

**Cameroon: Second Tugboat for Douala Port**

**Ex-post evaluation**

<b>OECD sector</b>	21040 / Water traffic	
<b>BMZ project ID</b>	1997 65 587	
<b>Project-executing agency</b>	At the time of the project appraisal: Office Nationale des Ports du Cameroun (ONPC) Now: Port Autonome de Douala (PAD)	
<b>Consultant</b>	Marine Services	
<b>Year of ex-post evaluation</b>	<b>2004</b>	
	<b>Project appraisal (planned)</b>	<b>Ex-post evaluation (actual)</b>
<b>Start of implementation</b>	10/1997	2/1999
<b>Period of implementation</b>	21 months	25 months
<b>Investment costs</b>	EUR 6.6 million	EUR 7.34 million
<b>Counterpart contribution</b>	EUR 0.5 million	EUR 1.0 million
<b>Financing, of which Financial Cooperation (FC) funds (in EUR)</b>	6.1 million FC loan	6.34 million FC loan
<b>Other institutions/donors involved</b>	None	None
<b>Performance rating</b>	2	
<b>• Significance / relevance</b>	2	
<b>• Effectiveness</b>	2	
<b>• Efficiency</b>	2	

**Brief Description, Overall Objective and Project Objectives with Indicators**

The project comprised the acquisition of a second new tugboat for the Port Autonome de Douala (PAD), or Douala Port, which is the legal successor of the Cameroonian Port Authority Office National des Ports du Cameroun (ONPC). The project is part of a modernization programme for the port overall in which other donors such as the World Bank and the French AfD are involved. It is a direct follow-up project of the Financial Cooperation (FC) project "Tugboat for Douala Port," BMZ (German Federal Ministry for Economic Cooperation and Development) no. 1990 65 150. The tugboat is mainly intended for use in Douala Port, which is the country's most important seaport by far.

Overall objective: To help maintain reliable and fast processing of ships arriving at Douala Port.

Project objective: To ensure that reliable tugboat services are available within an appropriate period of time.

Indicators of achievement of the project objective are:

- Average tow and maneuver time per ship passage in accordance with the tugboat handbook (goal: to at least attain the level at project appraisal of a maximum of 2 hours).
- Availability of the necessary tugboats (at least 2 tugboats available 24 hours a day, 365 days a year).
- Number of accidents and cases of damage at the piers (still no major accidents)

The calculations of project profitability performed during the project appraisal resulted in an internal rate of return of 13.5%.

Seen from today's perspective, the defined goals and indicators were appropriate.

### **Project Design / Principal Deviations from the original Project Planning and their main Causes**

At the time of the project appraisal, the project was justified because of the great importance of Douala Port for Cameroon's foreign trade and the key function of the port's tugboat fleet for the turnover of goods and for the port's earnings situation. The use of a tugboat is mandatory at Douala Port. At the time of the project appraisal, only 5 tugboats were available to provide the service, two of which were 39 and 38 years old, could hardly function, and generated high operating and replacement expenses. Since altogether 4 tugboats were required for smooth tugboat service, one of these two tugboats had to be either replaced or rehabilitated. Since the boats were very old, replacing one of them seemed to be the most efficient solution to eliminating the existing capacity bottleneck.

The development of the volume of cargo and ship movements since the project appraisal exceeded our expectations (see below) since the economic crisis prevailing at the time of the project appraisal turned into a growth phase during the 1990s. This confirmed our estimates of demand.

In terms of design and implementation, the project was based on the concept and key technical data from the preceding project "Tugboat for Douala Port - 1990 66 150." As a result, and due also to the favorable tender results (see below) the actual costs were KEUR 450 lower than our estimate at project appraisal (EUR 5.57 million including consulting costs but excluding reserves). The relatively high reserves for contingencies/price increases that were even increased again during the course of the project in response to expected delays in implementation (see below) by KEUR 205 to total KEUR 767 were not needed, either. The funds saved were spent during project implementation on sensible project add-ons that reinforced the technical capacities of the project-executing agency:

- Due to the rising number of large ships – once the container terminal was completed – the tugboat was equipped with stronger motors that increased its static pull from 30 t to 40 t and its speed from 11 knots to 12.5 knots.
- The fire extinguishing equipment that was originally cancelled for cost reasons was reincluded in the project. In addition, a crane was added to the tug's equipment that can lower the dinghy and convey large spare parts.
- The installation of a software programme for maintenance and repairs, ordering spare parts and administration (incl. hardware) that was initially planned to be financed out of project counterpart funds was also added to the project scope. During installation the consulting services planned for the project aiming to increase the maintenance organization and logistics were carried out.

Taking these additional measures into account, the foreign exchange costs of the project (incl. consulting services) amounted to EUR 5.46 million. The domestic costs assumed by the project-executing agency (mainly taxes) amounted to EUR 1.0 million. The German Federal Ministry for Economic Cooperation and Development (BMZ) approved the use of the remaining FC funds including the reserves mentioned above of around KEUR 880 altogether for the acquisition of a hydrographic survey boat (incl. consulting services). Delivery is scheduled for mid-2005.

