

Thailand's Future Development and Water Management Plans



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Thailand Investment Seminar

Hilton Hotel, Nagoya

1. Flood Impact

- 2. Thailand Flood Relief, Rehabilitation and Prevention Mechanisms**
- 3. 5 Strategies for reconstruction and future development**
- 4. Financing source for Reconstruction and Future Development**

GDP Growth (%)

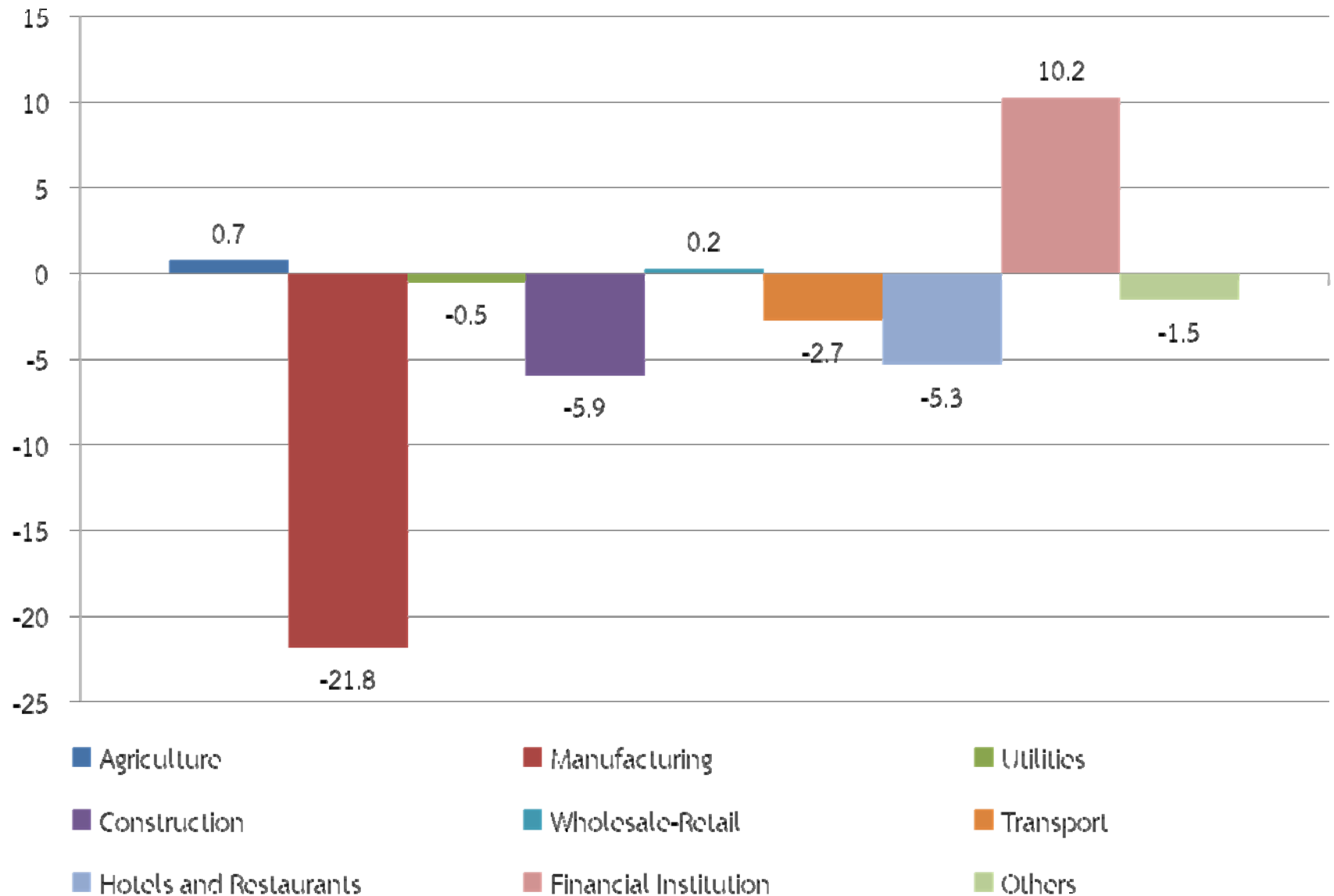
	2010	2011	2011			
			Q1	Q2	Q3	Q4
GDP	7.8	0.1	3.2	2.7	3.7	-9.0
GDP (Seasonal Adjusted)	-	-	1.5	-0.5	0.8	-10.7
Agricultural Sector	-2.3	3.8	7.6	6.7	0.5	0.7
Non-Agricultural Sectors	8.8	-0.3	2.8	2.4	3.9	-10.1

❖ After seasonal adjustment, the Thai economy contracted by 10.7 percent compared to the previous quarter, and GDP in 2011 expanded by 0.1 percent.

In the 4th quarter, Thai economy contracted by 9.0 percent, mainly due to severe flood during Oct. – Nov 2011. The significant damages include:

- ❑ Production chains of Manufacturing sector and logistics systems
- ❑ Contraction of Household expenditure due to high inflation, slowdown in revenues of agriculturalists. Decline in investor's confidence.
- ❑ Contraction of investments in construction and machinery and equipment sector
- ❑ Contracted value of Thailand's exports due to the damage of production bases and the economic slowdown of trading partners.
- ❑ Decline in the number of foreign tourists.

GDP growth by sector



Flood Impact

The flood damages in agricultural, manufacturing and service sectors affected in the reduction of 328,154 Mil. Baht of Thailand's GDP (current price) and contributed to 3.7 percent decrease in economic growth. As a result, it is expected that Thailand's overall economic growth in 2011 will be recorded merely 0.1 percent, which is lower than the initial estimated growth of 3.8 percent

Sectors (Million Baht)	Impact on Income	Impact to GDP (current price)	Impact to GDP (1988 price)
1. Agriculture	42,795	27,767	9,369
- Crops + Livestock	40,143	26,258	8,070
- Fishery	2,902	1,509	950
2. Manufacturing	512,502	227,477	122,444
3. Wholesales+Retials	31,164	23,948	10,938
4. Electricity + Water Supply	33,223	6,837	4,131
5. Tourism	31,881	13,709	5,001
6. Construction + Real Estate	28,172	9,297	5,408
7. Transports	63,750	19,119	14,409
6. Damage Value (1-7)	743,487	328,154	171,699
7. Impact to GDP (%)			3.7

