Thailand: Sector Programme Railways II

Ex-post evaluation

OECD sector	21030 / Railway sector	
BMZ project ID	1992 65 621	
Project-executing agency	State Railway of Thailand (SRT)	
Consultant	DE-Consult	
Year of ex-post evaluation	**2005**	
	Project appraisal (planned)	**Ex-post evaluation (actual)**
Start of implementation	12 / 1993	04 / 1996
Period of implementation	24 months	86 months
Investment costs	EUR 4.62 million	EUR 3.26 million
Counterpart contribution	EUR 0.87 million	EUR 0.65 million
Financing, of which Financial Cooperation (FC) funds	EUR 3.75 million	EUR 2.61 million*
Other institutions/donors involved		
Performance rating	4	
• Significance / relevance	4	
• Effectiveness	4	
• Efficiency	4	

* The loan was reduced by residual funds of EUR 1.15 million

Brief Description, Overall Objective and Project Objectives with Indicators

The FC project comprised the financing of spare parts for SRT imported from Germany. The original scope of supplies to be delivered was adjusted in the course of the project implementation in accordance with the changing needs of SRT. Originally the following types of spare parts were to be financed: (a) compressed-air brake equipment (dual brakes) for 54 locomotives (share of costs: 27%), (b) an underfloor wheel lathe (share of costs: 30%), (c) three diesel engines for Krupp locomotives mainly used for shunting (share of costs: 42%), and (d) consulting services (share of costs: 1%). The following replacement and equipment components were actually supplied: (a) compressed-air brakes for 160 freight cars and 100 passenger cars (share of costs: 45 %), (b) one underfloor wheel lathe (share of costs: 40 %), (c) a spring-ring closing machine as workshop equipment and an 80 t gantry crane (share of costs: 14.7 %), and (d) a short-term expert (share of costs: 0.3 %).

The overall objective is to contribute to maintaining the current volume of rail-based freight and passenger transport by SRT.

Originally the indicator for the achievement of the overall objective was to maintain the transport volume of SRT existing at the time of the project appraisal (1992) of 3.4 billion tonne-

kilometres (tkm) and 12.8 billion person-kilometres (pkm). In 1996 the indicator values were adjusted to 3.1 billion tkm and 14.7 billion pkm, respectively.

The original project objectives were (a) to ensure a more flexible use of locomotives, (b) toll avoid longer downtimes of the rolling stock at the Bank Sue workshop, (c) to achieve an acceptable reliability of the three Krupp locomotives.

The original indicators for the achievement of the project objective were

(a) with regard to the retrofitting of 54 locomotives to dual brakes and the remotorisation of three Krupp locomotives: an availability of 80% and an annual kilometric performance of 200,000 km for Alstrom locomotives and of 100,000 for General Electric and Krupp locomotives (average value to be achieved three years after commissioning).

b) with regard to the underfloor wheel lathe: at least 4,000 wheelsets (for both cars and locomotives) are machined per year.

After the type of spare parts financed under FC had changed in the course of the project implementation the project objectives and the indicators were modified as follows in 1996:

Project objective: Increase in the availability of the rolling stock

Indicators for the achievement of the project objective:

(a) Workshop machines have been installed and work properly; downtimes < 3 days/year.

(b) Brakesets have been installed exclusively in the identified 160 freight cars and 100 passenger cars, retrofitting times are adhered to, the SRT's budget for spare parts is sufficient.

(c) 4,000 wheelsets (cars and locomotives) are machined per year.

Overall, the decision to adjust the definition of the project objective to significant changes in the type and volume of measures implemented was right.

Project Design / Major Deviations from the original Project Planning and their main Causes

At the time of the project appraisal the provision of spare parts was intended to support the locomotive section of SRT (retrofitting of the brake systems of 54 locomotives, remotorisation of three Krupp locomotives). According to the project concept the project was to be implemented by SRT largely on its own with an FC consultant providing support only in specific cases (price checking). This comprised the preparation of procurement documents including precise specification, final acceptance of the components delivered and the assembly of brake parts and engines.

The type and scope of the spare parts delivered in the framework of the project changed significantly as compared with the deliveries planned at project appraisal. This is due to the changed needs on the part of SRT, which resulted from the delays that occurred in the start of the project: The precondition for the signing of the loan agreements was the presentation of a satisfactory restructuring plan for SRT. This plan was presented only in 1994. Further delays occurred in the contract negotiations and in consequence the loan agreement was signed only in 1995. By that time SRT had already on its own implemented measures that required special priority (procurement of new shunting locomotives and retrofitting of brake systems on locomotives), with the result that other planned investments had to be postponed. In coordination with the BMZ the FC funds that were no longer required for the planned brake systems for locomotives were instead used for equipping the freight and passenger cars with brakes – with hindsight this rededication of funds proved very useful.

