

APPENDIX 2. ERIA PRE-F/S PILOT PROJECTS IN FY2009

In parallel with the CADP, ERIA conducted the Pre-F/S Pilot Project in 2009FY as an individual project commissioned by the Government of Japan. The purpose of the project is (i) to encourage and accelerate the implementation of infrastructure projects in East Asia by conducting pre-feasibility studies for selected projects, (ii) to promote public-private partnership (PPP) for infrastructure development in East Asia by providing model cases, and (iii) to provide useful inputs to the CADP.

Projects are selected primarily based on quality as pilot projects rather than reflecting already established priorities in development plans or the possibilities of immediate implementation. The study tries to fill a missing link in infrastructure development in terms of geographical coverage, their sectoral coverage, project design, and implementation scheme.

Below, section A provides a summary of the study on Indonesia Economic Development Corridors (IEDC). Section B presents brief summaries of other projects.

1. Indonesia Economic Development Corridors (IEDC)

1-1. Background

Economic Research Institute for ASEAN and East Asia (ERIA), with the support from the Coordinating Ministry for Economic Affairs in Indonesia (CMEA) and the Ministry of Economy, Trade and Industry Japan (METI), conducted a commissioned study on Indonesia Economic Development Corridors. This study was carried out in close collaboration with other key stakeholders including government officials from various ministries and academicians in Indonesia. We also referred to existing studies and plans as widely as possible, which include RTRWN¹ and a number of the World Bank reports

The following are four major outcomes of this study:

- (1) Nomination and sequencing of Indonesia Economic Development Corridors (IEDCs)

¹ Rencana Tata Ruang Wilayah National (National Spatial Plan).

- (2) Development of Master Plans for the first-phase IEDCs, and Concept Plans for the second-phase IEDCs
- (3) Institutional and regulatory framework
- (4) High priority infrastructure projects and feasibility studies on selected pilot projects

This document contains the summary of the study, focusing on the first-phase IEDCs.

1-2. Rationale, Nomination and Sequencing of IEDCs

1-2-1. IEDCs: definition, objectives, and guiding principles

We define IEDCs as areas for targeted policy, development initiatives, and infrastructure projects to create and empower an integrated and competitive economic base to achieve sustainable development. The IEDCs connect hubs (large cities with high population density and economic activity), industry nodes (sector-specific clusters of economic activity), and supporting infrastructure (airports, seaports, and power & water suppliers).

The objective of the IEDCs is to achieve sustainable and balanced economic growth and social development. This is achieved by enhancing the connectivity between leading and lagging regions and harnessing the amalgamation effects of this connectivity. IEDCs also provide an overarching structure to ensure cohesiveness and connectivity between special economic zones, free-trade zones, and other economic development areas.

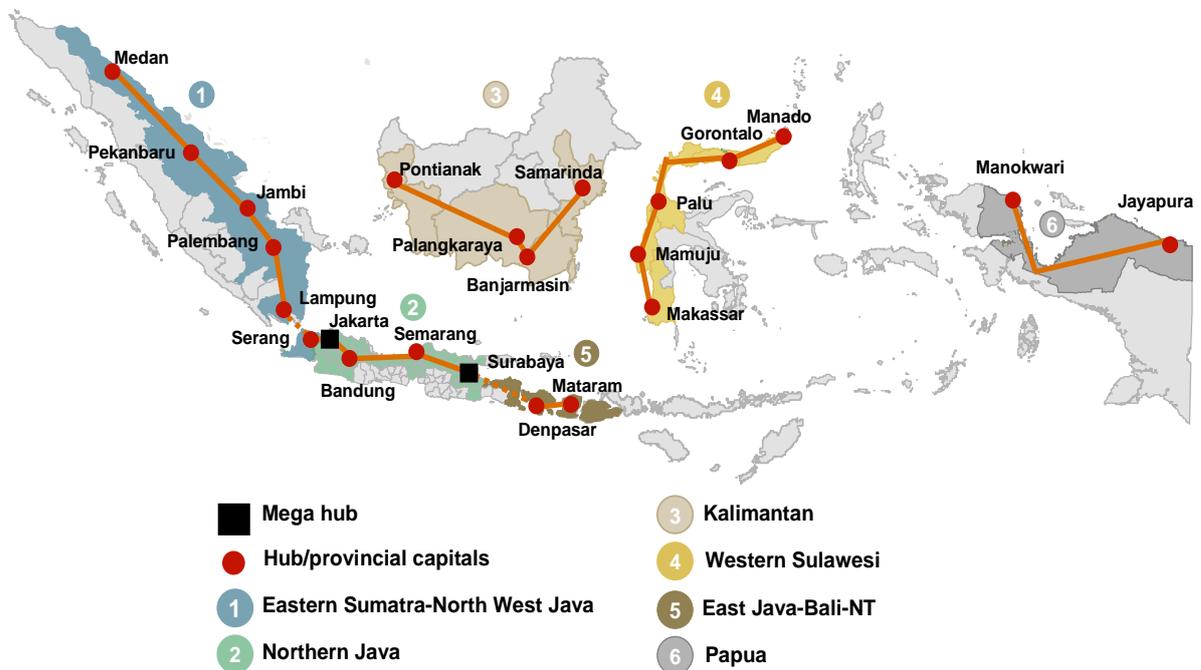
1-2-2. Nomination of IEDCs

The nomination of IEDCs is based on a comprehensive methodology starting from defining the key hubs of the corridor, the corridor path, connection to mega hubs, and the area of industry focus. Key principles for corridor nomination are used to guide this analysis, which are based on benchmarks from successful corridor development examples at the global level. This is followed by detailed analysis of potential corridors and consultations with key stakeholders to nominate the six IEDCs for Indonesia. Furthermore, existing studies and analysis on corridors are also leveraged.

The six nominated IEDCs are

- Eastern Sumatera-North Western Java
- Northern Java
- Kalimantan
- Western Sulawesi
- East Java – Bali – NTT
- Papua

Figure A2-1. Indonesia Economic Development Corridors (IEDCs)



1-2-3. Sequencing of IEDCs for implementation

The nominated IEDCs are then phased for implementation, based on analysis in two dimensions:

- Economic attractiveness and potential – increasing market size, GDP, number of hubs, availability of factors of production, and aligned with sectoral priorities for Indonesia, but decreasing investment risk

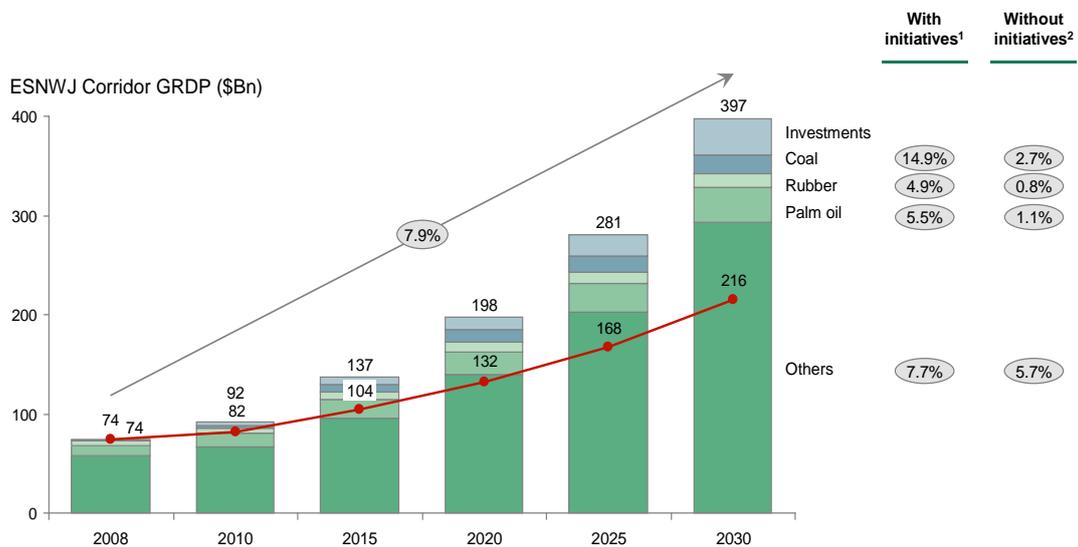
- Socio-economic attractiveness – increasingly narrowing disparity, rural population, consistency with existing government plans and environmental considerations, but decreasing existing infrastructure quality

All IEDCs are critical for the development of Indonesia. However, IEDCs with high economic attractiveness and potential as well as socio-economic attractiveness are prioritized for the first phase of implementation. The Eastern Sumatra-North West Java Corridor (ESNWJ) and Northern Java (NJ) Corridor are nominated for the first phase of implementation, Kalimantan and Western Sulawesi for the second phase, and East Java–Bali–NTT and Papua for the third phase.

1-2-4. Impact of IEDCs on the priority corridors

Based on recommendations for initiatives in the master plans, ESNWJ’s GRDP is likely to increase by 5-6 times to \$400Bn by 2030, growing at 8% per year. This would result in the creation of up to 25Mn additional jobs in the corridor. Similarly, NJ corridor’s GRDP is likely to increase by 5-6 times to \$1,020Bn by 2030, resulting in the creation of 33Mn new jobs from various corridor development initiatives.

Figure A2-2. Impact of ESNWJ Corridors



Beyond their economic impact, IEDCs will result in a significant uplift in quality of life of the people along the corridors. While some investments in infrastructure will directly improve quality of life, others will enable greater economic development,

provide employment, improve income levels, and thus benefit the people of the corridors.

In addition, the initiatives in the master plans will benefit the provinces and Kabupatens outside the corridors too, driven by three key reasons. Firstly, specific initiatives designed for regions within the corridors will have direct influence on Kabupatens outside the corridors too (e.g. the coal mining sector in South Sumatera). Secondly, a number of initiatives in the master plans are not location-specific (e.g. the palm oil board) and therefore will benefit neighbouring regions as well. Thirdly, improved connectivity will have a spillover effect to nearby areas, thus helping develop the economy of the region.