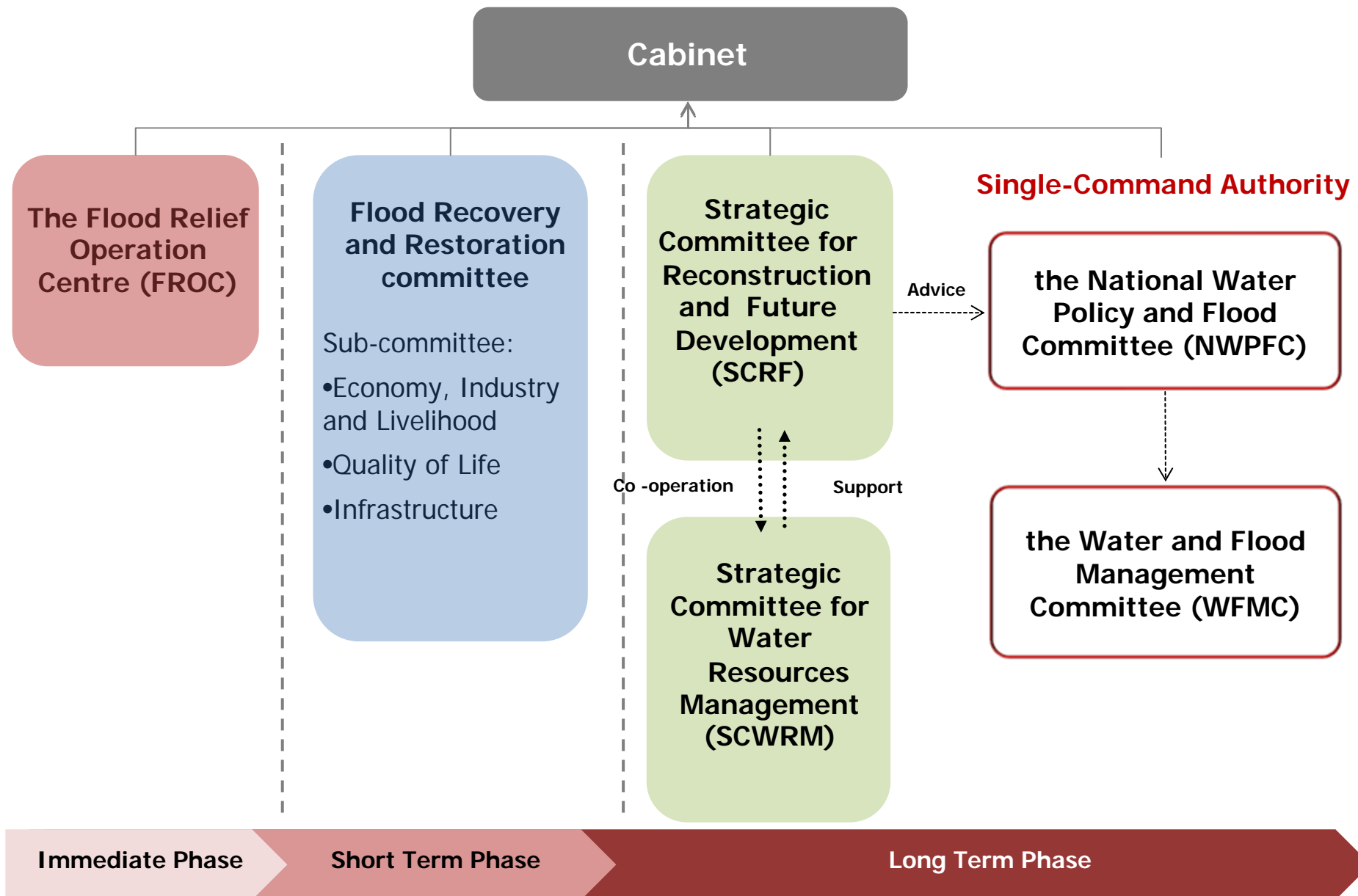
1. Flood Impact

2. Thailand Flood Relief, Rehabilitation and Prevention Mechanisms

3. 5 Strategies for reconstruction and future development

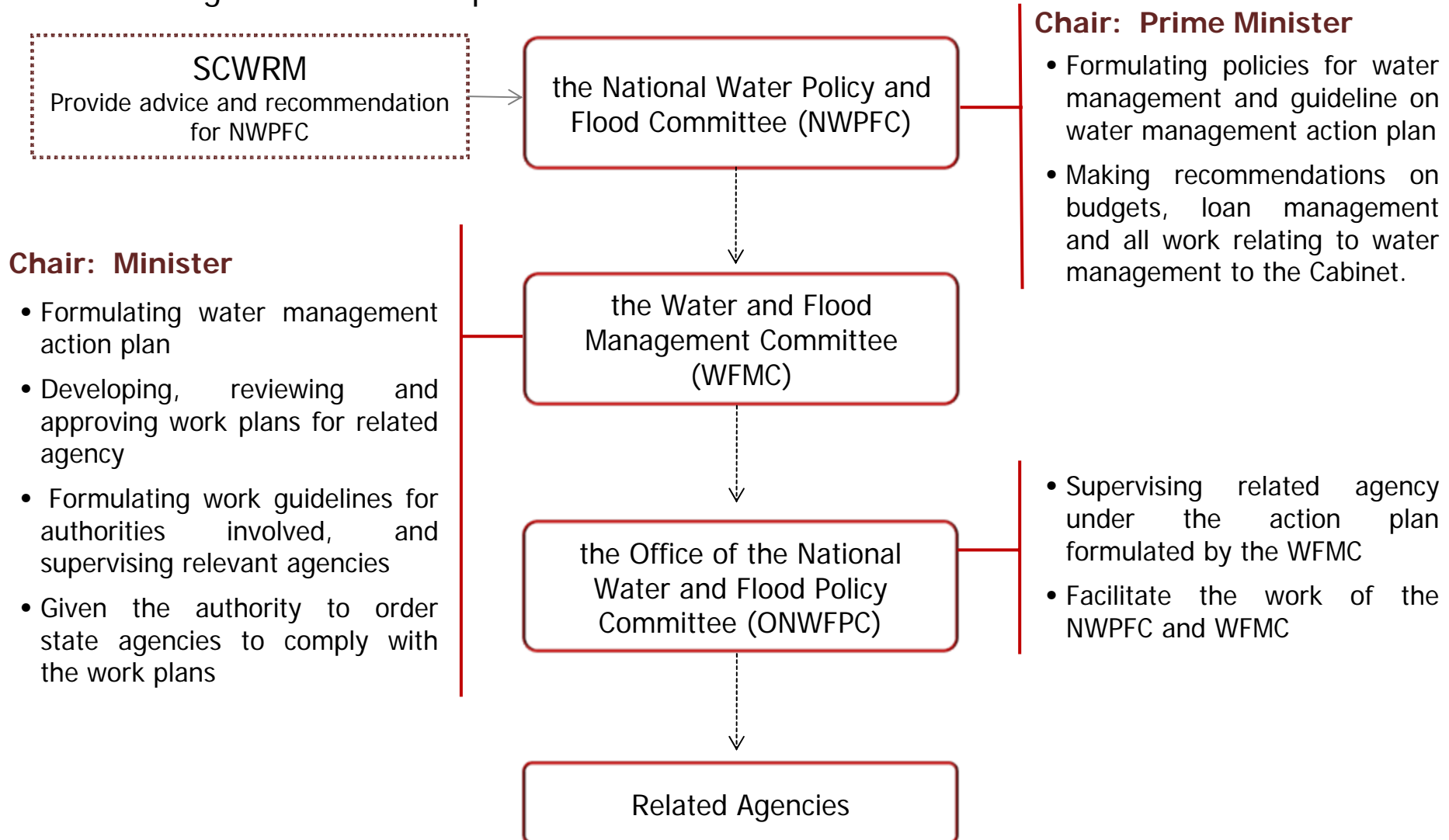
4. Financing source for Reconstruction and Future Development

Thailand Flood Relief, Rehabilitation and Prevention Mechanisms



Long Term Phase Mechanisms

The Cabinet approved the establishment of a **single-command authority** for the country's water management and flood prevention.



