

Eastern Seaboard Development Plan Laem Chabang Industrial Estate Project (1) (2)

Report Date: September 1999
Field Survey: November 1998

1 Project Summary and Japan's ODA Loan

(1) Background

As part of the Eastern Seaboard Development Plan, the development of the Laem Chabang area was planned to keep up with the necessity of an international deep port which will work as a substitute for Bangkok Port as well as the necessity of development of an industrial estate receiving export oriented industries. Laem Chabang area is expected to be a light industries' core base by constructing an industrial estate of export processing industries and general light industries in the neighboring land of the new international deep port which will take over the functions of Bangkok Port in the future.

(2) Objectives

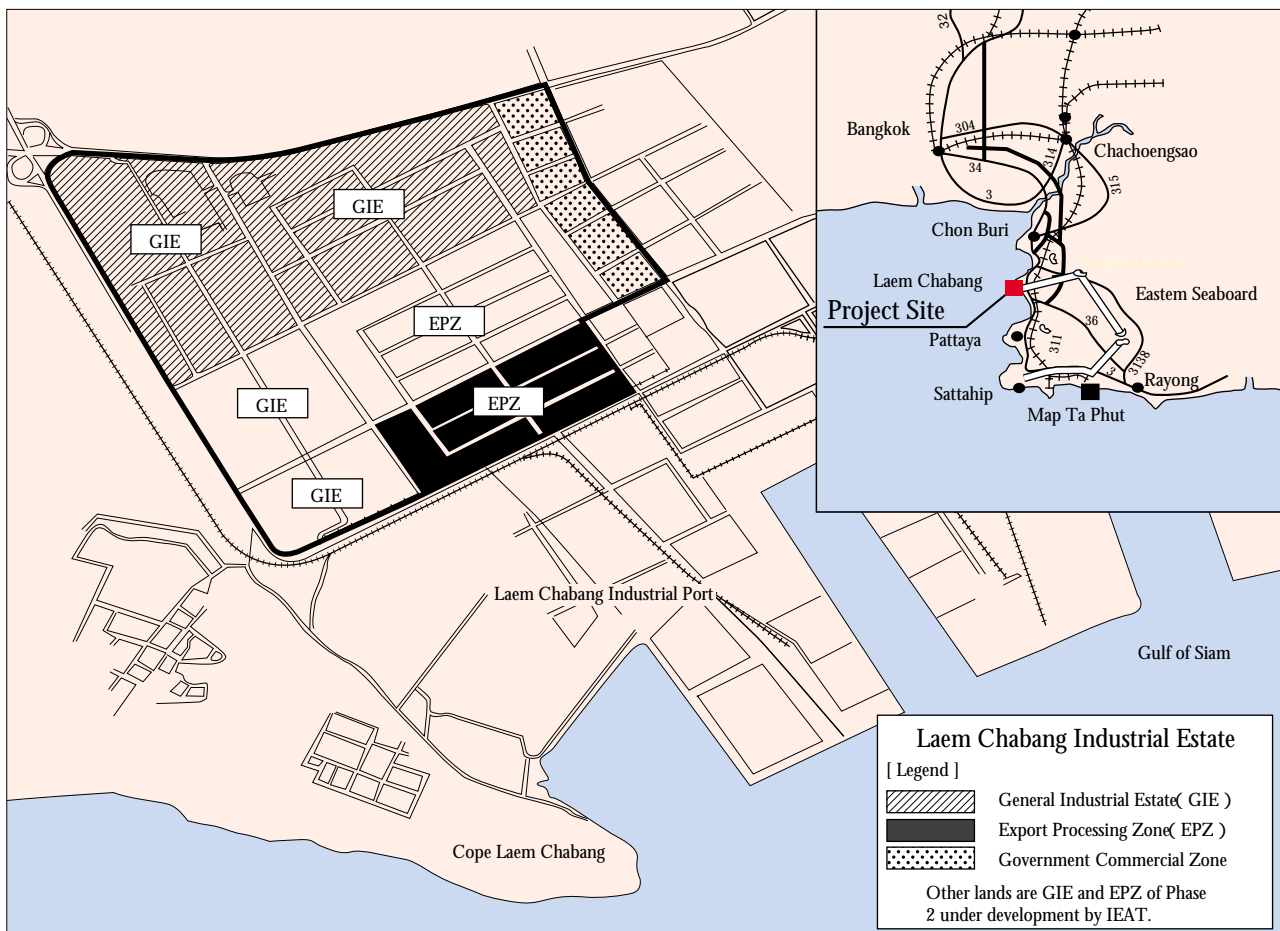
To provide a high-quality and low-cost industrial estate for light industries of export oriented type.