Due to the above-mentioned modifications the foreign exchange costs of the project measures financed from FC fell from EUR 3.75 million planned at project appraisal to actually EUR 2.61 million. After the project had been terminated a substantial amount of approximately EUR 1.15 million was left and subsequently the FC loan was reduced by this amount.

Besides the changed scope of project measures, the before-mentioned delayed start of the project (planned: December 1993; actual: April 1996) and the extended period of implementation (planned 24 months; actual: 86 months) constitute a major deviation from the original planning. One of the reasons for the extended period of implementation was the substantially longer delivery period for the brake parts (planned: 10 months; actual: 33 months). Other reasons were the delays in the preparation of the tender documents and the protracted evaluation of the tenders by SRT. Moreover, due to the lengthy bureaucratic processes in Thailand it took a lot of time for SRT to obtain the required exceptional authorisations (according to Thai regulations international competitive bidding would have been required; at project appraisal, however, bidding limited to Germany and direct awarding of contracts upon prior price checks had been envisaged).

Key Results of the Impact Analysis and Performance Rating

The main result of the project was the complete mounting of compressed-air brakes in altogether 160 freight cars and 100 passenger cars. The improved brake systems enable higher train speed and higher safety and make the transport service offered by SRT more attractive. In addition, the capacity utilisation of the rolling stock, which currently comprises 6,900 freight cars (615 of which need repair) and 1,239 passenger cars (290 of which need repair), is improved. Other results of the project are improved maintenance capacities of SRT due to the improved technical equipment of the Bang Sue workshop. The delivered underfloor wheel lathe was installed as planned and is used adequately.

The transport performance of SRT at the time of the project appraisal in 1992 was 3.4 billion tkm and 12.8 billion pkm. While the performance in freight transport rose to 4.1 billion tkm in 2004, passenger transport fell to 9.3 billion pkm. The reason is assumed to be the declining competitiveness of the railway as compared with alternative means of transport, especially road traffic, which is supported through comparatively low fuel prices.

The financial situation of SRT has been strained for many years. The restructuring plan drawn up in 1994, which envisaged in particular a marked increase in state payments to compensate for subsidised tariffs (Public Service Obligation, PSO), was not put into practice. Though the Thai government decided in 1997 to successively convert SRT into a private-sector enterprise the related measures have not been implemented until today. In the area of passenger transport SRT continues to be bound by state requirements concerning tariffs. The result is insufficient coverage of costs. On average in the years 2001 to 2004 the revenue earned by SRT from freight and passenger transport covered only approximately 69% of current operating expenses (not including interest and depreciation). SRT continuously produced substantial deficits (2004: approx. EUR 130 million) and in consequence its liquidity situation is very strained. Short-term liabilities (2004: EUR 176 million) clearly exceed short-term assets (2004: EUR 53 million) and the equity ratio fell from 35% in the early 1990s to 25% in 2004.

Due to the unsatisfactory financial situation of SRT there is only insufficient funds available for the rolling stock. According to international standards annual maintenance budgets for freight and passenger cars are to amount at least to EUR 0.08 and EUR 0.16, respectively, per car-km. Currently the corresponding values for SRT are EUR 0.006 and EUR 0.03, respectively per car-km, which is far too low to ensure the sustained operation of the cars.

In the period 2001 to 2004 approximately 4,200 wheelsets were machined on the underfloor wheel lathe. In 2001 two technical failures occurred on the machine and in the years 2003 and 2004 there was one failure each. Repair times lasted between 1 and 5 days (average: 3.5 days). No technical failure occurred on the gantry crane; one failure occurred on the spring-ring closing machine (repair time: 8 hours). The total annual budget of SRT available for maintenance and repair of workshop equipment on average for the years 2001 to 2004 was only EUR 277,000. In particular the maintenance of the underfloor wheel lathe takes a lot of time and effort (approximately EUR 31,000 per year). A maintenance contract with the supplier was not concluded though a corresponding recommendation had been given on the occasion of the final inspection. According to the information supplied by SRT only curative maintenance is carried out.

Project objective: The respective indicators (with regard to installation, repair times and the number of wheelsets handled) were largely fulfilled for the components 'underfloor wheel lathe' and 'workshop equipment'. As regards the component 'brake equipment" all equipment was properly installed. However, since the maintenance budget available to SRT is on the whole insufficient to ensure the proper maintenance of the cars the sustainability of the project is at risk.