1. **Flood Impact**
2. **Thailand Flood Relief, Rehabilitation and Prevention Mechanisms**
3. **5 Strategies for reconstruction and future development**
4. **Financing source for Reconstruction and Future Development**

5 Strategies for reconstruction and future development

1. Water Resource Management



- Prevent and mitigate the impacts from big to medium-affected floods and to create confidence, ensure stability, increase income of Thai people

2. Restructuring of the production & service sectors



- Prevent real sector from risks of natural disasters & crises
- Enhance major industries towards sustainable competitiveness

3. Development strategy for new economic areas



- Distribution of economic prosperity of the country & regions
- Develop economic corridor at the sub-regional level
- Create cluster with neighboring countries and Southeast Asia Region (EWEC/NSEC/SEC/GMS)
- Develop border economic zones and border towns
- Enhance connectivity with neighboring countries based on mutual benefits

4. Infrastructure development (2012 – 2020)



- Enhance current transport network (land, air and marine)
- Enhance energy security of the country
- Develop telecommunication infrastructure
- Upgrade public utility infrastructure for industries and people

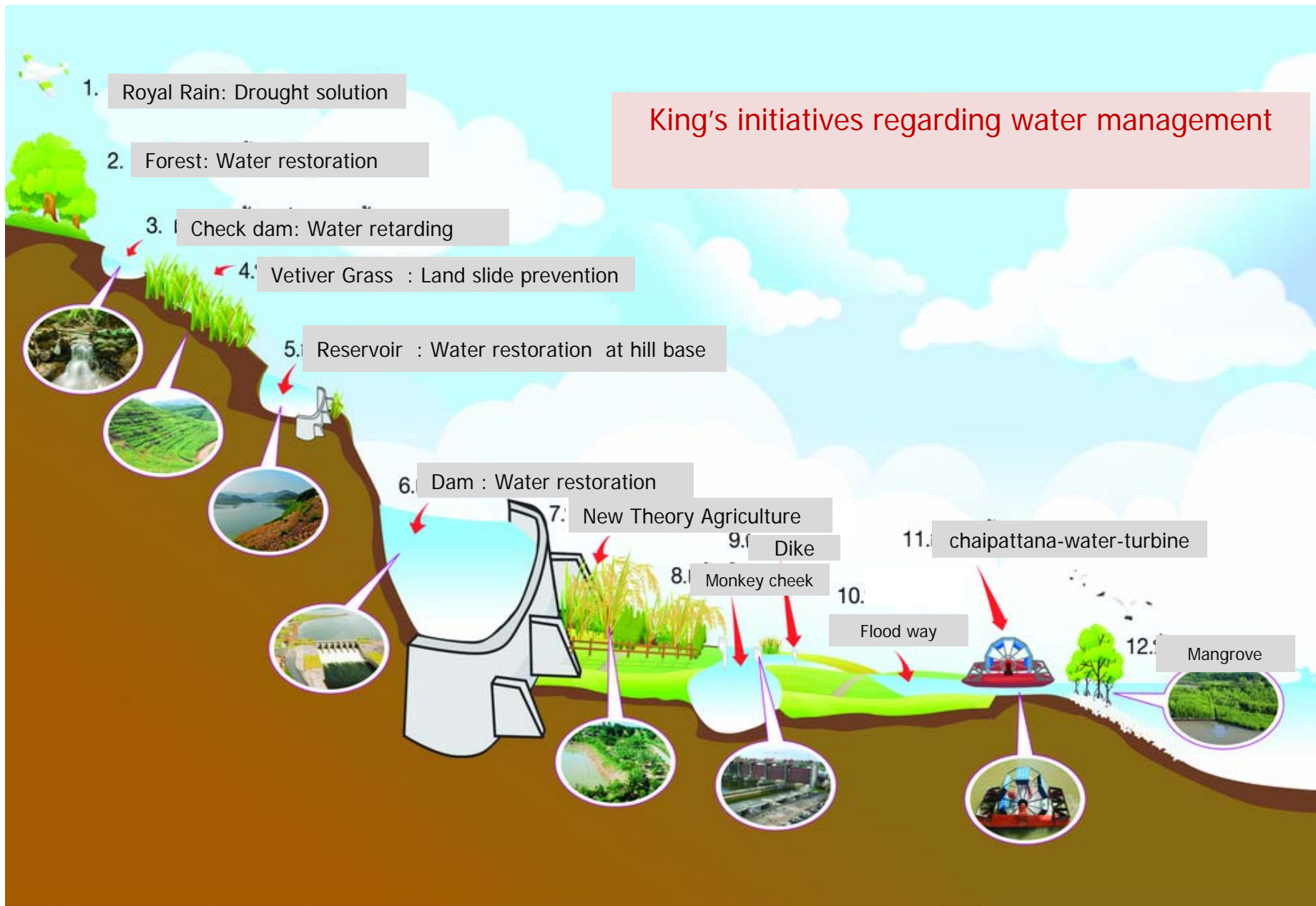
5. Insurance system development



- Create confidence & awareness of insurance system
- Establish standards and service system of claiming rights for insurers in all sectors
- Reform rules and regulation of insurance system
- Set up an Insurance Pooling Fund

Strategy 1: Water Resource Management

King's initiatives regarding water management



Current Status



	Saharattana-Nakorn	Rojjana	Baan-Wah (Hi-Tech)	Bang Pa-in	Nawa nakorn	Bang Kadee	Factory Land	Total
Number of Factory	46	220	153	93	230	44	93	879
Fully re-operating (100%)	9	2	39	12	4	4	73	143 (16%)
Partially re-operating	4	59	9	33	86	12	20	223 (25%)
Not yet re-operating	30	137	95	45	137	28	-	472 (54%)
Close down business	3	22	10	3	3	-	-	41 (5%)
Remarks	Expected to re-operate by April 2012	Expected delay from the desired plan and expected to re-operate by Q2/2012		Expected to utilize 70% of total capacity by Q1/2012	Electricity and water supply have been resumed to normal situation.		Remaining factories are in the process of setting up new machines.	

Source: Ministry of Industry, as of 9 Feb 2012

Flood Dyke Construction Plan: soft loan facilities by government saving bank has been set up (in the amount of 15,000 million baht) for affected industrial estates



Saharattana-Nakorn

Rojjana

**Baan-Wah
(Hi-Tech)**

**Bang
Pa-in**

**Nawa
nakorn**

**Bang
Kadee**

**Factory
Land**

Types	In the designing process	Earth dyke with concrete plate	Earth dyke	Earth dyke and concrete dyke	Compact ed earth- concrete dyke	Earth- filled concrete dyke	Concrete sheet pile
Height from sea level (Metre)	6.50	6.05	5.40	6.00	5.50	5.00	5.50
Investment (Mil Baht)	240	2,030	350	700	540	580	700
Duration of Construction	5 months (Apr - 31 Aug 2012)	8 months (16 Feb -30 Sep 2012)	6 months (1 Mar - 30 Aug 2012)	Soil dam (Jul 2012) Concrete dam (May 2013)	7 months (15 Feb - 31 Aug 2012)	7 months (10 Feb – 30 Aug 2012)	-

Source: summarized by NESDB

Strategy 2: Restructuring of the production & service sectors

Restructuring for preventing real sector from risks of disasters and crises

- ❑ Supporting the business sector, particularly key industries to set up a system that can efficiently prevent, respond and be resilient to disasters and crises.
- ❑ The approach of Business Continuity Management (BCM) shall be applied to minimize risks and maintain operations of industries' supply chains in the crisis

Restructuring for enhancing competitiveness of the production and service sectors towards more advanced technology and higher value creation


- ❑ Continuously promoting eco-industrial town development and environment revival in major industrial areas as well as supporting industrial cluster development
- ❑ Encouraging the development of modern industry based on creativity, local wisdom and innovation
- ❑ Developing enabling factors to promote efficiency and standard and support the application of STI in creating high-value added manufacturing products
- ❑ Encourage and support production linkages between large and local industries and widen industrial development in regions through linkages between SMEs / OTOP entrepreneurs and large industrial companies

GMS Economic Corridors



1. **The land use policy** shall focus on promoting the distribution of economic prosperity of the country and throughout all regions based on the difference in capability of each area
2. **The development of international transport and logistics networks** under the existing and future development plan and integration of the linkages within the sub-region and between sub-regions, as well as the cooperation under the Master Plan on ASEAN Connectivity
3. **Development of Thailand's regions shall be pursued to connect with neighboring countries and Southeast Asia.** The major development schemes include the EWEC, NSEC, and SEC under the GMS Scheme
4. **Development of border economic zones and border towns** shall be undertaken to serve as an economic gateway connecting with neighboring countries.