1-3. Summary of master plans and concept plans

For the two priority corridors (ESNWJ and NJ), detailed master plans are complete. In addition, concept plans have been developed for the next phase of IEDCs (Kalimantan and Western Sulawesi corridors). This section will provide a short summary of the master plans.

1-3-1. Eastern Sumatera North Western Java Corridor (ESNWJ)

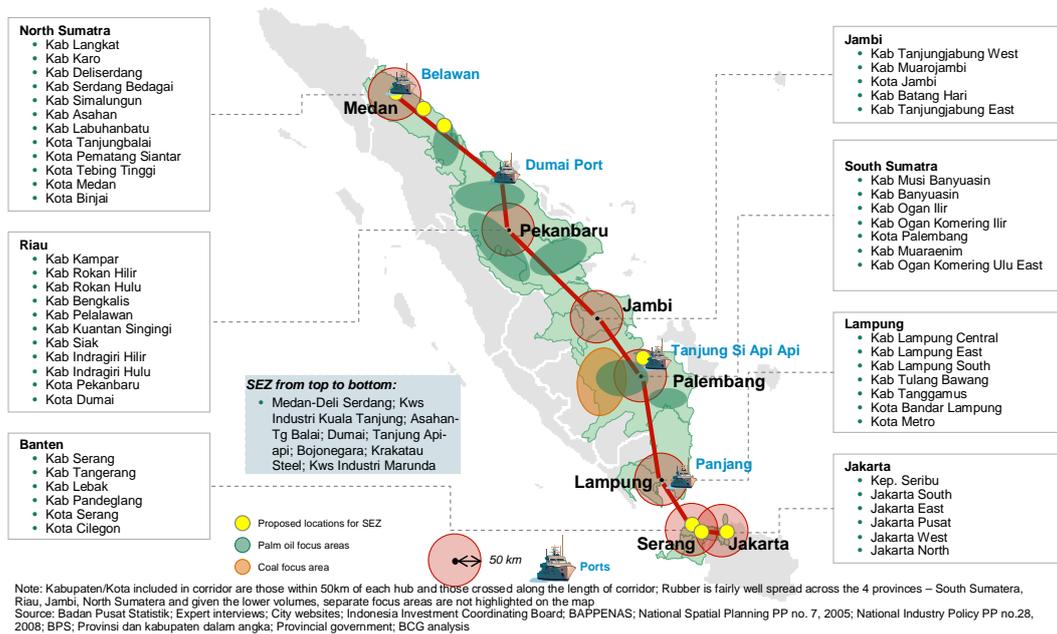
The ESNWJ connects the key hubs of Medan and Jakarta, and 5 other hubs in between them: Pekanbaru, Jambi, Palembang, Lampung, and Serang. It helps to connect rural areas between the hubs, allowing for spillover benefits through improved access to the hubs. A link to the mega-hub Jakarta is made in order to help gain access to its resources, markets, and economic activities. Furthermore, sector focus areas and SEZs are highlighted in the corridor to ensure that these areas are well connected to the hubs and that these serve as areas for policy focus. The corridor covers a total population of 45 million, with a GDP of \$70Bn.

There is strong rationale for the development of ESNWJ as it includes several substantial opportunities for development. The corridor includes large income disparities, between urban and rural regions and across provinces within the corridor. The oil and gas sector (20% of corridor GRDP) is experiencing slower growth with depleting resources, and alternative engines of growth need to be developed. Further,

investment in the corridor has been declining in the past few years. Finally, there are still significant gaps in basic infrastructure (e.g. transport, amenities, and social infrastructure).

Figure A2-3. Hubs and nodes along the ESNWJ Corridor

East Sumatra-North West Java corridor consists of 7 hubs and nodes across three key priority sectors



To overcome a number of difficulties, the vision of the ESNWJ corridor is to create a strong economic base with connecting and empowering infrastructure, complemented with targeted economic and social development measures to provide employment and achieve sustainable development. This vision of the corridor is achieved through the implementation of a two-sided strategy:

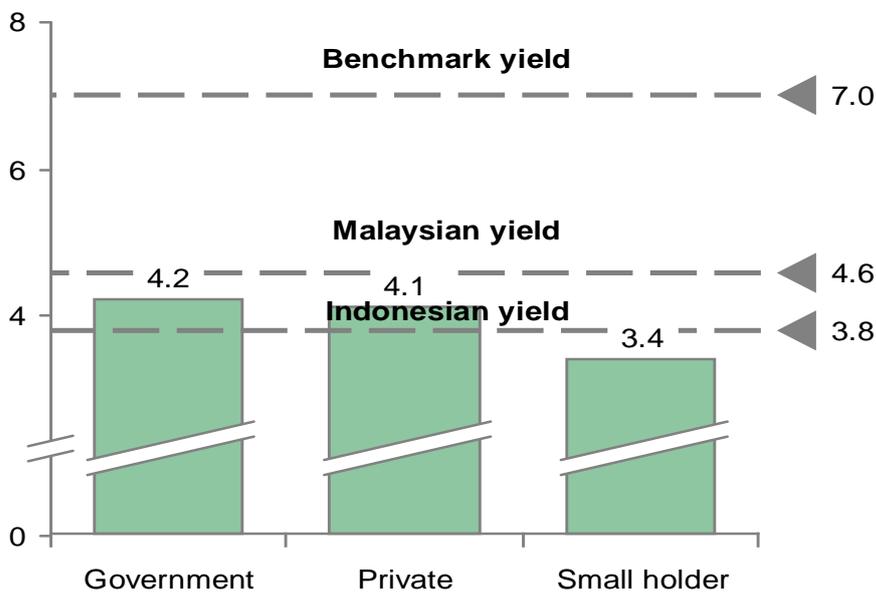
- (1) Economic development strategy, with focus on connecting the region and growing key sectors
- (2) Social and environmental development strategy, with focus on improving the employability of the workforce, improving living conditions in the rural regions, and strengthening the environment regulatory regime.

For the economic development strategy, three key focused sectors, palm oil, rubber, and coal mining, are selected as the priority sectors for development of the ESNWJ

corridor. For each of these focused sectors, in-depth analysis is conducted to identify key gaps, develop the growth strategy, and present the key enabling initiatives and infrastructure projects which are required.

Palm oil sector: The strategic focus of the palm oil sector is in the upstream part of the value chain, driven by the higher margins and projected healthy demand in the world market. The proposed strategy is to focus largely on improving yields, in particular those of smaller players. The ESNWJ corridor has the opportunity to more than double the current yield, thus resulting in significant growth. Furthermore, expansion of the area under mature plantation would contribute to growth in output as well. While the downstream part of the value chain will continue to suffer from overcapacity and thus lower margins, it remains an important strategic lever to offload upstream production

Figure A2-4. CPO yield in 2009 (ton/ha)



The following four key enabling initiatives are identified for the palm oil sector:

- (1) Form an industry body for palm oil to focus efforts on its development.
- (2) Provide financial and educational support to smallholders.
- (3) Empower the workforce with enhanced education and training.
- (4) Improve regulation (e.g. improve processes for land acquisition, government

policies for the sector, and others).

In terms of infrastructure requirements, there are two key areas to be addressed. Firstly, expand capacity at the four major ports in Sumatera.

Currently, there is long waiting time at ports, and the situation is undoubtedly getting worse as the production of CPO increases. Secondly, improve land connectivity to facilitate transportation between plantations, mills, refineries, and ports.

Rubber sector: Rubber plantations are well spread across the corridor in four provinces: North Sumatera, Riau, Jambi, and South Sumatera. However, yields of those rubber plantations are low compared with international benchmarks (as shown in the figure). For the rubber sector, the strategic focus is twofold: improving yields upstream and intensify downstream industry. For the upstream business, improving yields should be achieved mainly through the facilitation of large-scale re-plantation, with a focus on supporting smallholders.

Figure A2-5. Yield from mature land (kg/ha)



The strategy to expand the downstream rubber business should focus on two attractive industries: tires and gloves. The tire industry consumes ~60% of rubber production and is a natural downstream business in which Indonesia can establish a major presence. The glove sector is a growing sector with healthy margins.

To implement these strategies, a number of enabling initiatives are proposed, including assisting smallholders through subsidies and support for re-plantation, investing in R&D to improve yield by developing higher yielding rubber plants, and providing a one-stop shop for investors to promote the downstream rubber industry and improve standards of governance.

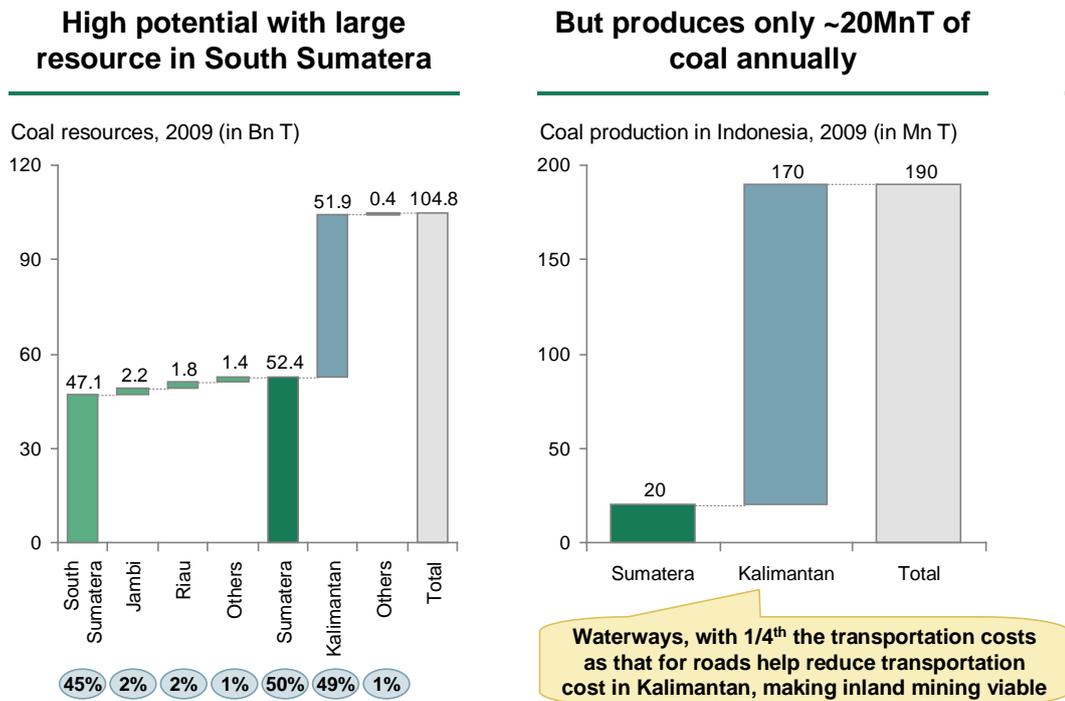
In terms of infrastructure project requirements, there are three key areas to be addressed. Firstly, we should improve capacity at ports to remove potential bottlenecks for rubber product exports. Similar to the palm oil sector, the rubber sector faces port capacity constraints which seem to worsen as production volume increases. This is particularly important for developing the downstream industry. Secondly, we must improve power availability and reliability to address downstream sector development needs. The target downstream sectors of tires and gloves are energy intensive manufacturing sectors with a critical requirement for an adequate and reliable energy supply. Thirdly, we should improve the road/rail network to address downstream sector requirements. There is a need for a robust logistics network (road/rail) between ports, warehouses, and manufacturing sites to support the development of the rubber downstream sector. Products like tires are bulky and require significant road/rail infrastructure support to ensure timely, cost effective manufacturing and delivery

