

**Egypt: Improvement of Freight Transport in Egyptian National Railways (ENR)**

**Ex post evaluation**

<b>OECD sector</b>	21030/Rail transport	
<b>BMZ project ID</b>	(1) Investment: 1995 66 134 (2) Complementary measure: 1995 70 441	
<b>Project executing agency</b>	Egyptian National Railways (ENR)	
<b>Consultant</b>	DE-Consult	
<b>Year of ex-post evaluation report</b>	<b>2010 (sample 2010)</b>	
	<b>Project appraisal (planned)</b>	<b>Ex-post evaluation (actual)</b>
<b>Start of implementation</b>	Q 1 1996	Q 2 1997
<b>Period of implementation</b>	40 months	102 months
<b>Investment costs</b>	(1) EUR 39.8 million (2) EUR 2.56 million	(1) EUR 46.1 million (2) EUR 2.05 million
<b>Counterpart contribution</b>	EUR 13.2 million	(1) EUR 20.53 million
<b>Financing, of which Financial Cooperation (FC) funds</b>	EUR 25.57 million	(1) EUR 25.57 million (2) EUR 2.05 million
<b>Other institutions/donors involved</b>	<>	<>
<b>Performance rating</b>	4	
• <b>Relevance</b>	4	
• <b>Effectiveness</b>	3	
• <b>Efficiency</b>	4	
• <b>Overarching developmental impacts</b>	5	
• <b>Sustainability</b>	4	

**Brief description, overall objective and project objectives with indicators**

The project comprised the overhaul of 4,223 freight cars of Egyptian National Railways (ENR) and was intended to contribute to the increased transportation of strategic bulk goods by rail as an environment-friendly and energy-efficient transport means (overall objective). This was to be measured by an increase in the quantity of goods transported by ENR by 6.5% a year as well as in ENR's income from freight transport by 8.5% a year in real terms. The project objectives were defined as follows:

1. Improved, sustainable availability of the overhauled freight cars, amounting to 90% (indicator). Note: in retrospect, this definition largely refers to physical results, whereas the second objective (cited below) emphasises the utilisation aspect, which would have sufficed (possibly with availability as a supplementary indicator).
2. The more efficient operation of goods traffic and increased turnover in freight transport, with the following indicators:

- General adherence to the adjusted timetables for overhauled freight car trains (maximum excess travel times of 20% in the first year, 15% in the second year and 10% in the third year)
- Reduction of turnaround times for cars to 8 days
- Monthly incoming orders measured in tonnes

The environment-friendly and energy-efficient transport of strategic bulk goods, such as food, building materials and fuels by rail ultimately aimed at improving supply to particularly poorer sectors of the population and contributing to economic growth and poverty reduction. Complementary institutional support was delivered to assure ongoing maintenance of the cars and organise their efficient deployment, including targeted marketing of ENR transport services.

The investment measures included the rehabilitation (general overhaul including the replacement or installation of brake systems) of 4,223 freight cars identified as in need of repair and refitting. Furthermore, in the framework of institutional support, ENR personnel received assistance in workshop operation and management as well as in setting up a marketing department for freight transport.

Of the EUR 48.25 million in total costs, fixed asset investments accounted for EUR 46.1 million, primarily for general overhaul and braking equipment, making up the bulk of investment costs. The FC loan of EUR 25.57 million was made available to ENR as equity capital. Per car unit, costs amounted to EUR 10,916, which can be rated as favourable. The additional personnel support was financed in full with EUR 2.05 million from FC funds. There were no indications of any misallocation of funds.

### **Project design/major deviations from original planning and main causes**

The total implementation period amounted to about 10 years – not 5 years, as planned initially, as workshop output proved to be slower than expected. The primary reasons for this were delayed deliveries of imported spare parts, with supplier bottlenecks, insufficient local procurement due to financial and logistical deficits on ENR's side and the poor technical condition of most cars as main causes. In line with common practice at the time, the consultancy services to support ENR in planning and implementation were awarded directly to DE-Consult, who had already been contracted under a previous project with ENR.

The concept of singling out increased freight car availability as only intervention proved inappropriate, as traction/ locomotive capacity did not increase in parallel. Although a general overhaul of the ABB-Henschel engines had begun shortly before this project, it did not suffice to remove existing traction bottlenecks. This impinged on the adequate utilisation of increased transport capacity, which only later on was put to better use, when another 60 engines were given a general overhaul with funding from the Arab Fund for Economic and Social Development in 2006. In hindsight, gearing FC support to overhauling both cars and engines would have delivered better results.