Strategy 3: Development strategy for new economic areas



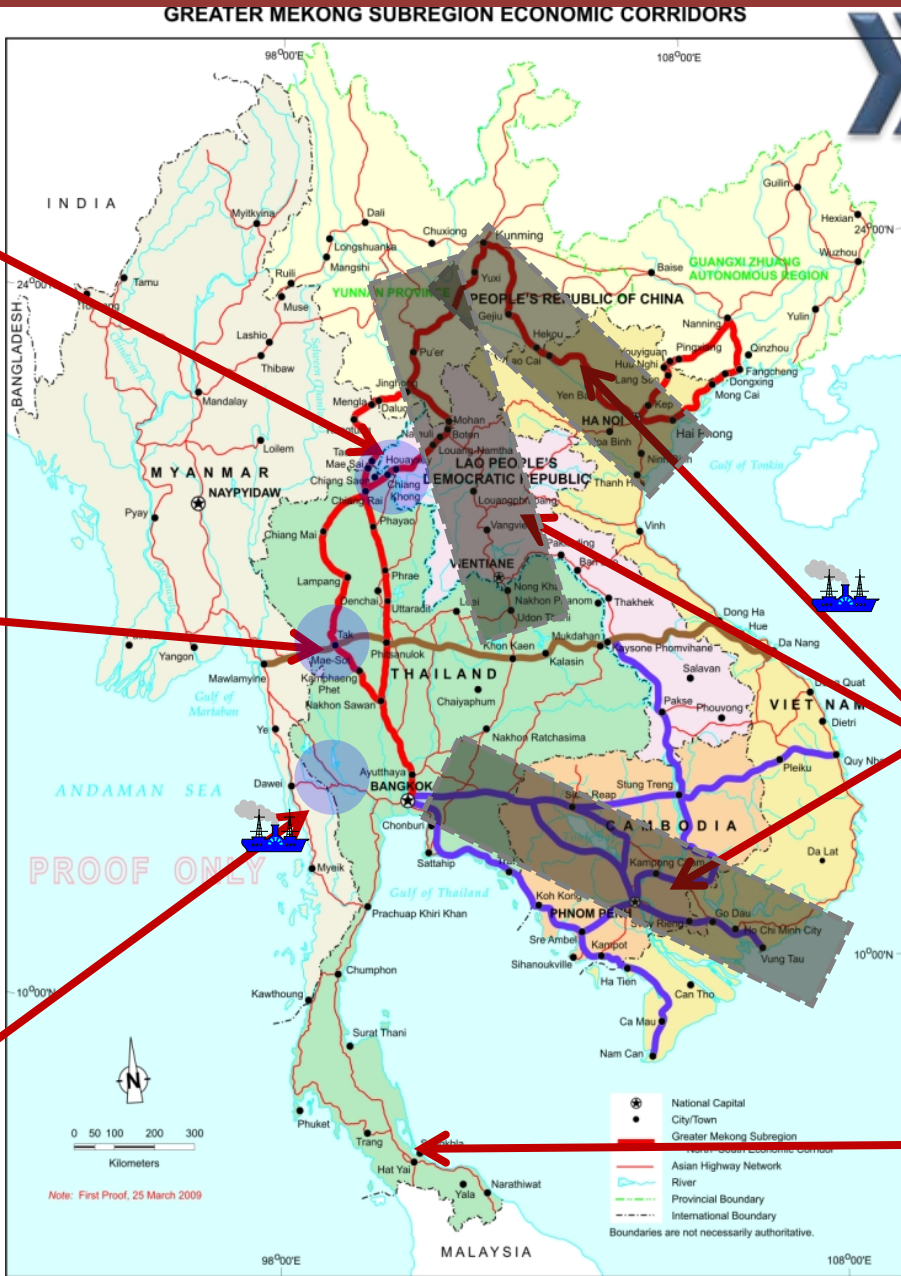
Trilateral Exchange in Traffic Right between Thailand – Laos PDR – China and 4th Mekong River Crossover Bridge



Border Economy Development



Deep Sea Port and Dawei Industrial Estate Development





- Thai – Laos – China High-speed Train
- Train connecting sub-region Singapore - Kunming



Hat Yai – Sadao Motorway

Strategy 3: Development strategy for new economic areas

East West Economic Corridor



The Myawady - Kokariak-Thaton road (189 km) – first 18 km road development financed by Thailand.

- detail design of the 40 km uphill portion completed with Thailand's assistance

Construction of 82 km section of the R11 route in Lao – Thailand's financial assistance costs 1,392 million Baht



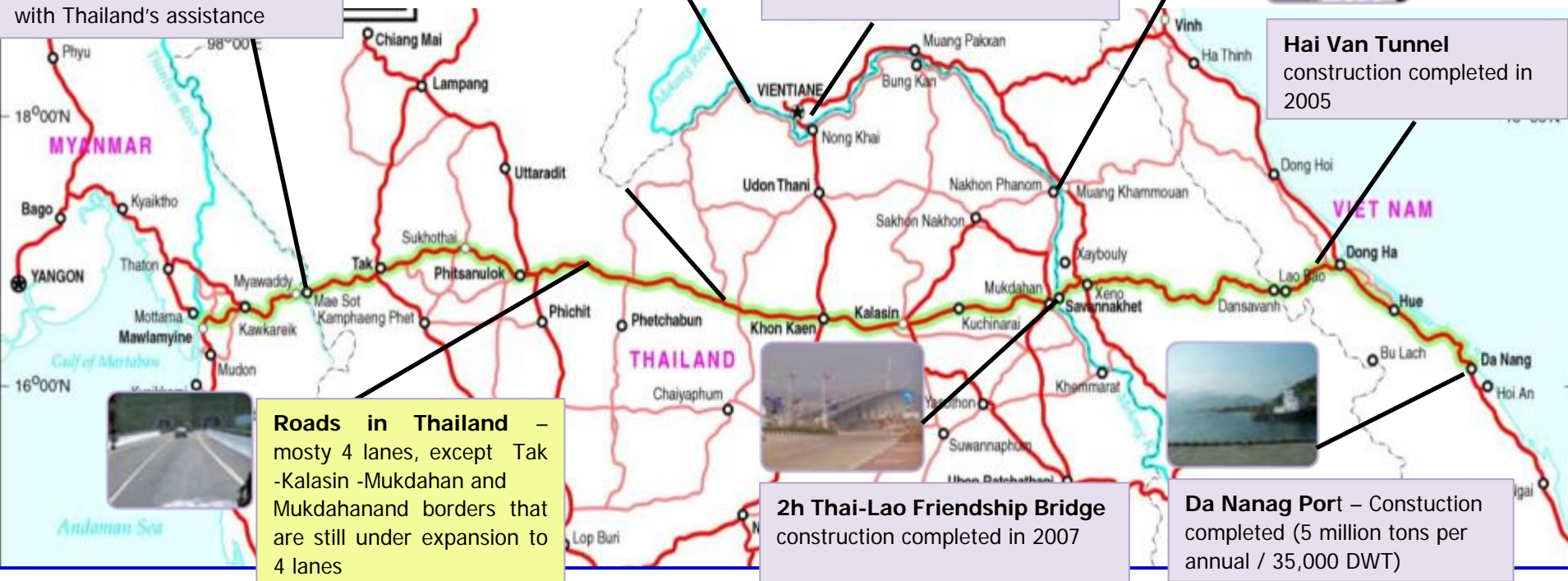
Nongkhai - Ta Na Laeng Rail route – Thailand assisted in helping financing 6 km of the route to completion in 2009



