TL6)
- Strengthen Rajabhat Institute, Petchaburi, including the recruitment of lecturers (Thai and foreign) and the offering of courses to the public
- Upgrade non-formal education and management

MOUA (Ministry of University Affairs)

- Promote implementation of the proposed project (ED2) and setting up a university in the proposed Science City
- Facilitate relocation of research institutes related to the universities to the proposed Science City

**MOPH (Ministry of Public Health) and**  
**PHO (Provincial Health Office)**

- Promote implementation of the proposed programs (PH1 to PH5)
- Assist in promoting a medical information system (TL4)
- Facilitate relocation of medical laboratories to the Science City
- Promote improvement of hospital management, since most public hospitals suffer from budgetary shortage
- Upgrade training programs for teachers in medical schools and promote more technical training for health personnel.









JICA