As a state-owned enterprise with little entrepreneurial initiative, ENR operations are cumbersome: Corporate policy, investments, rates and (relatively low) pay are (co)decided externally, at least in part, and there are hardly any performance incentives. These general sector conditions also proved detrimental to the motivation and qualification of personnel.

Personnel training in the workshop as such proved nonetheless effective. The work was carried out at a high quality standard with only one return during the one-year warranty period. On the other hand, marketing support was ineffective, as the

information produced was not used by the management and attempts to introduce better marketing practices failed due to lack of interest/ support by management and low motivation on the part of personnel.

As such, i.e. disregarding institutional-systemic constraints within ENR, the measures for overhauling freight cars and training workshop personnel were suitable for addressing the problem and adequate. This does not hold for marketing support, since this intervention could only have been effective in a commercial environment.

Consultation with other donors aiming, for example, at a concomitant increase in locomotive capacities, apparently did not take place. This would have been expedient, however, for addressing traction constraints at an early stage. Rail transport is now no longer a priority of German-Egyptian development cooperation.

The National Railways Restructuring Project (NRRP) initiated by the World Bank in 2009 aims at reforming in-house procedures and management operations of ENR and to gear corporate policy towards results-oriented management and efficiency.<sup>1</sup> ENR has been subdivided into so-called strategic business units (SBU), with plans initiated to introduce a performance-based pay system. It remains to be seen how far these interventions will reform the corporate culture of ENR.

### **Key results of impact analysis and performance rating**

Both the microeconomic and macroeconomic effect of the project have been small, since they neither led to sustainable revenue growth for ENR nor to substantially improved freight services.

As identified at project appraisal, the high sustainability risk posed by the ENR's general institutional weakness and, in particular, low staff motivation has materialised; equally competition from private haulage firms has increased substantially, which was perceived as an emerging trend at that time. These two factors will, in our opinion, continue to pose the main challenges in future.

Gender objectives and direct poverty impacts were not intended by the project.

No specific target group was identified. The project impacts relate solely to ENR, as the causal effects into the general economy were blocked through the failure to achieve the overall objective. For ENR, the desired results have been achieved: It disposes of a fleet of thoroughly overhauled cars equipped with brakes as well as qualified personnel to maintain them (at least for a certain time). If the above-mentioned efforts in reorganisation result in successful ENR operations, the project impact can ultimately achieve an effect on the general economy due to increased freight capacity. The project has not had any discernible unwanted side effects.

As to project relevance, the anticipated results of the FC project with its bias on freight cars could only have been realistically achieved, if concerted, concurrent action had been taken, possibly by third parties, to address the technical bottleneck in traction capacity and the institutional constraint within ENR. Evidently, pertinent donor coordination did not take place. With particular regard to the second point, it is difficult

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<sup>1</sup> Details on NRRP are available from the World Bank website at [http://web.worldbank.org/external/projects/main?menuPK=51447259&pagePK=51351007&piPK=64675967&theSitePK=40941&menuPK=64187510&searchMenuPK=51351213&theSitePK=40941&entityID=000334955\\_20090224045050&searchMenuPK=51351213&theSitePK=40941](http://web.worldbank.org/external/projects/main?menuPK=51447259&pagePK=51351007&piPK=64675967&theSitePK=40941&menuPK=64187510&searchMenuPK=51351213&theSitePK=40941&entityID=000334955_20090224045050&searchMenuPK=51351213&theSitePK=40941)

to tell how far and how quickly the specific institutional environment in Egypt and ENR can improve. Whilst being priority of German-Egyptian development cooperation, support to the transport sector has meanwhile phased out. Relevance is assessed as unsatisfactory (Subrating 4).

The overhaul project was basically effective. In hindsight, however, the only suitable indicator has proved to be the availability of freight cars. The 90% indicator lacks a timeframe, since availability typically declines again after overhaul. A sample survey by the consultant put availability in 2006 at about 90%, the anticipated figure. More recent figures are not available.

The indicators of turnaround time of freight cars, incoming orders and adherence to timetables depend on a variety of external factors that could not be influenced in the framework of the project. Nevertheless, turnaround time of a maximum of 8 days can reportedly be maintained on average (4-6 days for private-sector transport; well above this in public operations). The indicator for incoming orders measured by quantity of transported goods in tonnes overlaps with the overall objective indicator of freight volume. It was inherently invalid and would have had to be recorded in tkm instead of in t to measure actual car utilisation. Due to higher average transport distance, annual increase here amounts to 2%. The indicator, adherence to timetables, was abandoned in 2005 after repeated accidents due to speeding, with railtrack conditions and engine capacities playing a major role.

In complementary technical assistance, workshop training proved effective, whereas marketing support did not. Altogether, effectiveness of the project is assessed as satisfactory (Subrating 3).