3rd Thai-Lao Friendship Bridge at Nakhon Phanom province, construction completed in 2011



Hai Van Tunnel construction completed in 2005



Roads in Thailand – mostly 4 lanes, except Tak -Kalasin -Mukdahan and Mukdahan and borders that are still under expansion to 4 lanes

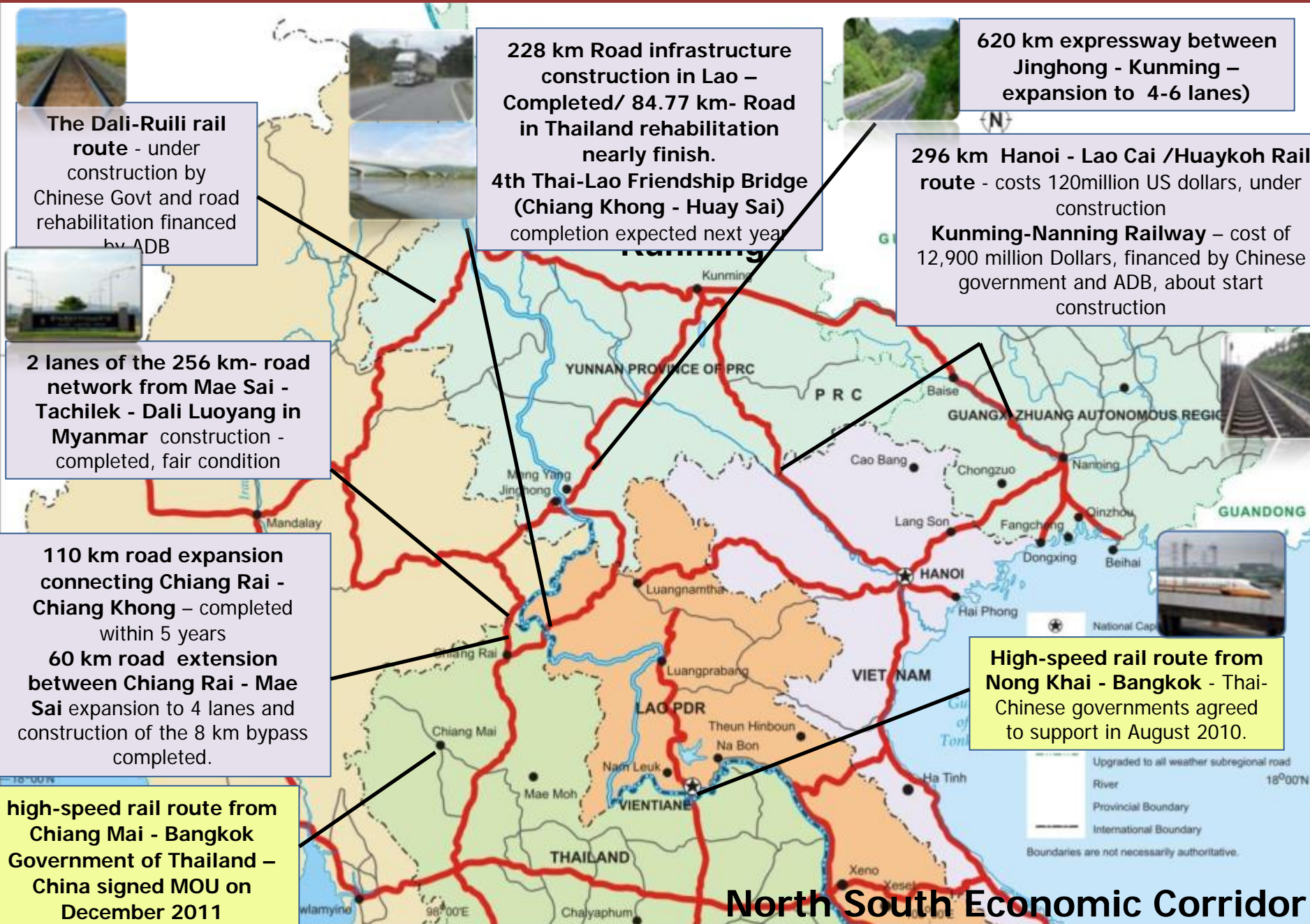


2h Thai-Lao Friendship Bridge construction completed in 2007



Da Nang Port – Construction completed (5 million tons per annual / 35,000 DWT)

Strategy 3: Development strategy for new economic areas



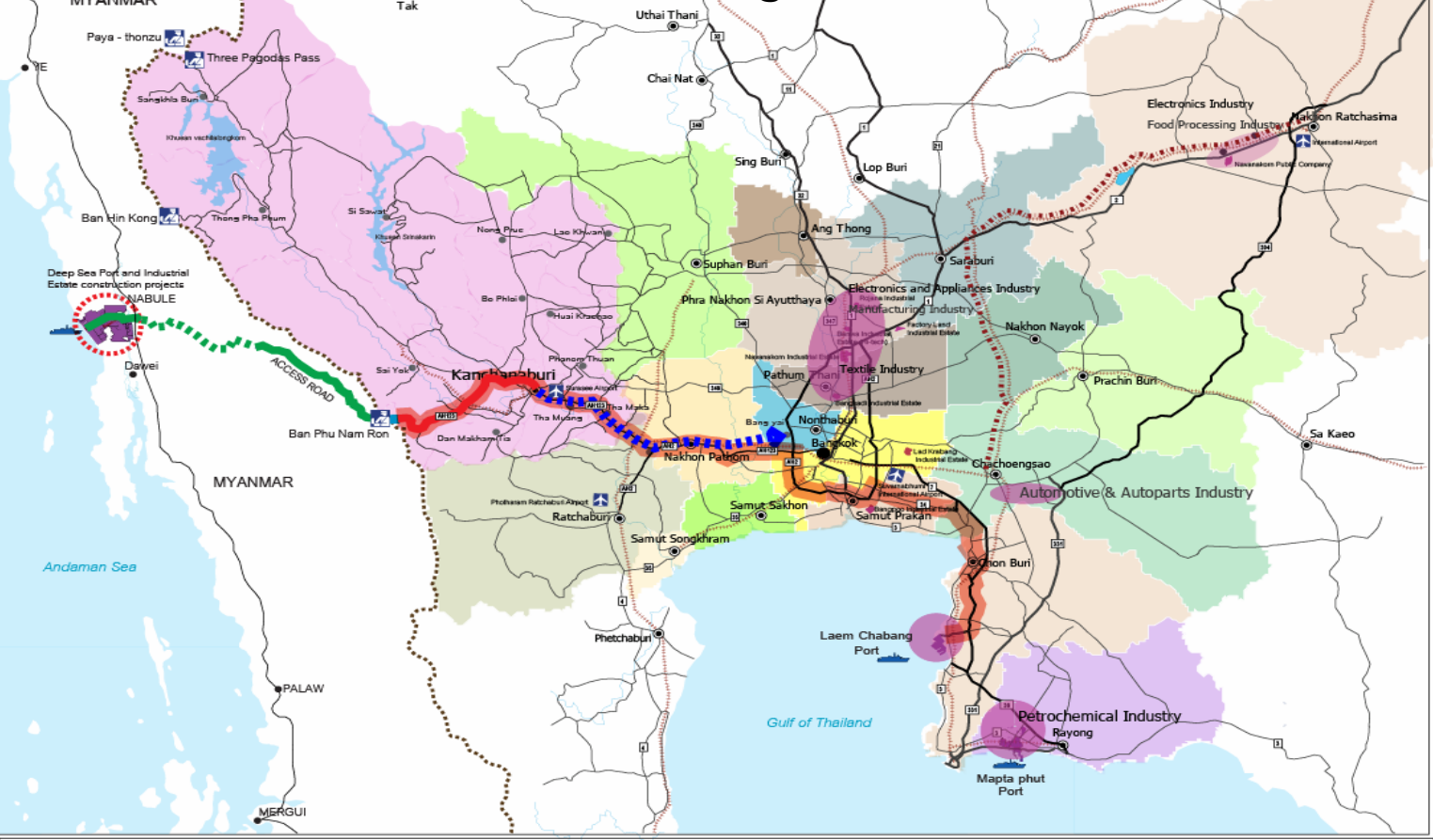
Strategy 3: Development strategy for new economic areas