Coal mining sector: There is great potential for the coal mining sector to grow into a strong pillar of economic growth for ESNWJ. Sumatera has significant coal reserves, especially in South Sumatera province, which is well placed to serve the increasing global demand for coal. Despite having similar resource levels to Kalimantan, Sumatra currently produces 20MnT of coal per year, compared to 170MnT in Kalimantan. The current low level of production is driven largely by the high cost of transportation to ports, as most of the mines along the corridor are inland.

Significant investment in railway infrastructure projects connecting major mines to ports will significantly reduce the transportation cost and provide a strong boost to the development of this sector in ESNWJ. In addition, creating an environment conducive to the development and operation of coal mines will help drive the further development of this sector. Three enabling initiatives have been identified. Firstly, empower the workforce with enhanced education and training. Secondly, improve overall

governance to promote investment in the sector. Thirdly, improve government policies and the process of land acquisition.

Figure A2-6. Coal resources and production in Indonesia (2009)



Social strategy: In addition to the economic development strategy, the social and environmental development strategy is developed for the two IEDCs, focusing on achieving three objectives.

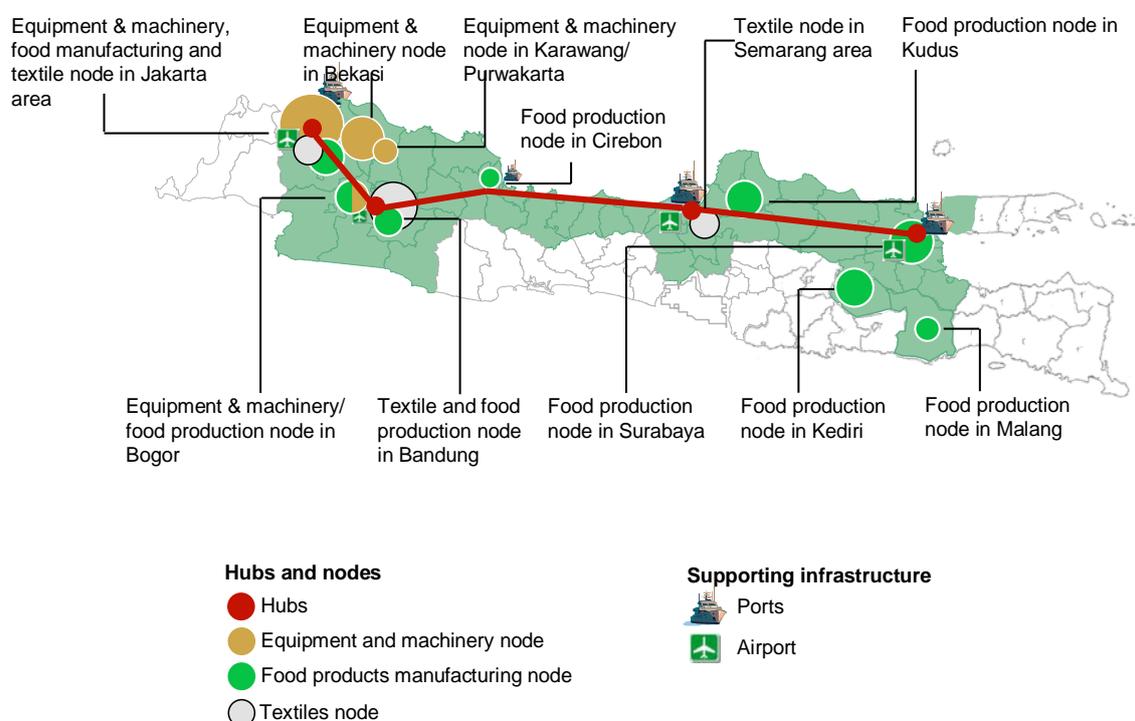
- (1) Improving the employability of the workforce.
- (2) Developing suburban/rural areas to mitigate excessive urban migration.
- (3) Enhancing environmental governance to ensure environmental preservation and sustainable use of natural resources.

These objectives can be achieved by focusing on improving conditions in four key areas: a) education, b) healthcare, c) basic amenities, and d) environmental governance. Key gaps and recommendations are identified for each of the focus areas to help improve the positioning of the corridor. In addition, 29 projects are identified to improve social infrastructure along the corridor.

1-3-2. Northern Java Corridor

The Northern Java corridor connects the four key hubs of Java – Jakarta, Bandung, Semarang, and Surabaya. Jakarta and Surabaya are two mega hubs. The corridor enhances the connectivity between these hubs as well as rural areas thus allowing for spillover effects through improved access. The corridor covers a total population of 118Mn with a GDP of \$180Bn. While Northern Java is an economically strong region in Indonesia, there are clear improvement opportunities in the region.

Figure A2-7. Northern Java Corridor

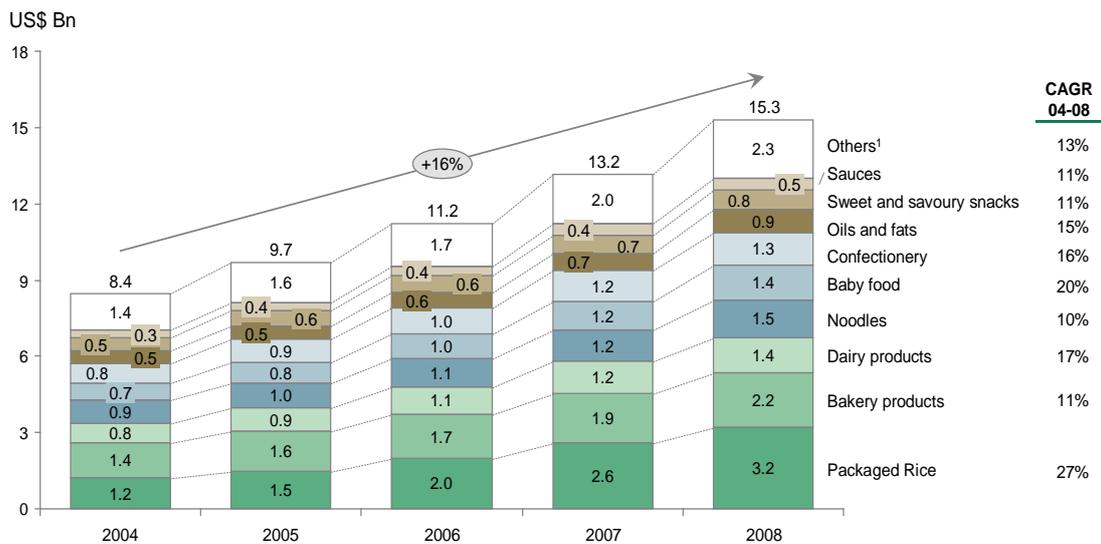


There exist large disparities in income levels between the hubs and their surrounding regions and among provinces along the corridor. There is significant potential to develop Northern Java further along the value chain climbing up to higher value-added activities. Further, domestic investment per capita into Northern Java is low compared to other regions in Indonesia. Finally, there are still significant gaps in basic infrastructure (transportation, amenities, and social infrastructure). The vision of the Northern Java corridor is therefore to create a strong economic base that provides employment and achieves sustainable development through infrastructure development and targeted economic and social development

In terms of economic development, Northern Java is an extremely diverse economy. To initiate the development process, three key focus manufacturing sub-sectors are identified in the Northern Java corridor: namely, food products manufacturing, textiles, and equipment and machinery. The overall development of the corridor will take place through initiatives beyond these sectors, too (e.g. improved connectivity and infrastructure investments), but these three sectors help us understand the key requirements for the success of the corridor and specifically provide recommendations on these sectors.

The food, beverage, and tobacco manufacturing sector: This sector contributes 26% of the manufacturing sector in Northern Java and 80% of total food production in Indonesia. Most of the production is in Jakarta, Bandung, Bogor, and Surabaya for food and beverage, while Cirebon, Kudus, Kediri, and Malang focus on tobacco.

Figure A2-8. Total sales of food manufacturing products in Indonesia



While the sector experienced growth in recent years, challenges pertaining to infrastructure and human resource shortages, as well as challenges in the judiciary landscape, restrict the sector from meeting its full growth potential. To go forward, the focus for this sector should be placed on removing barriers constraining its ability to grow in line with the strong domestic demand for food and beverage and promoting exports on selected high value added or indigenous products. By doing so, the key enablers would be to enhance the institutional framework and human capital to support

the growth of the industry. Firstly, there is a need to improve the legal system, in order to draw foreign investments. Secondly, we need to attract skilled foreign talent by improving the quality of life in the region and thirdly, to improve education and training to develop local talent.