(3) Project Scope

Construction of Laem Chabang Industrial Estate (formation of lands, and development of the infrastructure). ODA loans are intended to supply full amount of foreign currency portion and a part of local currency portion for total project expenses.

(4) Borrower/Executing Agency

Both are Industrial Estate Authority of Thailand (IEAT) (Loan guaranteed by the government of Thailand)



(5) Outline of Loan Agreement

	Phase (1)	Phase (2)
Loan Amount	¥2,922 million	¥3,003 million
Loan Disbursed Amount	¥2,576 million	¥1,989 million
Date of Exchange of Notes	September 1985	September 1987
Date of Loan Agreement	October 1985	September 1987
Loan Conditions		
Interest Rate	3.5%	3.0%
Repayment Period(Grace Period)	30 years (10 years)	30 years (10 years)
Final Disbursement Date	October 1992	September 1992

2 Analysis and Evaluation

(1) Project Scope

This project was halted for one year and one month, due to temporal suspension of the Eastern Seaboard Development Plan as a consequence of the reevaluation by the government of Thailand of foreign loan borrowing plans. When implementation was restarted, the project scope needed to be reviewed taking into consideration the changes in circumstances which had occurred during the suspension, and as a result, the area for development in the industrial estate was nearly doubled to respond to the increasing number of foreign companies moving into Thailand. Currently, considering that most of the land lots in the industrial estate are already contracted (occupancy agreement is lease-based for this industrial estate), the expansion was proper. Furthermore, the purification plant in the industrial estate constructed by this project is originally planned to supply water to the new housing complex which accompanies the development of the industrial estate, but this plan was canceled so that the installed capacity of the purification plant and that of the sewage treatment plant were reduced accordingly. We can say that this change was also proper, reflecting the situation at that time. Moreover, regarding solid waste treatment, as a result of the study in the detailed design, an incinerator was installed.

(2) Implementation Schedule

Compared with the revised plan after restarting the project, the schedule was one year behind. The primary causes of the delay were the construction boom in Thailand at the time which caused hindrances in procuring building materials, and the rainy season which was not considered well in designing the construction process.

(3) Project Cost

Compared with the revised plan after restarting the project, slightly more than 60% of the original project cost had been expended. The primary reason for the decrease in project expenses is the reduction in expense for the purification plant and sewage treatment plant. The capacity of these facilities has been reduced to approximately two thirds of the initial plan.

Comparison of Original Plan and Actual

Item	Plan	Actual
1. Project Scope		
Land Formation (Preparation work / soil improvement)	368 ha/96 0,000 m ³	569 ha/3,706,200 m ³
Purification Plant (Treated water supply capacity)	35,800 m ³ /day	27,000 m ³ /day
Sewage plant (Sewage treatment capacity)	33,200 m ³ /day	20,500 m ³ /day
Solid Waste Treatment	Scheduled to be studied in the detailed design stage	One incinerator
Standard Factory etc.	24,450 m ²	19,920 m ²
Other Facilities	Roads, bridges, drainage, etc.	Roads, bridges, drainage, etc.
2. Implementation Schedule		
(commencement to completion)	July 1988 to March 1990	October 1988 to March 1991
3. Project Cost		
Foreign currency	¥5,024 million	¥3,711 million
Local currency	836 million bahts	505 million bahts
Total	¥9,590 million	¥6,110 million
Exchange Rate	1 baht = ¥5.5	1 baht = ¥4.75

Note: Original Plan is that of appraisal of the Phase (2) of the project (after restarting the project).

(4) Project Implementation Scheme

The executing agency was Industrial Estate Authority of Thailand (IEAT). IEAT was founded in 1972 for the purpose of construction, operation, and maintenance of industrial estates and export processing zones. As of 1998 it had jurisdiction nationwide over 29 industrial estates (including those developed jointly with private firms). Construction of this project was delayed, but most of the reasons thereof were external causes. It can be said that there is no major problem with the capability of IEAT as an executing agency.