Southern Economic Corridor



Strategy 3: Development strategy for new economic areas

Road Link between Laem Chabang Sea Port and Dawei Sea Port



- ACCESS ROAD between Dawei - Pu Nam Ron
(the middle section is under trail blazing process)
- Road between Pu Nam Ron - Thai-Myanmar border, total length of 4.4 Km. (the last 600 m. under construction)
- Road between Kanchanaburi - Pu Nam Ron, total length of 76 Km. (completed)
- Motorway NO.81 between Bangyai - Kanchanaburi, total length of 98 Km. (yet to be constructed)
- Road between Thai-Myanmar border - Pu Nam Ron - Route 323 - Route 4 - Route 338 -
- Western Ring Road - Southern Ring Road - Route 34 - Route 7 connected to Laem Chabang Port
- Border Crossing
- Plande Dual Track Railway Alignment : Chachoengsao - Saraburi - Nakhon Ratchasima

Remarks :

Total of 43 border crossings at Kanchanaburi

The distance between NABULE and Dawei is 34 Km.

ข้อมูลจาก ITD (13 ธ.ค. 2553) / กรมการขนส่งทางบก

จัดทำโดย สำนักยุทธศาสตร์และกิจการวางแผนพัฒนาพื้นที่ / สศพ. มี.ค. 2555

Strategy 4: Infrastructure development (2012 – 2020)

1. Transport Infrastructure Development:

-Development of land transport network to connect main economic zones and cities in the region and neighboring countries including road networks rail networks and mass transit networks within the capital and perimeters.

-Air Transport Infrastructure Development

-Sea Transportation Infrastructure Development

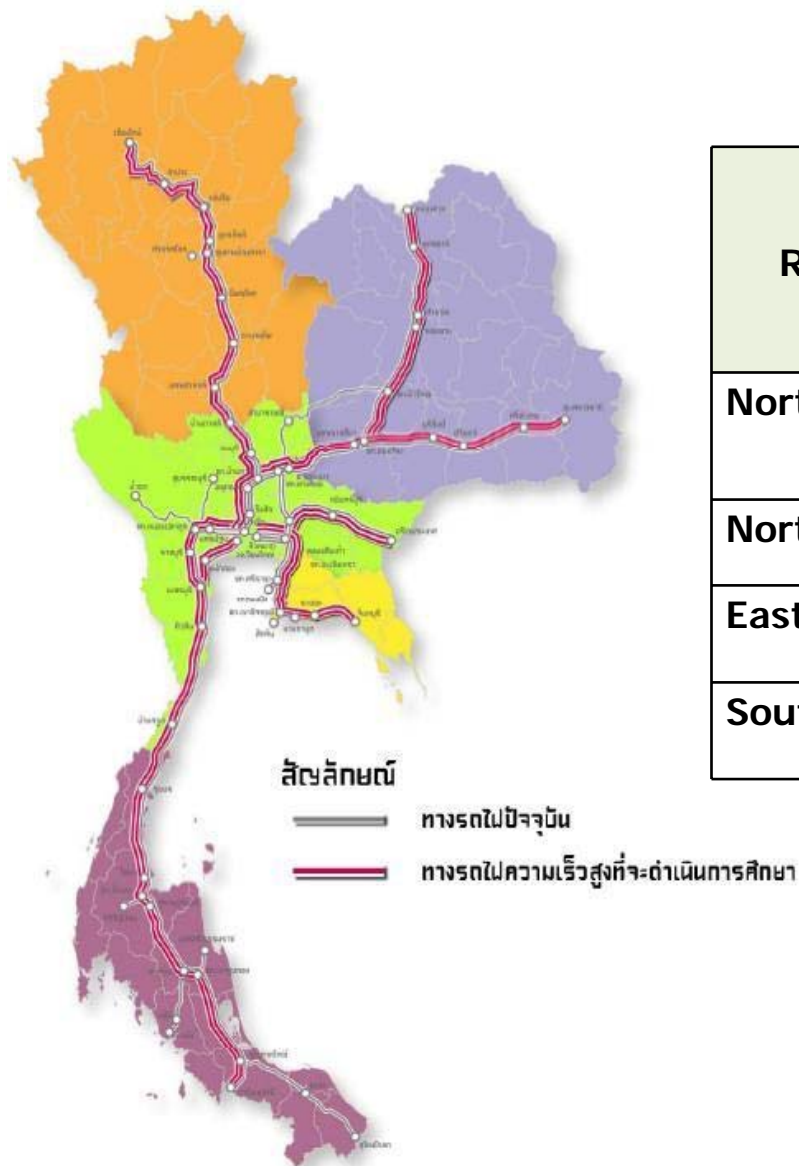
2. Energy Security: New sources of energy, both domestic and international need to be sought and developed, especially through the establishment of collaborations in the area of energy resource development with potential neighboring countries on the west of Thailand (Dawei)

3. Telecommunications Infrastructure Development: to provide high-speed internet services covering all areas in the country, creating more opportunity for the public to get the services. Also, the Government Information Network (GInet) needs to be developed for support large and small and medium enterprises (SMEs) to efficiently utilize it to improve their competitiveness and generate greater income.

4. Public Infrastructure Development: The water supply system in rural areas and economic zones as well as the waste water management system shall be further developed to create efficient and worthwhile utilization resources for the consumption of population and the production and service sectors.

