

Vietnam: Dredger

Ex-post evaluation report

OECD sector	1) 21040 – Water transport 2) 11430 – Advanced technical and managerial training	
BMZ project ID	1) 2000 65 045 (real investment) 2) 2000 224 (training measure)	
Project executing agency	Waterways Dredging Company No. 1	
Consultant	1) Ingenieurbüro V. Patzhold 2) PwC Hanoi	
Year of ex-post evaluation report	2008	
	Project appraisal (planned)	Ex-post evaluation (actual)
Start of implementation	July 2000	November 2000
Period of implementation	23 months	42 months
Investment costs	EUR 13.1 million	EUR 12.8 million
Counterpart contribution	EUR 0.3 million	EUR 0.0 million
Finance, of which FC funds	EUR 12.8 million	EUR 12.8 million
Other institutions/donors involved	None	None
Performance rating	4	
• Relevance	3	
• Effectiveness	4	
• Efficiency	4	
• Overarching developmental impact	4	
• Sustainability	4	

Brief Description, Overall Objective and Project Objectives with Indicators

As an investment measure, the project comprised the procurement and commissioning of a hopper suction dredger (1,500 m³ capacity) to enlarge the dredging capacities of the executing agency, the Waterway Dredging Company 1 (WADRECO 1). Its operating area encompasses the northern seaports of Vietnam, particularly Hai Phong and Hon Gai. As part of a training measure, activities were carried out to improve administrative procedures at WADRECO 1 (including the introduction of PC-assisted financial management) and dredger operation as such (training measures for crew).

The objective of the project was the permanent removal of constraints on ongoing adequate maintenance dredging to keep shipping channels at major seaports clear, particularly the port of Hai Phong. Indicators for project objective achievement were: a) an annual dredging volume of at least 1.7 million m³ and b) a dredger operating time of at least 220 days/year.

The overall objective of the project was to help remove obstacles to shipping and prevent the attendant macroeconomic losses through waiting times due to tidal movements by means of sufficient maintenance dredging, particularly in Hai Phong and Hon Gai. Indicators were minimum required depths of 4 - 7 m in the operating area and an increase in port turnover at Hon Gai and Hai Phong.

In hindsight, the overall objective no longer conforms with the state-of-the-art: Today, account would have to be taken of the ports' contribution to pro-poor growth. In approximation, this will be measured by the increase in port turnover (indicator: increase at least in line with GDP growth). With a view to the project objective, the criterion must be sufficient utilisation of the dredging capacities provided by the project. The annual dredge volume indicator must be adjusted to the changed operating conditions (extension of dumping distance from 12 to 25 km). The longer transport distances reduce the feasible dredge volume. An adequate dredge volume under the new conditions amounts to 800,000 m³/year.

Project Design/Major Deviations from Original Planning and Main Causes

At project appraisal, WADRECO 1's annual maintenance dredging for the operating areas was estimated at about 4 million m³/year, 2 million m³/year for the port of Hai Phong. For lack of sufficient dredging capacities, the executing agency was only able to dredge 2-3 million m³/year at project appraisal. The lack of maintenance dredging in Hai Phong and Hon Gai impaired shipping access. The construction and delivery of a modern hopper suction dredge, specially designed for harbour dredging, was to enable WADRECO 1 to meet maintenance dredging needs. The training measure included on-the-job training for the dredger crew and measures for improving the operational efficiency of the executing agency (in financial management and accountancy, costing and cost control).

The construction of the suction hopper dredge (with 1,500 m³ capacity) largely proceeded to plan, apart from a considerable delay due to difficult competition conditions and protracted contractual negotiations. The vessel was designed specifically for harbour maintenance dredging with short dumping distances, i.e. the distance between the dredging point and the dumping site for the dredged material. The training measure was upscaled somewhat (additional costs of EUR 130,000), but was otherwise largely carried out as planned.