Overall objective: Owing to the strong decline in passenger traffic, which has a larger volume than freight traffic and was only partly compensated for through increases in freight traffic, the total transport volume of SRT dropped substantially since the project appraisal (-18%). The indicators for the achievement of the overall objective were not fulfilled. The share of the railways in total passenger and freight traffic, which in 1989 still accounted for 9% and 5%, respectively, are estimated today to have declined to 3% in passenger traffic and 2% in freight traffic. Overall, the importance of the railways compared to other means of passenger and freight transport in Thailand has declined considerably.

Overall, our assessment of the project's developmental impacts is as follows:

The brake systems supplied were installed in the respective passenger and freight cars. The maintenance budget of SRT for cars is generally too low and, thus, severely jeopardizes the sustainability of operation. The same goes for the workshop equipment supplied: it was properly installed and is used roughly to the extent planned at project appraisal, however, sustainability risks exist due to insufficient maintenance. Given the persistent financial difficulties of SRT an improvement of this situation is not to be expected. Therefore, we classify the project's sustainable effectiveness as slightly insufficient (sub-rating 4).

On principle the project was suitable to achieve an improvement in the area of rolling stock and, thus, to contribute to maintaining SRT's transport performance – even though the low financial volume of the project has to be taken into account. The decline in the share of the railways in total transport, especially in the area of passenger transport, which is most important for SRT, also had a clearly dampening effect on the project's significance. Therefore, we rate the project's relevance/ significance as slightly insufficient (sub-rating: 4).

At the time of the project appraisal no calculation of the project's financial rate of return was made. This seemed acceptable given the diversity of the components financed. The costs incurred under the FC financed project components were on the whole acceptable despite the fact that the competitive bidding had been limited to Germany and this lead to certain restrictions in price competition. In terms of allocation efficiency, SRT is not able in the longer term to push through tariffs that would at least cover its operating costs. Therefore, overall we judge the project's efficiency to be slightly insufficient (rating: 4).

Under consideration of the key criteria mentioned above, we assess the project's developmental effectiveness on the whole as slightly insufficient (rating 4).

The project targeted neither gender-specific goals, direct poverty reduction, environmental protection goals nor the improvement of governance. Consequently, it has not had any corresponding impacts.

General Conclusions

The main reason for the insufficient developmental effectiveness of the project is the unfavourable institutional framework. SRT is subject to government restrictions when setting tariffs in passenger transport, however without receiving any compensation for such politically motivated subsidies, and as a state-owned company is also subject to inflexible regulations governing the public sector. On the one hand it would be necessary hat the government compensates the railway operator for politically intended subsidies by making corresponding payments. On the other hand the concessioning/privatisation of the railways would allow the introduction of private-sector procedures and management and, thus, the railways would become more flexible and efficient.

Legend

Developmentally successful: Ratings 1 to 3	
Rating 1	**Very high or high degree of developmental effectiveness**
Rating 2	**Satisfactory developmental effectiveness**
Rating 3	**Overall sufficient degree of developmental effectiveness**
Developmental failures: Ratings 4 to 6	
Rating 4	**Overall slightly insufficient degree of developmental effectiveness**
Rating 5	**Clearly insufficient degree of developmental effectiveness**
Rating 6	**The project is a total failure**

Criteria for the Evaluation of Project Success

The evaluation of the "developmental effectiveness" of a project and its classification during the ex-post evaluation into one of the various levels of success described in more detail below concentrate on the following fundamental questions:

- Are the **project objectives** reached to a sufficient degree (aspect of project **effectiveness**)?
- Does the project generate sufficient **significant developmental effects** (project **relevance** and **significance** measured by the achievement of the overall development-policy objective defined beforehand and its effects in political, institutional, socio-economic and socio-cultural as well as ecological terms)?
- Are the **funds/expenses** that were and are being employed/incurred to reach the objectives **appropriate** and how can the project's microeconomic and macroeconomic impact be measured (aspect of **efficiency** of the project conception)?
- To the extent that undesired **(side) effects** occur, are these tolerable?

We do not treat **sustainability**, a key aspect to consider for project evaluation, as a separate category of evaluation but instead as a cross-cutting element of all four fundamental questions on project success. A project is sustainable if the project-executing agency and/or the target group are able to continue to use the project facilities that have been built for a period of time that is, overall, adequate in economic terms, or to carry on with the project activities on their own and generate positive results after the financial, organisational and/or technical support has come to an end.