In the invitation to tender for the tugboat and for the consulting services the requirement for a formal prequalification procedure was cancelled, as recommended in the project appraisal. In order to still ensure sufficient competition, the invitations to tender were made via short-listing, with German ship construction consultants and the wharfs that had participated in the tender for the first tugboat taking part. This resulted in the savings mentioned above, and the firms already involved in the preceding tugboat project - namely the engineering firm "Marine Services" in Hamburg and the "Erlenbacher Schiffswerft Maschinen- und Stahlbau GmbH" - were awarded the contracts.

Overall the implementation concept selected proved to be a good choice, not only financially but also technically. Awarding another contract to Erlenbacher Schiffswerft made it possible to exploit a great deal of experience from the first project, which ultimately benefited the new project. The involvement of the consulting firm also proved to be a good decision since it ensured that the tender was carried out on time and properly, and it played a key role in making the conduct of the procedures more efficient. Thus, the project was completed with a delay in construction of only 4 months, which is minimal for Cameroonian standards. The delay in the start of operation of the project of 20 months altogether (until March 2001 instead of July 1999) was due mainly to the late provision of the required FC funds, which was postponed until after the intergovernmental negotiations held in May 1998. This delayed the start of operation (conclusion of the consulting contract) by 16 months until February 1999.

On the operational side, the financial and administrative deficiencies of the former project-executing agency, the OPNC, were already pointed out at the time of the project appraisal. In 1995/96 a state-administered tariff cut and also inefficiencies of the repair, maintenance and storage system jeopardized the timely procurement of spare parts as well as the performance of major repair work. On the other hand, we did not detect any risks to the tugboat services owing to the qualified staff and the instruction measures provided for under the project.

The port reform that has since been initiated transferred responsibility for the operation of Douala Port in 1999 to a new, autonomous port authority owned by the state, the "Port Autonome de Douala" (PAD). The liquidity situation of the PAD was also tense, however, not least because of another tariff cut in March 2000 that was required by the structural adjustment programme (see also our ex-post evaluation report on the first tugboat project from September 13, 2002). Thus, operation by the PAD continued to involve a sustainability risk. FC financing for spare parts for the first three years and the above mentioned measures to improve the organization and logistics for repair work aimed to minimize this risk during the first years of operation and have proven beneficial. In the end, though, it was the award of the concession for the tugboat services to the private operator "Société les Abeilles S.A.S." in December 2003 that was a definitive step towards finding a long-term solution to the problem. The operator contract requires the concessionaire to repair and maintain the tugboats. Since it has an economic interest in high availability of its tugboat fleet, the tugboats can be expected to be operated efficiently and maintained properly. However, this presupposes that a concession contract will give the concessionaire the financial opportunities to do so. We consider this condition to be fulfilled (see Annex 2).

## **Key Results of the Impact Analysis and Performance Rating**

Overall objective: Assurance of reliable, fast processing of incoming ships at Douala Port (overall objective) to ensure the smooth processing of the country's foreign trade. The target group comprises the shipping companies that use Douala Port, the cargo handling companies located in the port, and – in broader terms – the importers and exporters.

Still today Douala Port plays a central role in foreign trade: it handles around 90% of the country's imports and exports as well as a high percentage of the international exchange of goods with its neighboring countries Chad and the Central African Republic. The volume of cargo at Douala Port has increased since the project appraisal from 4.1 million tons (1995) to 5.9 million tons (2003). The downward trend in the number of ship movements prior to the project appraisal has since been turned around, with the number of ships per year increasing from 1,053 to 1,236, thus regaining its level in the early 1980s. Cargo traffic in the new container terminal was a key contributing factor here. The strong demand for the port, the continually high growth rates of the economy (real over 4% p.a.) and of foreign trade, and the efficiency-enhancing structural reforms and investments in fixed assets by the port authority all indicate that this positive trend will continue. From today's point of view, implementation of the project was essential for achievement of the overall objective. Not least, its effectiveness was confirmed by the temporary unavailability of the two older tugboats in fiscal year 2000/2001 (shortly before the project tugboat started operating). The prolonged delay in the start of operation of the second tugboat of around 20 months that was described above led to capacity bottlenecks that had to be resolved by chartering foreign tugboats for a limited time.

The project objective was to ensure that reliable tugboat services are available within an appropriate period of time. To achieve this, in the project appraisal we considered it necessary to have a fleet of 4 tugboats (2 of which funded by FC) to guarantee a mathematical availability of 310%. After deducting tugboat capacities reserved for the Limbé refinery under a service agreement, at least 2 tugboats were to be available for Douala Port 365 days a year, 24 hours a day (availability: 210%). This indicator was met. Since the contract with Limbé refinery expired, and due to the rehabilitation of the two older tugboats, the mathematical availability at Douala Port is now even 3 tugboats. Therefore, from today's perspective the capacities at the port are quite ample and even leave room for further growth in transport. Taking the increase in the number of breakdowns of the two older tugboats that are expected in the medium term into account as well as the conditions in Cameroon – strong tugboats cannot be mobilized quickly in emergencies - the size and availability of this tugboat fleet is not excessive. In addition, due to its low static pull (10 t) the oldest tugboat can only be used together with another tugboat when large ships enter the port. Thus, it cannot replace the new tugboat. In contrast, the private operator can bridge low-load periods by offering its free capacities elsewhere (neighboring ports, Gulf of Guinea) to generate additional revenues. We do not have any information on this as yet, however.