Strategy 4: Infrastructure development (2012 – 2020)

High Speed Train

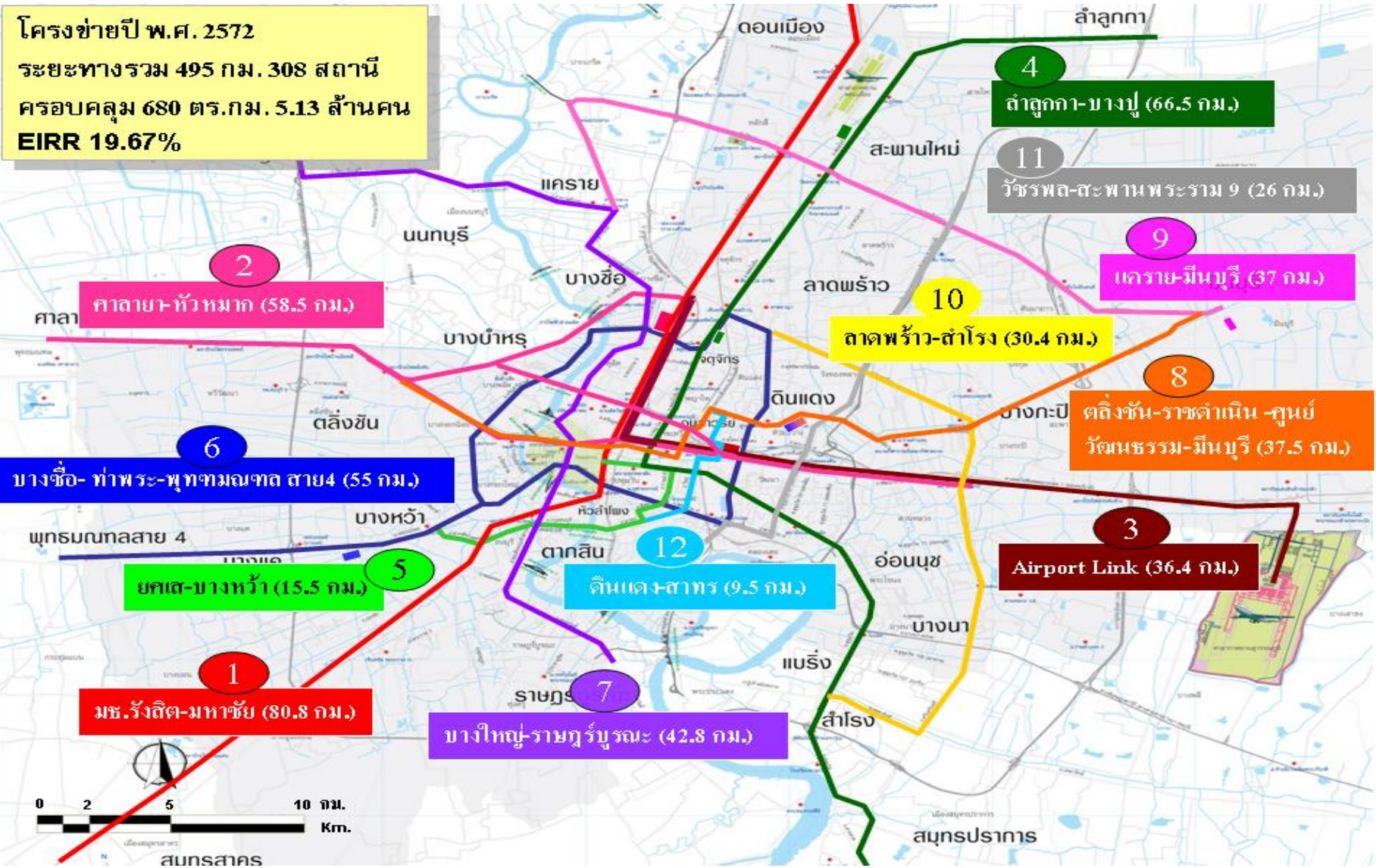


Route	From	To	Distance (KM)	Amount (Mill. USD)
North	Bang Sue	Chiang MAi	745	7,300
North-East	Bang Sue	Nong Kai	615	3,100
East	Makkasan	Rayong	330	2,300
South	Bang Sue	Huahin	225	2,600



Strategy 4: Infrastructure development (2012 – 2020)

Metropolitan rail system



Strategy 4: Infrastructure development (2012 – 2020)

Express way between major cities



- ครม. มีมติอนุมัติ 22 เมษายน 2540
- 13 เส้นทาง
- ระยะทาง 4,150 กิโลเมตร
- ค่าก่อสร้าง 472,360 ล้านบาท (มูลค่าปี 2540)
- ค่าจัดกรรมสิทธิ์ที่ดิน 65,600 ล้านบาท
- ระยะเวลาดำเนินการ 20 ปี (2540 - 2560)

โครงข่ายทางหลวงพิเศษที่แล้วเสร็จ และเปิดให้บริการแล้ว



ทางหลวงพิเศษ สาย กรุงเทพฯ - ชลบุรี ระยะทาง 82 กม., เปิดให้บริการ ปี 2542

วงแหวนรอบนอก กทม. ด้านตะวันออก ระยะทาง 64 กม., เปิดให้บริการ ปี 2542

แผนพัฒนาทางหลวงพิเศษระหว่างเมือง ช่วงปี 2550 - 2554

ทางหลวงพิเศษระหว่างเมือง หมายเลข 6



สาย นนทบุรี - สระบุรี - นครราชสีมา

ลักษณะโครงการ

- ทางหลวงพิเศษ 4 ช่องจราจร 2 ทาง
- จุดตัดทางแยกทางหลวงพิเศษ
- เส้นทางเชื่อมระหว่างถนนสายหลัก
- ทางหลวงพิเศษ 4.6 กิโลเมตร, ระยะทาง 199 กม.

สถานะโครงการ

- ศึกษาความเป็นไปได้ และผลกระทบสิ่งแวดล้อมเบื้องต้น
- ศึกษาผลกระทบทางเศรษฐกิจและสังคม
- อนุมัติงบประมาณก่อสร้าง
- อนุมัติงบประมาณก่อสร้าง

ทางหลวงพิเศษระหว่างเมือง หมายเลข 81



สาย บางใหญ่ - ปทุมธานี - กาญจนบุรี

ลักษณะโครงการ

- ทางหลวงพิเศษ 4 ช่องจราจร 2 ทาง
- จุดตัดทางแยกทางหลวงพิเศษ
- เส้นทางเชื่อมระหว่างถนนสายหลัก
- ทางหลวงพิเศษ 4.6 กิโลเมตร, ระยะทาง 98 กม.

สถานะโครงการ

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ทางหลวงพิเศษระหว่างเมือง หมายเลข 7



สาย ชลบุรี - ภูเก็ต - มหาดำรง

ลักษณะโครงการ

- ทางหลวงพิเศษ 4 ช่องจราจร 2 ทาง
- จุดตัดทางแยกทางหลวงพิเศษ
- เส้นทางเชื่อมระหว่างถนนสายหลัก
- ทางหลวงพิเศษ 4.6 กิโลเมตร, ระยะทาง 89 กม.

ช่วงที่ 1 ชลบุรี - ภูเก็ต

สถานะโครงการ

- ศึกษาความเป็นไปได้ และผลกระทบสิ่งแวดล้อมเบื้องต้น
- ศึกษาผลกระทบทางเศรษฐกิจและสังคม
- อนุมัติงบประมาณก่อสร้าง
- อนุมัติงบประมาณก่อสร้าง

ทางหลวงพิเศษระหว่างเมือง หมายเลข 8



สาย นครปฐม - สุพรรณบุรี - นครสวรรค์

ลักษณะโครงการ

- ทางหลวงพิเศษ 4 ช่องจราจร 2 ทาง
- จุดตัดทางแยกทางหลวงพิเศษ
- เส้นทางเชื่อมระหว่างถนนสายหลัก
- ทางหลวงพิเศษ 4.6 กิโลเมตร, ระยะทาง 134 กม.

สถานะโครงการ

- อนุมัติงบประมาณก่อสร้าง
- อนุมัติงบประมาณก่อสร้าง

ทางหลวงพิเศษระหว่างเมือง หมายเลข 5



สาย นนทบุรี - นครสวรรค์

ลักษณะโครงการ

- ทางหลวงพิเศษ 4 ช่องจราจร 2 ทาง
- จุดตัดทางแยกทางหลวงพิเศษ
- เส้นทางเชื่อมระหว่างถนนสายหลัก
- ทางหลวงพิเศษ 4.6 กิโลเมตร, ระยะทาง 150 กม.