Textile sector: This sector is one of the largest employers in Indonesia and is an important source of foreign exchange. Jakarta, Bandung, and Semarang are the main manufacturing nodes. To develop this sector, a strategy is required to recapture the domestic market as well as enhancing export by strengthening Indonesia's role as a sourcing country. Furthermore, there is potential to develop the value chain upstream to raw materials production and downstream to the design of garments to create greater vertical integration. The key enablers to develop this sector are to

- Enhance bilateral trade agreements with importing countries,
- Review labor laws (e.g. to address difficulties in hiring and firing, rigidity of working hours, and high cost of firing personnel),
- Provide financial support to upgrade aging equipment, and
- Provide incentives for high value added activities.

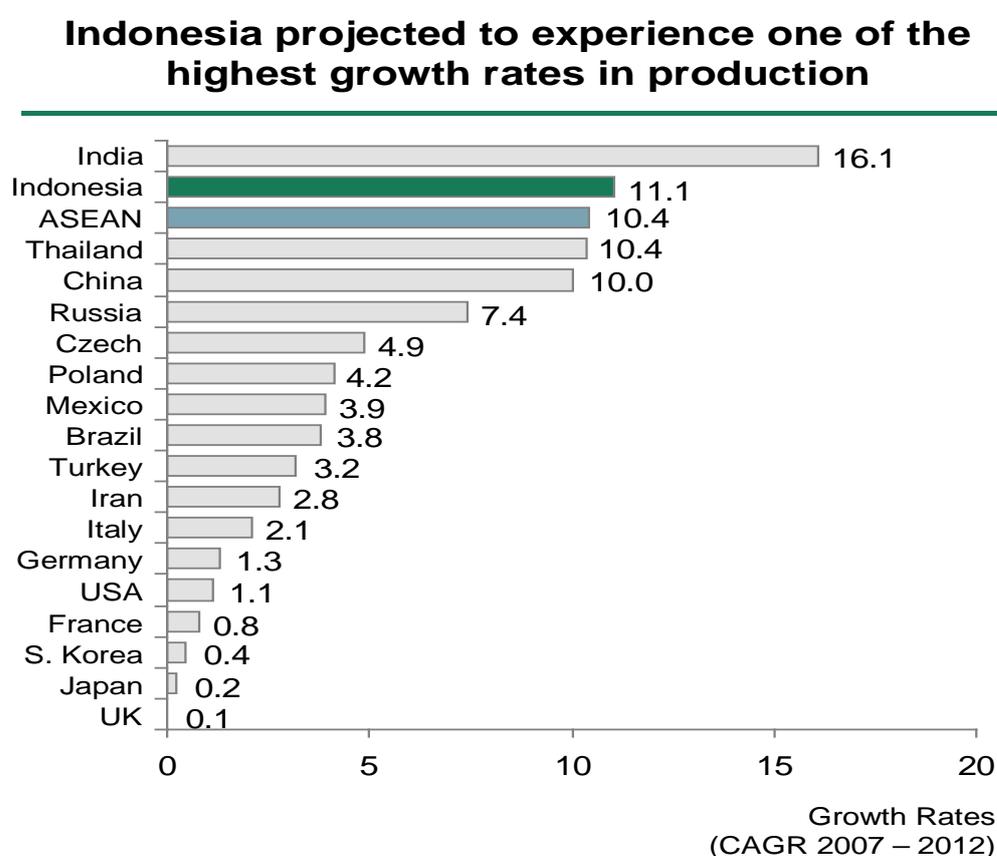
Equipment and machinery sector: This is the largest manufacturing sub-sector in North Java with transport equipment (components, motorcycles, and commercial and passenger cars) as the main focus. Jakarta, Bogor, Bekasi, and Karawang/Purwakarta are the main nodes. To further develop this sector, there is a need to foster supporting industries and develop capability for higher-value-added manufacturing, to strengthen relations with existing OEMs and to attract more OEMs to establish production bases and/or increase production capacity in Indonesia. This can be achieved by

- Promoting supporting industries and encouraging OEMs to locate their production base in Indonesia
- Encouraging knowledge transfer, and
- Improving education and training to develop a skilled local labor pool.

To ensure the development of each of the focus sectors as well as the development of the corridor, several specific infrastructure support initiatives, which are common across the focus sectors, are required. Firstly, there is a strong need to enhance port capacity, efficiency, and security. Focus industries in Northern Java face long lead

time and delays at ports. Increased port capacity is needed in order to avoid bottlenecks for exports as well as for domestic inter-island trade. Furthermore, improvements in port security are required to control the influx of illegal imports that affect the domestic textile industry. In line with the above, port-related auxiliary infrastructure such as roads leading to ports, warehousing, and consolidating facilities at ports also need to be developed as volumes continue to increase.

Figure A2-9. Compound annual growth rate projection of car production



Secondly, there is a need to enhance the rail and road network within the corridor. The lack of connectivity and poor road/rail conditions currently lead to increased cost and time. Thirdly, enhancing the power supply and its reliability is critical to supporting the growth of the manufacturing sector.

Above all, for the development of key sectors of NJ corridor, Jakarta port development in a critical enabler. For this, a comprehensive plan needs to be developed for the Jakarta region, inclusive of key industrial clusters that are needed for

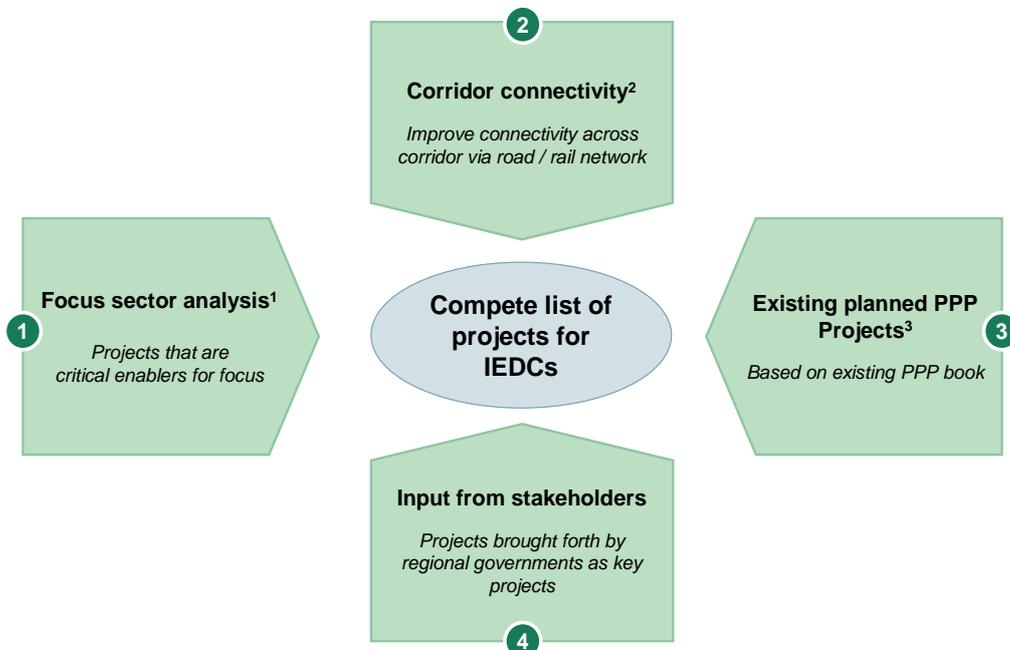
growth. A medium- to long-term Jakarta port development strategy needs to be developed with key infrastructure like rail, road, air transport connecting the industrial clusters to Jakarta port, and other key areas in Java, to support the growth of the corridor

1-4. Project Selection and Feasibility Studies

1-4-1. List of infrastructure projects

Infrastructure is a key enabler as well as a current barrier to the growth of each sector analyzed, for the two prioritized IEDCs. Thus, to ensure successful implementation of the corridor, key infrastructure needs to be developed. To construct a list of infrastructure projects, four key sources were used: a) focused sector analysis from master plans, b) corridor connectivity to help improve the linkage of hubs, nodes, and rural areas and benefit from spill-over effects, c) existing planned PPP projects, and d) inputs from stakeholders, inclusive of central and local government officials.

Figure A2-10. 4 key sources for identifying infrastructure projects



1. Based on sector demand-supply analysis, expert views from interviews and strategy development for the priority sectors. 2. Projects required to connect the corridor by road/ rail and transportation traffic analysis from Halcrow. 3. Includes all PPP projects in the corridor. Source: BCG analysis

The above cohesive process results in a comprehensive list of 88 infrastructure projects: 54 projects for the NJ corridor and 34 infrastructure projects for the ESNWJ

corridor. For successful implementation of the two priority corridors, all of the 88 projects identified are critical, and each of these would need to be implemented in the coming years.