Overarching developmental impacts were not achieved by the project to any notable extent: According to information from ENR (not fully available), freight volume increased on average between 1998/99 and 2007/2008 by only 1% a year as compared with the target of 6.5%. While freight volume growth rates still remained within the target indicator range from 1998/99 to 2000/2001 (1999/2000: 10% a year; 2000/2001: 6% a year), growth rates have been largely negative as of 2001/2002. As a consequence, the cumulated annual growth rate in freight volume up to 2009 averaged 1 per cent. A substantial increase in energy-efficient and environment-friendly transport of bulk goods by rail, defined as overall objective, could therefore not be achieved. On the one hand, the main reasons for this were operational shortcomings due to the above-mentioned structural weaknesses, the insufficient marketability of the rail services and a basically passive market approach by ENR. On the other, growing competition from haulage firms together with an economic shift away from state-owned towards private enterprises, transport contracts are being awarded under purely commercial instead of political criteria. Turnover from freight transport increased nominally by 1% a year but diminished in real terms by 5% a year compared with the target increase of 8.5% a year. No other impacts were ascertained. Impact was clearly inadequate (Subrating 5).

Efficiency at project level, i.e. production efficiency, is good, considering the favourable unit costs, although the implementation period turned out to be twice as long as originally planned. In terms of resource allocation, however, no significant microeconomic and macroeconomic contribution is discernible – despite high costs and loan terms. We therefore rate overall efficiency as unsatisfactory (Subrating 4).

Under the present circumstances, the project's sustainability can at best be considered assured in as far as ENR may be able to once more access donor funds for another general overhaul. Otherwise, the current institutional and financial conditions do not

allow for earning sufficient funds to independently sustain operations; nor are working conditions at ENR conducive to motivating qualified personnel or retaining them for the longer term. Sustainability is therefore assessed as unsatisfactory (Subrating 4).

Weighing up the above key criteria, we assess the developmental efficacy of the project as unsatisfactory overall (Rating 4).

### **General conclusions**

As a complex system, railways can only have a developmental impact if all the necessary segments are interlinked to ultimately provide a competitive transport service on the market. Isolated interventions, such as overhauling the freight car fleet, can only succeed, if capacity in other sections is already adequate or is at least being improved in parallel. This holds particularly true, if large scale institutional and organisational reforms are needed.

## Notes on the methods used to evaluate project success (project rating)

Projects are evaluated on a six-point scale, the criteria being relevance, effectiveness (outcome), “overarching developmental impact” and efficiency. The ratings are also used to arrive at a final assessment of a project’s overall developmental efficacy. The scale is as follows:

- 1 Very good rating that clearly exceeds expectations
- 2 Good rating fully in line with expectations and without any significant shortcomings
- 3 Satisfactory rating – project falls short of expectations but the positive results dominate
- 4 Unsatisfactory rating – significantly below expectations, with negative results dominating despite discernible positive results
- 5 Clearly inadequate rating – despite some positive partial results the negative results clearly dominate
- 6 The project has no positive results or the situation has actually deteriorated

A rating of 1 to 3 is a positive assessment and indicates a successful project while a rating of 4 to 6 is a negative assessment and indicates a project which has no sufficiently positive results.

### **Sustainability is evaluated according to the following four-point scale:**

#### Sustainability level 1 (very good sustainability)

The developmental efficacy of the project (positive to date) is very likely to continue undiminished or even increase.

#### Sustainability level 2 (good sustainability)

The developmental efficacy of the project (positive to date) is very likely to decline only minimally but remain positive overall. (This is what can normally be expected.)

#### Sustainability level 3 (satisfactory sustainability)

The developmental efficacy of the project (positive to date) is very likely to decline significantly but remain positive overall. This rating is also assigned if the sustainability of a project is considered inadequate up to the time of the ex post evaluation but is very likely to evolve positively so that the project will ultimately achieve positive developmental efficacy.

#### Sustainability level 4 (inadequate sustainability)

The developmental efficacy of the project is inadequate up to the time of the ex post evaluation and is very unlikely to improve. This rating is also assigned if the sustainability that has been positively evaluated to date is very likely to deteriorate severely and no longer meet the level 3 criteria.

The overall rating on the six-point scale is compiled from a weighting of all five individual criteria as appropriate to the project in question. A rating of 1 to 3 indicates a “successful” project while a rating of 4 to 6 indicates an “unsuccessful” project. In using (with a project-specific weighting) the five key factors to form an overall rating, it should be noted that a project can generally only be considered developmentally “successful” if the achievement of the project objective (“effectiveness”), the impact on the overall objective (“overarching developmental impact”) and the sustainability are considered at least “satisfactory” (rating 3).