สถานะโครงการ

- อนุมัติงบประมาณก่อสร้าง
- อนุมัติงบประมาณก่อสร้าง

Strategy 4: Infrastructure development (2012 – 2020)

Dual Track Train

From - To	Distance (KM)	Amount (Mill. USD)
Chachoengsao – Kaeng Khoi	106	360
Lop Buri - Nakhonsawan	118	420
Map Kabao – Thanon Chira Junction	132	370
Thanon Chira Junction - Khonkaen	185	410
Nakhonpathom - Hauhin	165	530
Prachuap Khiri Khan - Chumphon	167	500



Strategy 4: Infrastructure development (2012 – 2020)

Energy Security



New sources of energy, both domestic and international, need to be sought and developed, especially through the collaborations in the area of energy resource development with potential neighboring countries on the west of Thailand (Dawei), aiming at strengthening the nation's energy security

Infrastructure Development

Sector	Amount (Billion Baht)	Amount (Billion USD)	Share (%)
1. Land Transport	1,470	46.7	65
2. Air and Marine Transport	148.5	4.7	6
3. Energy	499.5	15.9	22
4. Telecommunication	35.2	1.1	2
5. Utility	117	3.7	5
Total	2,270	72.1	100

Strategy 5: Insurance system development

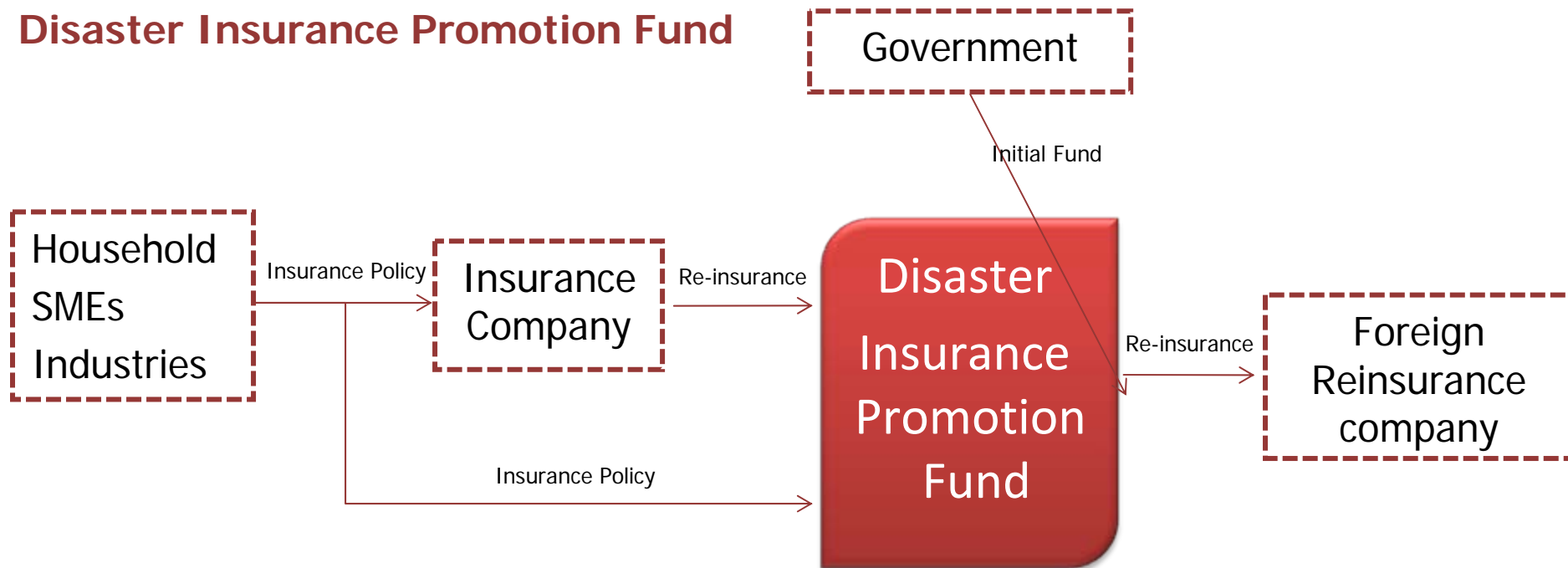
The focus is on developing the insurance system to be a key mechanism, which provides economic and social security and handles the risks from natural disasters.

- ❑ **Confidence and awareness of importance of insurance** of the public shall be promoted by instilling understanding and knowledge about necessity and importance insurance to society and people.
- ❑ **Standards and service system of claiming rights for insurers** in all sectors shall be established by setting service guidelines of standard insurance practices.
- ❑ **Development of infrastructure for insurance system** by renewing related laws and regulations to be modernized, efficient, and adaptive to changing circumstances and international standards. New insurance products and services shall be encouraged. Additionally, tax systems shall be developed to promote insurance system to be in line with the accounting and asset appraisal standards.
- ❑ **An Insurance Pooling Fund** shall be set up to be a primary mechanism in creating security and providing assistance to all parties affected by disasters.

Strategy 5: Insurance system development

- Disaster Insurance Promotion Fund was established within the Ministry of Finance with the main objective of managing catastrophic risks by means of insurance and reinsurance and providing financial aids to insurer, with the starting fund of 50 billion baht.

Disaster Insurance Promotion Fund



The Insured

The Insurer

Buffer

Reinsurer

Current Status

The executive board of Disaster Insurance Promotion Fund has developed the insurance policy for 3 type of insured and it is expected to be on the market in the middle of march. In case there is a high risk and insurance companies deny to insure any individual or company. The Disaster Insurance Promotion Fund will step in and insure all of the risks instead.

Insured	Sublimit Insurance (maximum claim)	Claims conditions	Deductible Rate	Premium Rate*
Household	Not more than 100,000 baht	Submerged building: 30,000 baht Floodwater 50cm: 50,000 baht Floodwater 100cm: 100,000 baht	none	0.5%
SMEs	30% of sublimit (With sum insure not exceed 50 Mil baht)	Estimated the damages by insurance company and pay accordingly (not more than the sublimit insurance)	5% of sublimit	1.0%
Industries	30% of sublimit (sum insure limit above 50 Mil baht)			1.25%

* Premium = maximum claim * premium rate

Household will be 500 baht per policy = $100,000 * 0.5\%$

SMEs not exceed 500,000 baht per policy = $50,000,000 * 1.0\%$

Industries not exceed 1.25% of sublimit

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Financing source for Reconstruction and Future Development

Strategy	Amount (million Baht)	Amount (million USD)	Financing Source
1. Water Resource Management	322,626	10,242	2012 annual Budget / Royal Decree on Investment Loan for Water Resource Management and Future Development
2. Restructuring of the production & service sectors	10,000	317	Royal Decree on Investment Loan for Water Resource Management and Future Development
3. Development strategy for new economic areas			
4. Infrastructure development	2,270,086	72,066	Annual Budget / SOEs / Loan / PPP
5. Insurance system development	50,000	1,587	Royal Decree on Insurance Pool Fund
Total	2,652,712	84,212	

Financing source for Reconstruction and Future Development

Sector	Amount (Billion Baht)	Amount (Billion USD)	Share (%)
1. Land Transport	1,470	46.7	65
2. Air and Marine Transport	148.5	4.7	6
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4. Telecommunication	35.2	1.1	2
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Total	2,270	72.1	100

Financing source	Amount (Billion Baht)	Amount (Billion USD)	Share (%)
1. SOEs, and Loan	721.5	22.9	32
2. PPP	413.4	13.1	18
3. Government	1,135.1	36.1	50
Total	2,270	72.1	100

Thank you