Figure A2-11. Projects identified for ESNWJ and NJ Corridors

In total, 34 projects identified for ESNWJ corridor (I)

Serial No	Name of project
1	Bojonegara — Ketapang (Jawa — Sumatera) Fe
2	Bojonegara Port expansion
3	Dumai Port expansion
4	Lampung Panjang port expansion
5	Palembang port expansion
6	Medan port expansion
7	New North Sumatera Coal Fired Steam Power P
8	North Sumatera (Infrastructure) 2x100 MW
9	Sumatera Mine Mouth Coal Fired Steam Power
10	Sumatera Mine Mouth Coal Fired Steam Power
11	Soekarno Hatta Airport — Manggarai, Railway D
12	Kualanamu Airport Railway Development
13	Simpang — Tanjung Api-Api Railway (87 kms)
14	Tanjung Enim — Batu Raja Railway (78 kms)
15	Lahat — Kertapati Railway (190 kms)
16	South Sumatera Coal Rail (~500 kms)
17	Medan Dumai Pekanbaru (660 kms)
18	Medan-Jakarta Railway (1,400 kms)
19	Medan Binjai Toll Road

Source: Expert interviews; Corridor masterplans; Industry reports; BCG and 206332-00 Pilot project selection-300p10-AM-JAK.ppt

In total, 54 projects identified for NJ corridor (I)

Serial no.	Name of project	Province	Project type	Source
1	Kertajati International Airport	West Java	Air	PPP
2	Port—Jakarta port expansion	Jakarta Special Capital Region	Port	Sector analysis
3	Port—Jakarta green field port	Jakarta Special Capital Region	Port	Sector analysis
4	Port—Semarang port expansion	Central Java	Port	Sector analysis
5	Port—Surabaya port expansion	East Java	Port	Sector analysis
6	Greenfield port, Tanjung Bulu Pandan Madura	East Java	Port	Input from stakeholders
7	Central Java Coal Fired Steam Power Plant (up to 2000 MW)	Central Java	Power	PPP
8	Power—Coal plant project 1 (up to 2000 MW)	West Java	Power	Sector analysis
9	Power—Coal plant project 2 (up to 2000 MW)	West Java	Power	Sector analysis
10	Power—Coal plant project 3 (up to 2000 MW)	West Java	Power	Sector analysis
11	Power—Geothermal plant project (up to 250 MW) ¹	West Java	Power	Sector analysis
12	Railway Facility—Blue and Green Line (Jakarta Monorail)	Jakarta Special Capital Region	Rail	PPP
13	Gedebage, Bandung Municipal, Integrated Terminal (Railway)	West Java	Rail	PPP
14	Rail—Jakarta to Surabaya	Multiple	Rail	Connecting hubs

1-4-2. Project prioritization and pilot project selection

All 88 projects prioritized in the two corridors are considered for prioritization with the following framework and sub-dimensions:

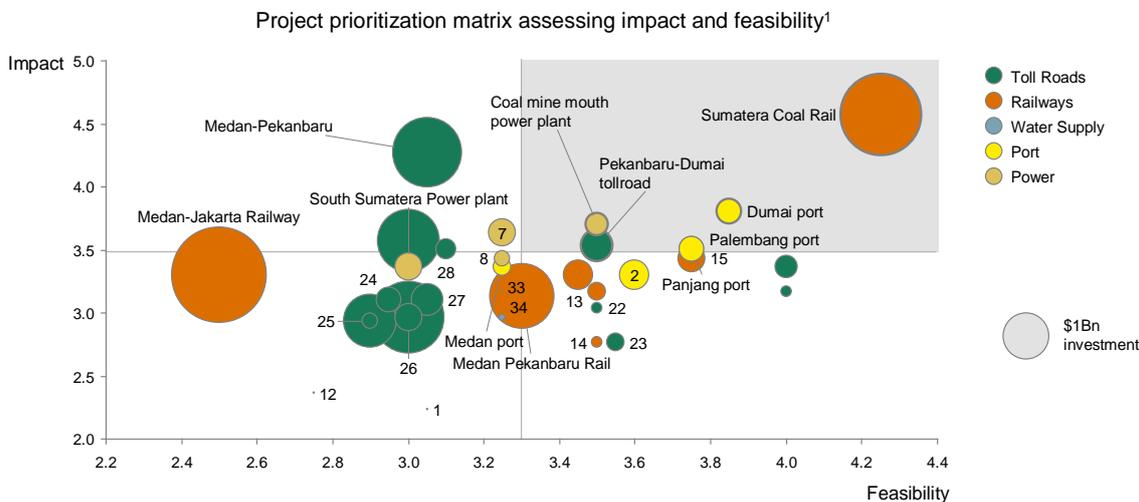
- (1) Impact: Based on requirement/gap, social benefit, regional attractiveness, spillover effects, and investment size
- (2) Feasibility: Based on logistical complexity and project status

Each project is evaluated and analyzed in detail along the sub-dimensions of impact and feasibility to derive an overall score for the two dimensions.

The most attractive projects based on the above criteria were then looked into specifically, and the steering committee chose the pilot projects considering the following three key factors. Firstly, the project should not have been planned by another agency. Secondly, it should have a significant potential size to qualify as a pilot project and be a significant model case. Thirdly, it should minimize the number of agencies and parties required to lower co-ordination complexity and increase the chances of success.

Figure A2-12. Six potential pilot projects in ESNWJ

S. Sumatera rail, Dumai/Panjang/Palembang port, mine mouth power plant, Dumai-Pekanbaru road



The result of the above framework and the considerations from the steering committee resulted in the selection of the following five pilot projects for further analysis in feasibility and pre-feasibility studies:

1. *Dumai Port Expansion:* This project is a critical enabler in supporting the palm oil and rubber industries for ESNWJ IEDC as identified in sector analysis. This was therefore selected as a pilot project for feasibility study.
2. *Dumai-Pekanbaru Palm Oil Railway:* To improve the competitiveness of the palm oil industry by lowering transportation costs and providing easy access to Dumai port, the Palm Oil Railway was selected as another pilot project for feasibility study. This project, along with Dumai port, would have significant synergies and would therefore be more attractive for investors.
3. *Trans-Java and Trans-Sumatera Railway:* With the objective of improving connectivity across Sumatera and Java, to help rural areas connect with key hubs and nodes, Trans-Java and Trans-Sumatera railways were selected as key projects. Pre-feasibility studies are conducted to evaluate the attractiveness of these projects from financial and economic perspectives.
4. *Geothermal Power:* Given the need for power, as stated in the sector strategies for the two IEDCs and the aspiration of Indonesia to develop in a sustainable way, emphasis was placed on geothermal energy as a source of power generation.

A pre-F/S was commissioned for this key project, focusing particularly on the economics of geothermal energy, and on making it attractive for private investors.

1-5. Proposed Institutional and Financial Framework

1-5-1. Current PPP effort in Indonesia

Indonesia has been gradually increasing its focus on PPP projects to enable investments, particularly in infrastructure. In recent years, the Indonesian Government has made a renewed effort to improve PPP investments through 3 key initiatives:

- 5- The introduction of PPP-specific laws and regulations, e.g. laws that clarify and streamline processes for PPP identification, implementation, and regulations that assign responsibility for land acquisition by the government
- 6- The development of sector-specific laws and regulations, e.g. legislation that details requirements to acquire business, construction, and operating licenses.
- 7- The improvement of the institutional framework for PPP development, e.g. clarification of the role of the government counterparts for each sector and the establishment of ministerial-level policy body to promote and coordinate PPP development.

1-5-2. Role and set-up of PDF

The working group proposed that PDF be specifically used for corridor projects for various purposes including transaction advisory and feasibility studies. The PDF is to create an uninterrupted availability of funds for project preparatory activities to ensure a pipeline of credible, bankable projects. The PDF will not be used for financing actual PPP projects.

The PDF is to be established as a revolving loan facility, where contracting agencies (CAs) will need to commit a part of the total project procurement costs. Based on international benchmarking², the CAs cost-share could be approximately 25% of total project development costs. These costs will be recovered from successful

² India Infrastructure Project Development Fund prescribes that Sponsoring Agency provides up to 25% of total project development costs.

projects; however the CAs will carry the financial risk for unsuccessful bids. The PDF will also have a facility to provide grants for projects that might not be financially feasible but that have high economic and social returns. The PDF would be set up under PT SMI as these are existing limited companies established by the MoF to promote PPP investment.

1-6. Next Steps

This project has been delivered with comprehensive scope, inclusive of set-up of IEDCs, master plans for two priority corridors, institutional and regulatory framework, and infrastructure projects identification, prioritization, and feasibility studies for selected projects. A lot of these have been achieved while working together and ensuring a buy-in from the key stakeholders.

While significant progress has been made in this project, we need further support from all stakeholders to see it through to final implementation of IEDCs. Therefore, it is critical to successfully launch the pilot projects to benefit the people and the economy of IEDCs. In addition, given the high infrastructure requirements, the next wave of projects need to progress to a feasibility study stage. In addition, PDF and viability gap fund need to be established to ensure the implementation of selected projects. Beyond the current IEDCs, master plans need to be developed for the next wave of IEDCs (Kalimantan and Western Sulawesi).

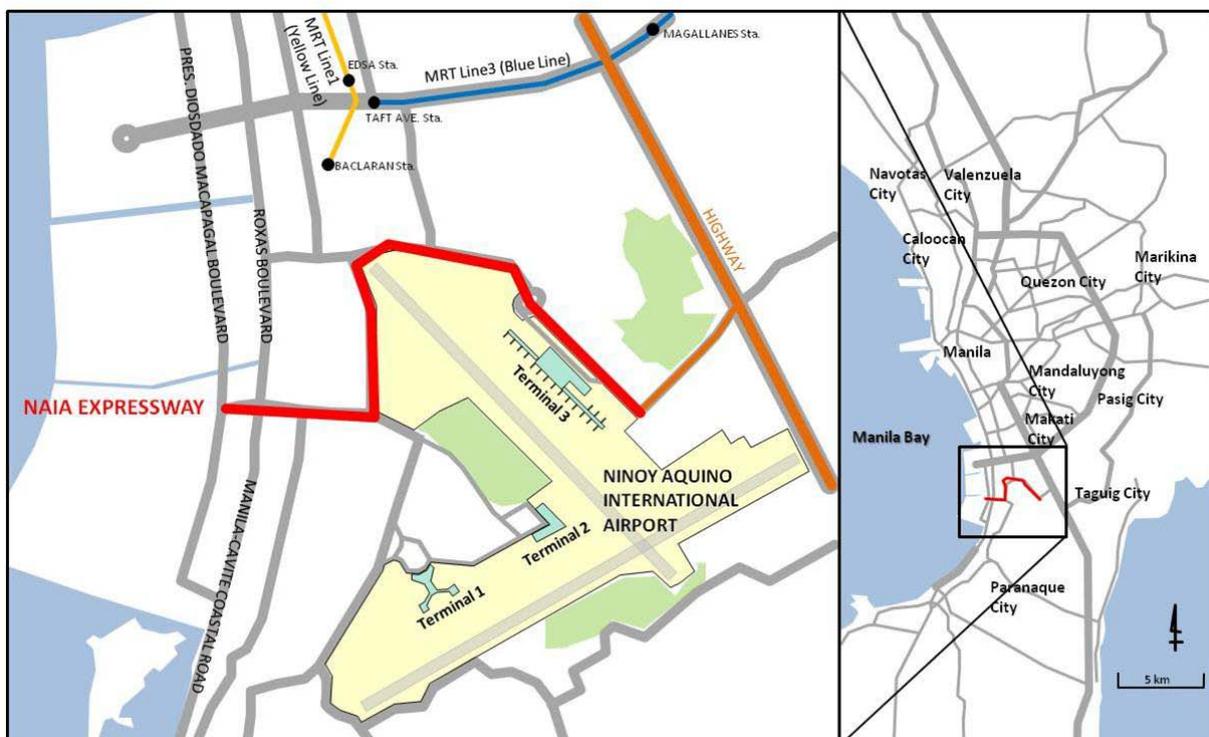
2. Other ERIA pre-F/S pilot studies in FY2009