(5) Operations and Maintenance

An on-site office is built for each industrial estate by IEAT. In the case of this project, operation and maintenance of purification plant, sewage treatment plant and rainwater drainage ditches have been commissioned to a private company. IEAT operates and maintains roads and other structures. Furthermore, IEAT holds a regular monthly meeting with four organizations composed of firms occupying the estate. Problems of maintenance are discussed with due consideration; however, some investors point out the problem of inadequate maintenance, for example, roads, and the attention should be paid to these claims.

(6) Operational Performance

The number of firms occupying Laem Chabang Industrial Estate is increasing steadily as shown in the following table (the figures are the number of firms signing contracts in the given year). Occupants are manufacturers of electrical products, automobile related products, etc.

Year	1991	1992	1993	1994	1995	1996	1997	1998	Total
General factory district	10	8	6	10	4	2	4	2	46
Export processing district	5	-	8	6	9	4	7	4	43
Standard factories	-	-	1	4	3	-	3	1	12
Total	15	8	15	20	16	6	14	7	101

The utilization ratio of facilities for water and sewage treatment in Laem Chabang Industrial Estate are shown in the table below, which represents a utilization rate of approximately 40% of capacity. This might be because firms moving into the industrial estate are those not using much water since there are many types of industries that recycle a large percentage of water (electric products and automobile related industries), and because some firms planning for future factory expansion are not yet utilizing a portion of their area. Compared with the facilities of other industrial estates, the capacity of these facilities is not overly large, rather appropriately sized when we consider the nature of the industrial estate which should provide satisfactory facilities no matter what types of firms move in. Thus, as long as maintenance is adequate, the current utilization status is not a major problem.

Year	1991	1992	1993	1994	1995	1996	1997	1998*
Water treatment (%)	2.0	7.1	20.3	33.5	34.0	44.4	43.4	46.9
Sewage treatment (%)	0.9	4.0	12.0	20.0	20.5	30.4	33.3	39.8

Note: *The figures for 1998 are performance values for January through September.

The years 1991 - 1994 are IEAT estimates. The years 1995 and later are actual BJT values.

The incinerator for solid waste is not being used, since landfill disposal by the neighboring municipality, Si Racha, is less expensive. (IEAT is maintaining the incinerator for future utilization.) The capacity may be limited for the landfill disposal, so it may be desirable to begin discussions with the municipality of Si Racha regarding the timing and quantity of waste to be treated in the incinerator to achieve the reduction of waste amount from the estate in the future. On that occasion, however, consideration must be given to new environmental problems that will arise due to exhaust gasses from the incinerator.

(7) Management Performance of IEAT

IEAT, compared to its business scale, has earned sizable profits every year (ratio of recurring profit to sales in 1995 - 1997: 30% - 34%), and its management performance can be said to be favorable. As the income has increased greatly from the land lease and various services to enterprises along with increase in the number of enterprises in this industrial complex, the operation revenue grew by 1.5 times from 1,158 million bahts in 1995 to 1,811 million bahts in 1997.

(8) Project Effects and Impacts

(i) Quantitative Effects

(a) Occupancy

The number of firms occupying the industrial estate at the time of field survey (1998) has reached a total of 101 companies. The occupancy of the General Industrial Zone and standard factories is 100%, and that of the Export Processing Zones was about 93% of the sites.

(b) Creation of Employment

At the time of appraisal, it is expected that jobs for 25,000 workers will be created in firms occupying the Laem Chabang Industrial Estate by the year 2000, while the 30,402 workers were employed at the end of 1997, so it can be said that the impacts of employment creation far exceeds the initial assumptions.

(c) Financial Internal Rate of Return (FIRR)

Calculating based on performance, FIRR of this project is 12.8%.

(ii) Qualitative Effects

(a) Industrialization of the Eastern Seaboard

By implementing Eastern Seaboard Development Plan, the Eastern Seaboard achieved a rapid economic growth. From 1991 through 1996, the real GNP per capita for all of Thailand achieved an annual average growth rate of 6.6%, but the real GNP per capita for the Eastern Seaboard and Chonburi Province exceeded that of Thailand remarkably, achieving annual average growth rates of 11.7% and 10.9% respectively. Furthermore, looking at the value added of manufacturing, Chonburi Province grew at a rate twice that of the nation. The value added of manufacturing by said province occupies as much as 11.3% of that of the nation. Laem Chabang Industrial Estate is the main one among the five industrial Estates in Chonburi Province, so it can be said that it has played a major role in the industrialization of this province.



Offices of Industrial Estate Authority of Thailand, the executing agency

A Thai Plant in the Estate



Sewage Treatment Plant in the Estate