Key Results of Impact Analysis and Performance Rating

Since handover in May 2004, the project executing agency has had a modern dredger at its disposal that is particularly well suited for maintenance dredging in the ports of Hai Phong and Hon Gai. As a result of changes in Vietnamese environmental guidelines, the dumping distance has been extended by a large margin (project appraisal: about 10 km; ex-post evaluation: about 25 km). The dredger technology is not ideal for the new operating conditions, which could not have been anticipated at project appraisal.

The volume of dredge material averaged some 509,000 m³ between 2005 and 2007. Figures on operating days are only available for 2006 (180 days) and 2007 (115 days). The project fell well short of most of the revised objective achievement indicators so that the project objectives were not met.

The minimum required depth of 7 m for the overall objective indicator set at project appraisal, which applied for the entire shipping channel at the port of Hai Phong, was only achieved for an 18 km long segment. The core problem identified at project appraisal - larger vessels (project appraisal: > 7,000 GRT; ex-post evaluation: > 10,000 GRT) having to wait for the tides when

putting into harbour - essentially remains. Port turnover has increased a lot, partly as a result of investments in extending transshipment facilities (cranes, loading bridges, etc.). Growth in cargo (7%) and container volume (10%) exceeds average annual GDP growth. The overall objective indicator for port turnover has therefore been met. Due to the far smaller deployment of the dredger financed by FC, though, this cannot be attributed to the project measure. We therefore deem the overall objective to have been achieved in part only.

One reason for the underutilisation of the FC-financed dredger is that the dredge volume of WADRECO 1 increased far less than expected (forecast at project appraisal: 4 - 5 million m³/year; ex-post evaluation: 3.5 - 3 million m³/year). Another reason is the inadequate operational management of dredger deployment at WADRECO 1. According to the executing agency, the FC-financed dredger is comparatively expensive, especially due to fixed costs for depreciation and debt service (full costs). Although these costs do not depend on the operation of the FC-financed dredger, WADRECO reports that it puts the free capacity of old, largely written-off dredgers to use first, which, it maintains, incur lower full costs. We cannot follow this argument of WADRECO's. The old dredgers must incur substantially higher running costs per m³ of dredging material. Evidently, however, the executing agency does not take adequate account of these costs and applies the wrong business criteria when managing its dredger operations (full costs instead of marginal return).

Downtimes due to repairs exceed the forecasts at project appraisal (40 days) and are on the increase (2005: 57 days; 2006: 71 days; 2007: 65 days; first half of 2008: 40 days). The costs of repair and maintenance carried out till now fall far short of the 1-2% of total investment outlay normally considered necessary. A critical point is that most of the cofinanced spare parts have now been used up. There is no advance replacement planning and the enterprise lacks the necessary liquidity.

The following qualitative assessments apply for the macroeconomic effects: Thanks to lower transport costs, improving transport infrastructure in the northern seaports makes an important contribution to enabling Vietnam to better harness its comparative cost advantages in increasing international goods trade. It is impossible to ascertain at reasonable cost what specific contribution deeper shipping channels and harbour maintenance dredging has made. Due to the much lower utilisation rate of the FC-financed dredger, the macroeconomic contribution is much smaller than originally anticipated and must rate as unsatisfactory.

The project did not aim at environmental improvements and it did not afford any scope for improving gender equity. Improvements in promoting participation and good governance were not intended and are not discernible. The project has an indirect effect on poverty reduction via a certain contribution to economic growth.

We assess the developmental efficacy of the project as follows:

Relevance: The postulated chain of impact was correct: deepening shipping channels and ports to alleviate a development constraint on the northern seaports of Vietnam. The (partial) dredging of a shipping channel financed with Japanese support at Hai Phong port only alleviated the need for maintenance dredging temporarily. There is still a considerable need in the medium term. Self-financed dredgers, some built in Vietnam, have been put into service since project appraisal. They are, however, of only restricted utility for port dredging, unlike the FC-financed dredger, which was specially designed for this. There was no close consultation among the donors engaged in improving port infrastructure. We assess the relevance of the project as satisfactory (Subrating 3).