2-1. The Philippines: NAIA (Ninoy Aquino International Airport) Expressway

Phase II of the NAIA Expressway connects Metropolitan Manila and Ninoy Aquino International Airport. Phase-II starts from Phase-I's closest point to the Airport, provides an approach to all three existing airport terminals by running along the periphery of the Airport, and merges with the Diosdado Macapagal Road. The total length is 5.2km with a 4-lane elevated toll road, the total construction cost was US\$240mil, the construction period was 4 years, and the concession period will be 25 years.

The project is sponsored by the DPWH (Department of Public Works and Highways), and the BOT scheme is proposed as Phase I. Since the IRR with toll fee only is assumed to be relatively small, it is suggested that a certain amount of public support is necessary to be attractive to the private sector. EIRR, in consideration of the public benefit from vehicle operating time and cost due to the anticipated mitigation of congestion, is estimated to be 27%, and the NPV of the benefit (Economic NPV) is US\$120 million, figures which are encouraging from the government's viewpoint..

Figure A2-13. NAIA (Ninoy Aquino International Airport) Expressway

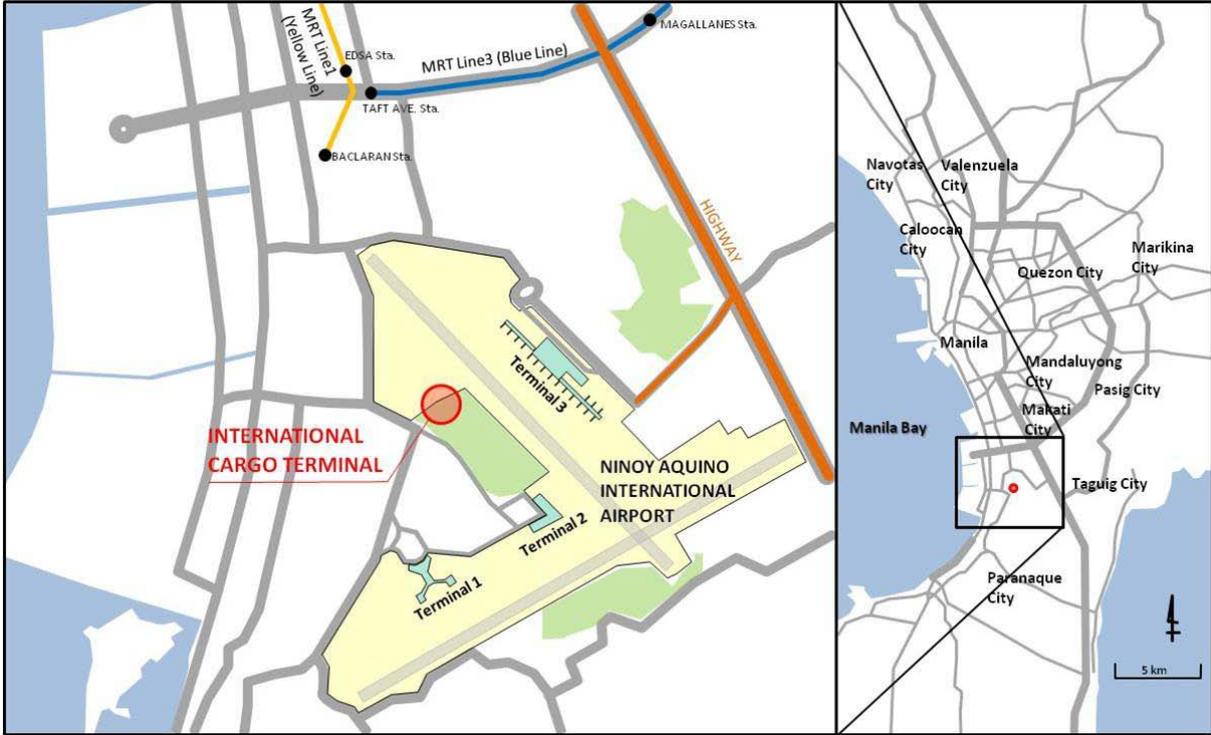


2-2. The Philippines: NAIA New International Cargo Terminal

This project involves the construction of a large-scale unified cargo terminal located inside the airport to provide reliable and well-organized services with good access to the aircraft. It represents a departure from the current situation, with scattered location bases operated by independent private companies with their small-scale cargo handling facilities in and out of the airport. The total construction cost is US\$50 million, the construction period is 2 years, and the concession period is 25 years.

The project is sponsored by MIAA (Manila International Airport Authority). The terminal is equipped with facilities to unload from trucks, warehouses, offices, and to load onto the aircrafts. Those companies who are currently in operation should be encouraged to become the tenants of the new cargo terminal. Based on the tenant fee, IRR is estimated to be 21%, while EIRR is 41% and Economic NPV is US\$200 million.

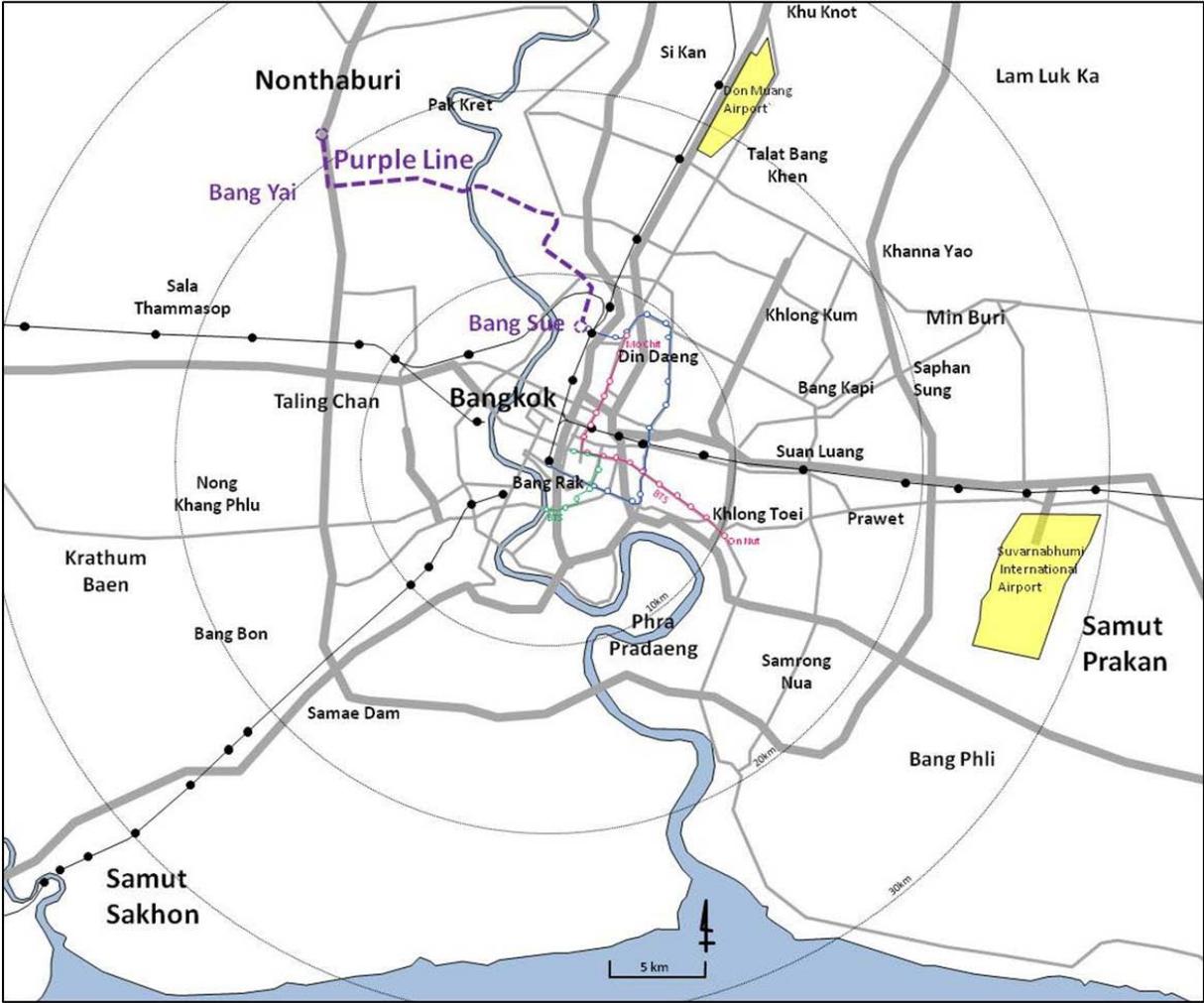
Figure A2-14. NAIA International Cargo Terminal



2-3. Thailand: The Purple Mass Rapid Transit Line in Bangkok

The project constructs the so-called Purple Line of the Mass Rapid Transit (MRT) network from Bang Yai to Rat Burana with a total length of 42.8 kilometers. It provides a commuter service between the suburban area in the northwest of Bangkok and the southern area via the old city center. The line is to be constructed in two phases: Phase A (from Bang Yai to Bang Sue (23.0km)) has been the focus of the feasibility study.