The other indicators of achievement of the project objective were also met: the average maneuvering time per ship movement is far below 2 hours, and the port authority did not inform us of any major accidents or damages at or to the piers. The waiting time for incoming ships has been cut in half since 1997 from 28.6 hours to around 14 hours. Thus, the project objective was also achieved.

On the project level, the acquisition of the new tugboat was justified because the operating costs for the available older tugboats had become quite high, and it was no longer economical to repair them since the economic life of some of them was greatly exceeded. This still holds true, although the project's estimated internal rate of return of 13.5% was missed by a wide margin (approx. 5%). Above all, the difference resulted from the tariff cuts in March 2000 already described above of 40%, and also from the higher domestic costs for the project. An

increase in the tariffs back to the original level is not expected in the foreseeable future. Taking all this into account, the calculated rate of return can still be considered satisfactory.

With regard to the cost efficiency of the measure, from today's point of view another alternative would be chartering. The bottleneck prior to the start of operation of the new tugboat showed that chartering is, in principle, an alternative for the PAD. Our comparative calculation of this alternative on the occasion of the ex-post evaluation for the first tugboat showed that the cost of chartering a tugboat (USD 2,800 per day) is around 50% higher than the cost of owning a tugboat - although the dollar was much higher (USD 0.90/EUR 1). Based on the current rate of USD 1.20/EUR 1, this cost advantage shrinks to 10%, but owning a tugboat still remains advantageous.

As regards tugboat operation overall, we expected annual surplus earnings for the project-executing agency of EUR 0.7 million owing to the above described tariff adjustments, but our expectations were not met. The deficits that originally resulted for the PAD were basically a risk to the sustainability of proper operation. Following the concessioning of tugboat operation to the private "Société les Abeilles, S.A.S." conditions were negotiated to ensure coverage of the PAD's direct costs (interest expenses and depreciation) as well as minor surpluses. A rough comparison of the earnings and expenses of the concessionaire based on the business results for 2003 reveals that the concessionaire had sufficient earnings to cover the cost of repairing and maintaining the tugboat fleet. Additionally, the procurement of spare parts by the concessionaire on its own responsibility solved the problem of the laborious procurement procedures of the PAD.

We did not have sufficient data to make a final evaluation of the success of the concession. Yet, we expect that it will significantly improve the efficiency and sustainability of the operation of both FC-funded tugboats. The "Société les Abeilles S.A.S." belongs to the French Bourbon Group, which is financially strong and also experienced with maritime cargo and with tugboat services. We consider the risk of non-sustainable operation of the tugboats to be minimal.

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

The main project measure was the replacement of an old tugboat for which rehabilitation was not feasible with a new, stronger tugboat. The overall objective of this measure was to help maintain reliable and fast processing of ships arriving at Douala Port. This objective has been reached. Since the port still plays an important role in Cameroon's foreign trade and that of its neighbors, and owing to the positive development of the economy and of port turnover and also to the great importance of tugboat services for smooth port operation, we consider the project's developmental relevance and significance to be satisfactory (rating 2), although the current number of ship movements is still at the level of the early 1980s despite an increase in the past few years.

The project objective was to ensure that reliable tugboat services are available within an appropriate period of time, and this objective was achieved. The involvement of a private concessionaire at acceptable conditions suggests that the achievement of the project objective will be sufficiently long-lasting, even if no reliable data on the success of the concession is currently available. The current level of availability exceeds expectations and is adequate, considering the positive development of port business and the capacities and contingency risks of the two older, non-FC-funded tugboats in the fleet. Overall, we judge the project's effectiveness to be satisfactory (rating 2).

The measure selected (acquisition of a new tugboat for the PAD) was more cost-efficient than the technical/economic alternative of chartering. It also offers more security since the service

offered is now adequate at all times. However, the impacts of the investment on the project level that had been intended at the time of the project appraisal were not achieved due to the politically motivated tariff cutbacks for tugboat services. Nevertheless, combined with the above mentioned privatization the project can at least cover the costs of tugboat operation overall, and once the tugboat business starts picking up there will even be a small surplus for the PAD. Overall, we judge the project's efficiency to be satisfactory (rating 2).

Under consideration of the key criteria stated above, we assess the project's developmental effectiveness as satisfactory (rating 2).

The project did not target gender-specific goals, direct poverty reduction or the improvement of governance. Consequently, it has not had any corresponding impacts. The operation of the tugboat is not tied to any noticeable environmental effects.

### General Conclusions

None

### 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.