Effectiveness: Indicators for project objective achievement were: a) an annual dredging volume of at least 1.7 million m³ and b) dredger operating time of at least 220 days/year. Accounting for the changed operating conditions (longer transport distances to the dumping site), the targeted dredge volume is no longer technically attainable. A feasible dredge volume under the new conditions amounts to about 800,000 m³/year. The dredge volume in 2006 and 2007 came to 472,000 m³ and 307,000 m³ with 220 and 115 operating days respectively. The revised project objective indicators have not therefore been met. Project effectiveness is thus gauged to be unsatisfactory (Subrating 4).

Efficiency: The costs of the dredger kept in basic line with planning at project appraisal. The prices for dredger services are not enough to meet full costs. Due to considerable deficits in business planning, the potential of the dredger for improving port operation is not put to adequate use. The original transfer conditions were not appropriate. The increased debt service in local currency as a result of changes in the exchange rate placed a heavy burden on liquidity. Altogether, we rate the efficiency of the project as unsatisfactory (Subrating: 4).

Overarching developmental impacts: The overall objective was defined as making a contribution to alleviating the constraints on shipping for lack of adequate maintenance dredging of shipping channels in the major seaports of Vietnam. Due to the much smaller dredger deployment than planned, the specific contribution of the project to achieving the overall objective is far less than anticipated. Turnover at Hai Phong port has risen, but there is no close causal connection with the use of the financed dredger. The original core problem of waiting times for bigger ships due to tidal movements was not alleviated as expected. Vessels over about 10,000 GRT must still wait for the tides when putting into harbour. We judge the impact as unsatisfactory (Subrating 4).

Sustainability: The present state of repair of the financed dredger is acceptable. The funds expended for repair and maintenance till now is, however, well under the usual 1% - 2% of investment costs a year. WADRECO 1 is making considerable losses. The company is heavily indebted and it is short of liquidity, also due to large amounts of debt arrears from clients. In view of the poor financial position of the executing agency, there is a high risk in future that the necessary maintenance and repair measures can no longer be financed, to the detriment of sustainability. Downtimes due to repairs already exceed forecasts at project appraisal. We thus assess the sustainability of the project as unsatisfactory (Subrating 4).

In all, we assess the developmental efficacy of the project as unsatisfactory (Rating 4).

General conclusions

A full assignment of currency risks to the project executing agency should only be provided for in the transfer conditions, when it is able to cope by earning foreign exchange revenue or indexing the relevant earnings to the exchange rate in order to hedge the risk of national currency depreciation. If the government of the partner country does not relieve the project executing agency of currency risk, there is a danger that it may incur prohibitive finance costs due to the FC project, with adverse repercussions on sustainability.

Notes on the methods used to evaluate project success

Assessment criteria

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

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

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

Rating 1	Very good sustainability	The developmental efficacy of the project (positive to date) is very likely to continue undiminished or even increase.
Rating 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.)
Rating 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.
Rating 4	Inadequate sustainability	The developmental efficacy of the project is inadequate up to the time of the ex post evaluation and an improvement that would be strong enough to allow the achievement of positive developmental efficacy is very unlikely to occur. This rating is also assigned if the developmental efficacy that has been positively evaluated to date is very likely to deteriorate severely and no longer meet the level 3 criteria.

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 above focus on the following fundamental questions:

Relevance	Was the development measure applied in accordance with the concept (developmental priority, impact mechanism, coherence, coordination)?
Effectiveness	Is the extent of the achievement of the project objective to date by the development measures – also in accordance with current criteria and state of knowledge – appropriate?
Efficiency	To what extent was the input, measured in terms of the impact achieved, generally justified?
Overarching developmental impact	What outcomes were observed at the time of the ex post evaluation in the political, institutional, socio-economic, socio-cultural and ecological field? What side-effects, which had no direct relation to the achievement of the project objective, can be observed?
Sustainability	To what extent can the positive and negative changes and impacts by the development measure be assessed as durable?