Figure A2-15. The Purple Mass Rapid Transit Line in Bangkok



A substantial part of the Purple Line is to be constructed as an elevated structure in suburban area while the section of the line located in the central area is planned to be underground. The civil works will be procured by the Thai Government with a loan from the Japanese International Cooperation Agency. The private sector will be responsible for the procurement, funding and installation of the rolling stock, and mechanical and electrical systems.

The initial investment cost is US\$1 billion, the concession period is 30 years, and the

EIRR is 12.5%, based on the Unitary Payment by the Government, where net present value of the revenue shortfall between the Unitary Payment and the revenue generated by the Purple Line is estimated to be 11 billion Baht (US\$330 million) over a 30-year period at a discount rate of 12.0%.

2-4. Cambodia: Inland Container Depot

This is an inland container depot project in Phnom Penh and Poipet for providing smooth and efficient customs clearance and mitigating traffic congestion in the suburbs of Phnom Penh and the border area of Poipet. In order for Cambodia to invite foreign direct investment and to enhance economic growth, it is essential to improve logistics infrastructure and the customs clearance system. Cambodia is strategically located along with the Southern Economic Corridor, a corridor from Bangkok to Ho Chi Minh City. This project is supervised by the Ministry of Public Works and Transport.

The location of Poipet Dry Port couldn't be finalized in the study because a new access road to the border for freight transport had not yet been decided by the Thai and Cambodian governments.

Phnom Penh International Dry Port (PIDP) will be located in Phnom Penh Logistic Park (PLP), which will be constructed to the north of a railway junction within the 2nd Intermediate Ring Road that is supposed to be completed by 2013, according to Phnom Penh Master Plan 2020.

The initial investment cost will be US\$50 million including the cost of warehouses, cranes, forklifts, trailers and others, but excluding land acquisition. Leveling and access road upgrading should be the responsibility of the government. On this basis, IRR of the project is 19.3% with 35 years project life.

Since this study is the first study to set out a development plan for PLP and PIDP, the Ministry of Public Works and Transportation (MPWT) needs to confirm the development plan based on this report and a consensus/agreement on project implementation from the Cambodian Government needs to be reached, in order to proceed to the next steps.

Figure A2-16. Poipet

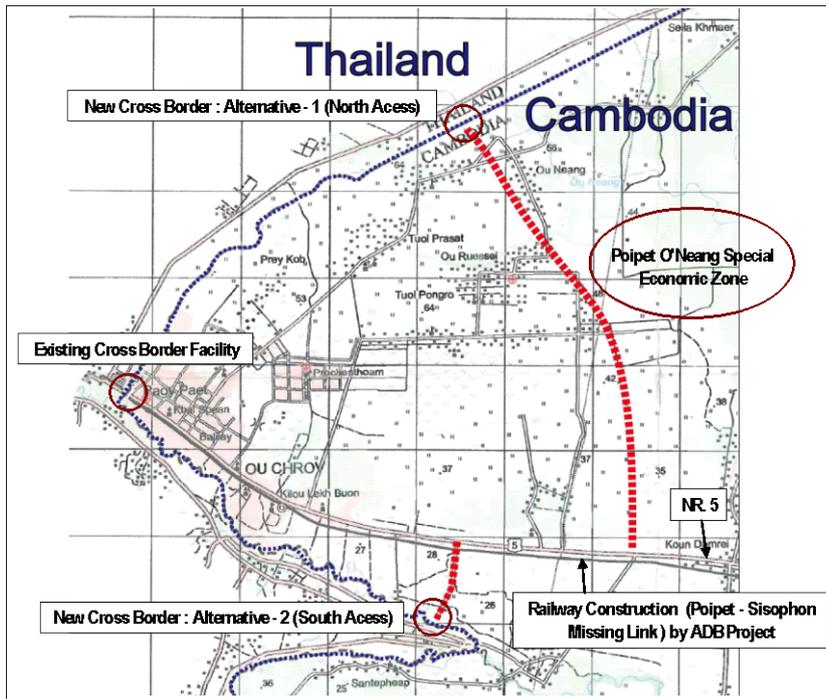
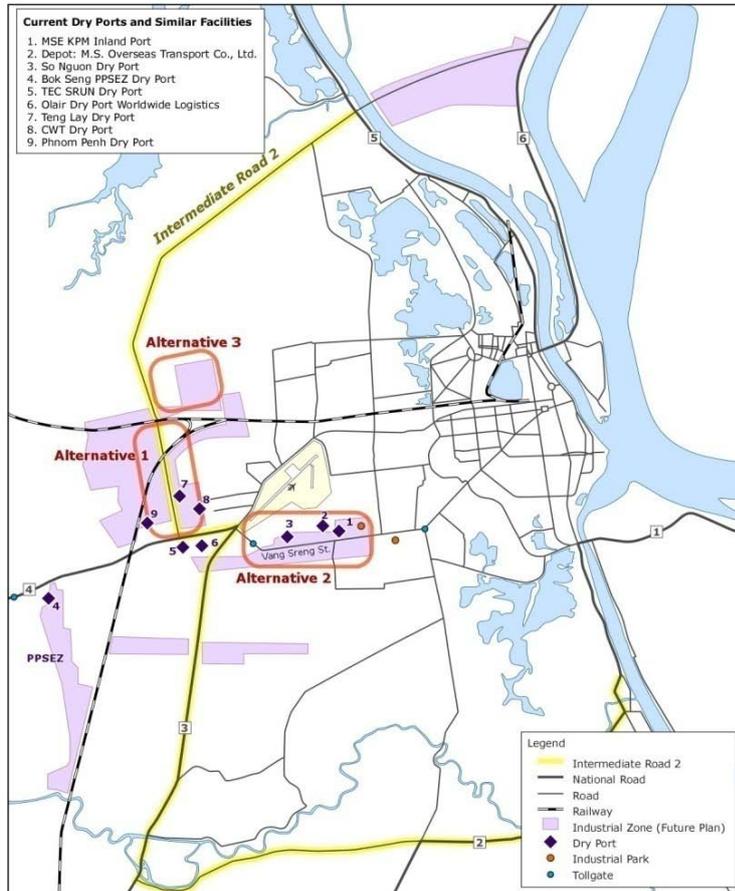


Figure A2-17. Phnom Penh (Alternative No. 3 is the recommended location)



2-5. Cambodia: A Medical Sector Project in Phnom Penh

The quality and the capacity of medical care services in Cambodia are obviously insufficient compared with neighboring countries, mainly due to the disruption caused by Cambodia's long history of civil war. Nowadays, increasing numbers of people are traveling to Bangkok, Singapore, and other places for quality health care services, and are spending a lot of time and money. In order to improve this situation and create a supportive environment for further economic growth in Cambodia by developing this key social infrastructure, this project establishes a state-of-the-art hospital and a post-graduate medical training center in Phnom Penh. A long term vision of the project is to build an ideal medical care system supporting sustainable development of the health sector in Cambodia, and to create a sound basis for medical excellence in the country and respond to Cambodia's efforts to reduce poverty and advance development.

Figure A2-17. Phnom Penh (Alternative No. 3 is the recommended location)



The 13,000 square meter hospital building will also house a post-graduate training center and provide adequate space for modern amenities and installation of various types of medical equipment of the highest international standards. It will also be equipped with solar panels, central heating, air conditioning, and a built-in network of pipes for supply of oxygen and fresh air. The hospital comprises four centers: Health Screening & Consultation Center, Neurological/Neurosurgical Center, Cardiovascular Center, and Oncology Center. The Post Graduate Training Center will train, on a regular basis, 60 medical professionals at a time in different healthcare disciplines.

The estimated total investment cost of the project is US\$50 million. On the base case scenario, the project is estimated to yield US\$12 million profit before tax. The net present value (NPV) at a discount rate of 10% is estimated to be US\$10.3 million with 14% IRR in its 10 years project life.

2-6. Lao PDR: Zero Carbon Emission Data Center

This is a hydro-power-electricity-based data center project, harnessing the abundant water resources in Laos. The idea coincides with the Lao Government's policy that is focusing on development of new hydraulic power plants so as to be a hydro-power electricity exporter in Mekong.

The first plan, which was to set up a container type data center near a dam, was shelved due to low demand in early years and delayed IT infrastructure development in Laos. In the end, the project idea starts with a 100-rack data center business in the National Internet Center (NIC) constructed by the Lao National Internet Committee (LANIC). This project is supervised by the National Authority of Posts and Telecommunications.

As its responsibilities, the Lao Government is requested to 1) rent floor space in the NIC at the normal market price for office buildings, 2) strengthen the data center utilities and security systems as required, and 3) reduce the cost of access to the Internet.

The above public support implementations are prerequisites because the project is not feasible until they are realized. In this case, NPV for 5 years is 64.78 million Japanese yen with nominal initial investment. However, the original plan should be investigated in the long term perspectives. In the long term, demand must drastically increase so as to enable the upscaling of the data center business in Laos, so it can begin to serve neighboring countries in the Mekong region.

2-7. Vietnam: Trung Luong-My Thuan Expressway

This is a 54.38km toll road project between TrungLuong and My Thuan, designed for vehicles traveling at 120Km/h. The road has 2x2 lanes in phase I, to be expanded to 2x3 lanes in phase II, and is constructed and operated by BIDV Expressway Development Corporation (BEDC) as a part of the Ho Chi Minh City to Can Tho Expressway. The implementation of this project is of high importance in boosting the socio-economic development of the Mekong Delta in Southern Vietnam. The construction work will be completed in 2013 with atotal project cost of VND22,042,816 million (US\$1.16 billion).

Figure A2-18. Trung Luong – My Thuan Expressway



BOT scheme is proposed. BEDC will be the project entity, namely the shareholders. Bank for Investment and Development of Vietnam (BIDV), BECAMEX IDC Corporation (BECAMEX), Vietnam Urban and Industrial Zone Development Investment Corporation (IDICO), Petro Vietnam Finance Company (PVFC), Vietnam Coal – Mineral Industries Corporation (VINACOMIN), and Vietnam Shipbuilding Industries Corporation (VINASHIN)

will be the project sponsors. Domestic loans for the project are arranged and guaranteed by BIDV, and foreign loans are expected to be guaranteed by the Government of Vietnam.

Based on the feasibility study, the viability gap of the project is estimated at around 26.64% of the project's total investment capital, which is lower than the government's stipulated availability funding cap of 30%. The project IRR is estimated to be 14.30%, and equity IRR is estimated at 15.61%.

2-8. India: Chennai-Ennore Economic Industrial Corridor Master Plan and detailed feasibility study on a special economic zone (SEZ) project

The Master Plan aims at the enhancement of industrial agglomeration around Chennai and Ennore, a satellite city of Chennai, as a part of the Mekong India Economic Corridor. It is expected that the Chennai-Ennore area will become a world-class industrial cluster.

SEZ development attached to a major port with associated logistic infrastructure should be the basis for accelerating investment, employment, and further industrial development, especially in the automobile and automobile parts industry in this region. This project is supervised by the Industries Department, Government of Tamilnadu.

The Master Plan identified key clusters and industries in the region and worked out an infrastructure development plan for their development. It found that key industries of this region are IT, automobile and automobile parts, chemical and petrochemicals, electronics hardware, leather, and textiles. The plan is to invest US\$15 billion from 2010 to 2035, including US\$4.6 billion for PPP projects. Phase 1 runs from 2010 to 2015, focusing on eliminating bottlenecks and developing high-priority infrastructure. According to the Plan a total of US\$1.9 billion is spent on developing SEZ, roads (new construction, expansion, and improvement), railways, and ports. It suggests that SPV for project implementation should be established and that decision making should be done by an apex committee whose chairman is Chief Minister

As a pilot project, the 780-acre Free Trade and Warehousing Zone located in Ennore adjacent to Ennore port was selected. This project has huge potential because 1) the government focuses on the development of north Chennai, 2) existing coal fired power plant and petrochemical plant while Ennore port is close to the project site, and 3) industrial and logistical clusters are already there. Based on this, a drastic demand increase is expected for container traffic at Chennai and Ennore. The basic idea for the project is a BOT base PPP scheme with a 30-year concession period and a total project cost of US\$378 million,

including US\$250 million in construction costs. NPV is estimated at 337 million USD, and IRR is estimated at 20.1% (equity IRR 24.6%).

Figure A2-19. Connectivity between Mekong and India

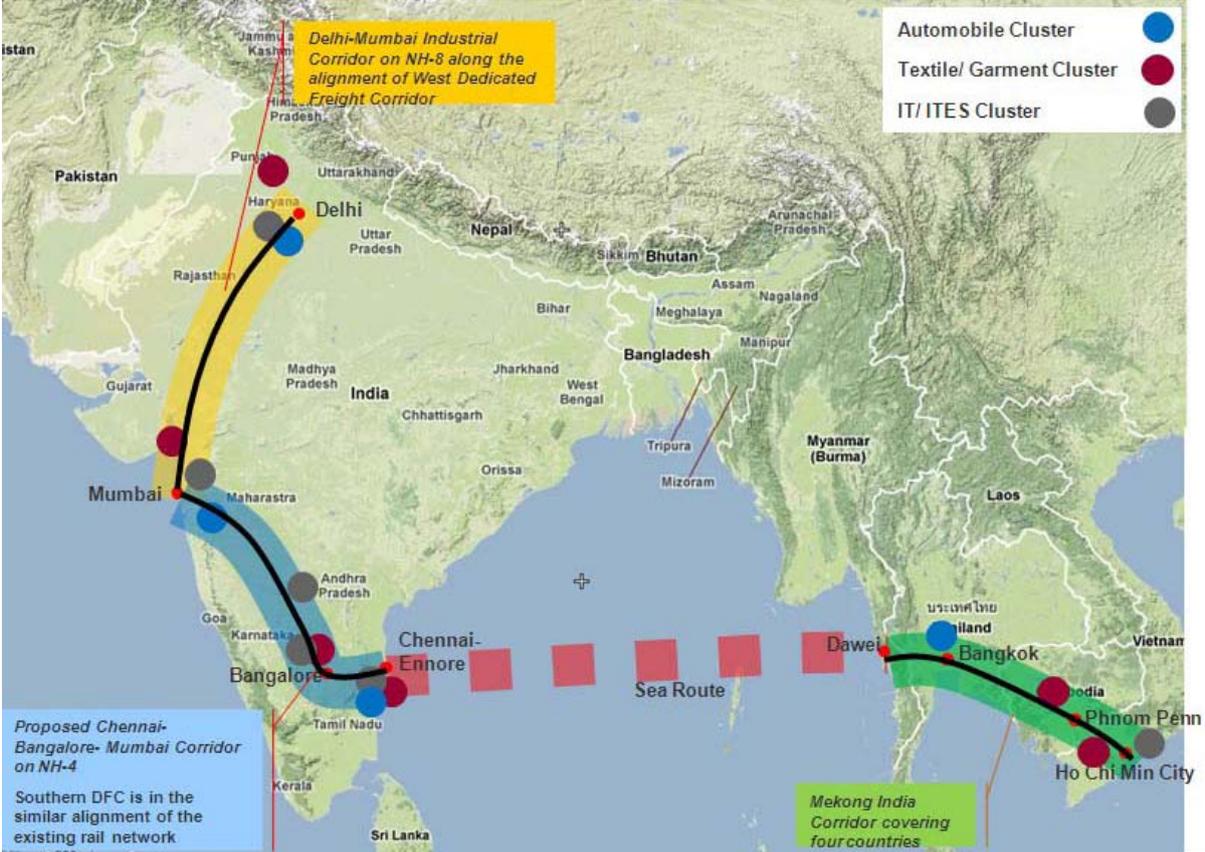


Figure A2-20. Chennai-Ennore Area

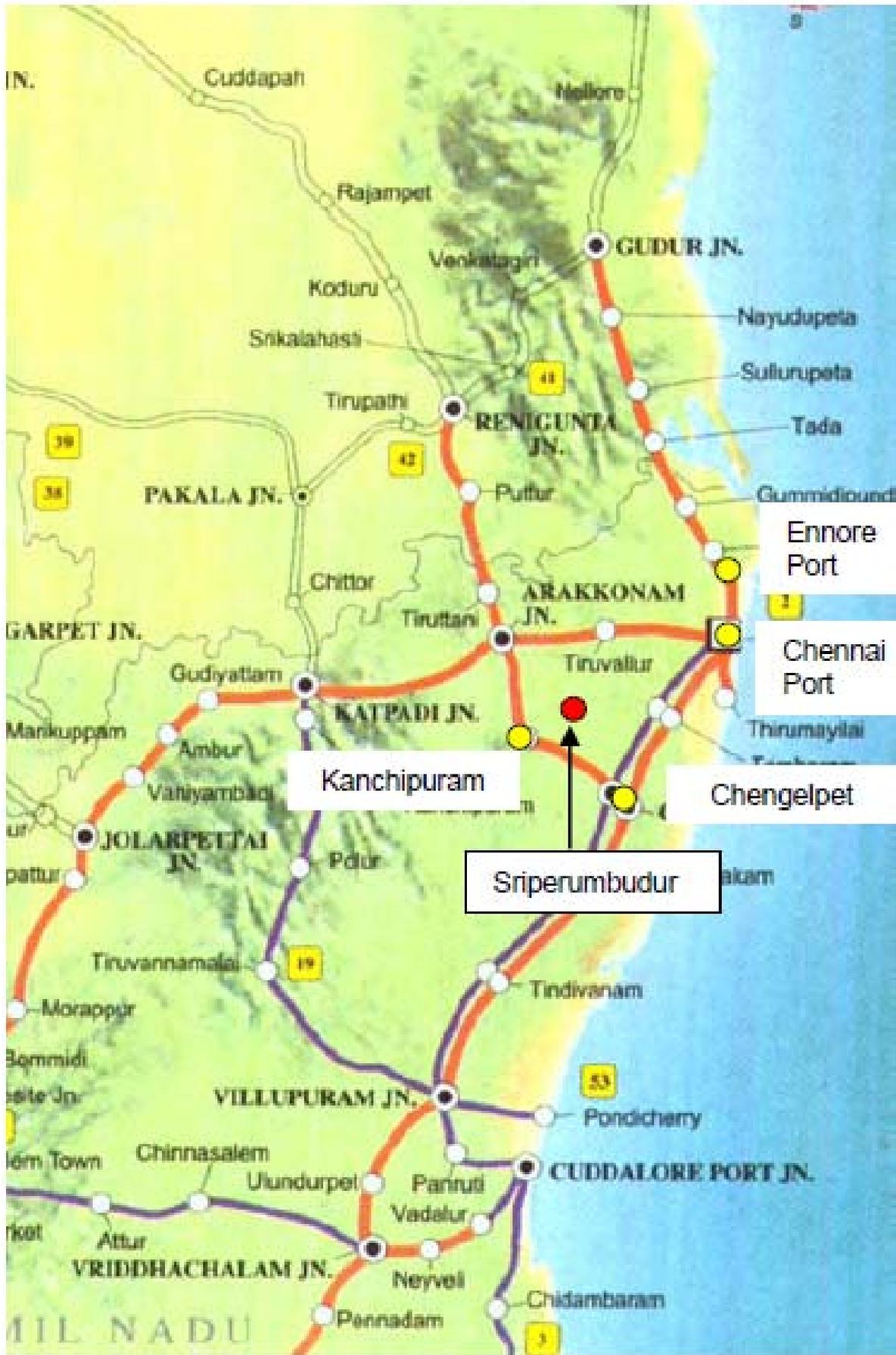


Figure A2-21. Ennore

