

ORET Evaluation 2007-2012 – Case Study of Project “Champerico Fishery Port, Guatemala” (ORET Transactions GT00017 and GT00018)

El puerto que no debió construirse

(The port that should not have been constructed)



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March 2015

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List of Abbreviations

ASOPECHAMP	<i>Asociación de Pescadores de Champerico</i>
AVEDICHAMP	<i>Asociación de Vecinos para el Desarrollo Integral de Champerico</i>
BCIE	<i>Banco Centro-Americana de Integración Económica</i> (Central-American Bank for Economic Integration)
BoQ	Bill of Quantities
CPN	<i>Comisión Portuaria Nacional</i>
EIA	Environmental Impact Analysis
EPNAC	<i>Empresa Portuaria Nacional de Champerico</i>
FIDIC	International Federation of Consulting Engineers
FMO	<i>Financieringsmaatschappij voor Ontwikkelingslanden</i> (Netherlands Development Finance Bank)
ICB	International Competitive Bidding
IDB	Inter-American Development Bank
INE	<i>Instituto Nacional de Estadística</i>
IOB	Policy and Operations Evaluation Department of the Netherlands Ministry of Foreign Affairs
IOM	International Organisation for Migration
MARN	<i>Ministerio de Ambiente y Recursos Naturales</i>
MinCIV	<i>Ministerio de Comunicaciones, Infraestructura y Vivienda</i>
MoF	Ministry of Finance
O&M	Operation and Maintenance
ORET	<i>Ontwikkelingsrelevante Export Transacties</i> (Development-Related Export Transactions programme)
ORET.nl	Consortium of PricewaterhouseCoopers and Ecorys that administers the ORET programme since 1 January 2007
ORIO	<i>Ontwikkelingsrelevante Infrastructuur Ontwikkeling</i> (Facility for Development-Related Infrastructure Development)
PESP	<i>Programma Economische Samenwerking Projecten</i> (Programme Economic Cooperation Projects)
SEGEPLAN	<i>Secretaría de Planificación y Programación de la Presidencia</i>
SIGA	<i>Sistemas Integradas de Gestión Ambiental</i>
TA	Technical assistance

Executive Summary

Introduction

The Champerico fishery port construction project in Guatemala is one of the case studies of the ORET Evaluation 2007-2012. The project comprised the two related ORET transactions GT00017 and GT00018. Champerico is located in the Department of Retalhuleu, Guatemala, at about 225 kilometres from the Capital. It is a small town with an estimated population of around 31 thousand at the time of construction of the fishery port.

The project concerns the construction by Van Oord of a port for artisanal fishermen and semi-industrial fishery (GT00017) as well as supervision of the construction activities and provision of technical assistance by Royal Haskoning (GT00018). The construction of the port in Champerico was one of the four *Mega Proyectos* that President Óscar Berger had promised in his election campaign to realize if he would be elected.

The explicit objectives of the construction of the fishery port in Champerico were:

- Enhance the business climate
- Offer port facilities for the semi-industrial fleet that made use of Puerto Quetzal and artisanal fishing boats
- Increase safety of the (artisanal) fishermen
- Increase the catch and quality of the fish
- Increase employment
- Stimulate tourism by attracting (international) sports fishing activities, etc.

In 2004, Van Oord and Royal Haskoning started with a feasibility study for the construction of the fishery port in Champerico. Van Oord had negotiated directly with the government of Guatemala and had invited Royal Haskoning for the feasibility research. The feasibility study was co-financed by a PESP subsidy from the Dutch Ministry of Economic Affairs. It was completed in June 2005.

The feasibility study explains that given the wave-driven sand transport and the need for protection of the port area, the design of maritime structures has to take into account two types of waves:

- a. Swell waves generated by storms and/or hurricanes at the ocean far away from the port area.
- b. Sea waves generated by local winds.

According to the feasibility study, swell waves were the most important type of waves to be considered for sand transport near Champerico and, hence, for the design of the port and the breakwaters. The initial design of the port was based on the net annual average sediment transport, which was estimated between 130,000 and 190,000m³ in West-North Westerly direction.

The applications for ORET grant financing were submitted to FMO on 13 October 2005. The FMO investment officer subsequently elaborated a Grant Proposal. The Grant Decision was taken on 21 June 2006 and both the Grant Agreements and the commercial contracts were signed on 7 September 2007.

The port was constructed on a site that was obtained by clearing mangrove forest. Prior to the start of the construction activities, the government of Guatemala made an environmental impact assessment (EIA). Royal Haskoning reviewed that assessment on behalf of FMO. The studies resulted in the allocation of additional financial resources for (re)planting more mangrove forest than the initially proposed area (20 instead of 4.9 hectares) elsewhere, so as to compensate for the environmental damage related to the area of mangrove forest that was cleared.¹

The main Dutch stakeholders in the project were FMO and its successor ORET.nl as administrators of the ORET programme, the Netherlands' Embassy in Guatemala, the applicants (Van Oord NV and Royal Haskoning BV), and Witteveen & Bos, the company hired by FMO for the assessment of the technology and the usual price/quality check.

According to the project documentation, the main Guatemalan stakeholders were the fishermen of Champerico as ultimate users of the port, and the direct beneficiary of the project, the port

¹ However, the EIA warned that another 30 hectares of mangroves in the surrounding area would also be destroyed or seriously affected by the port construction.

authority *La Empresa Portuaria Nacional de Champerico* (EPNAC), which falls under the *Comisión Portuaria Nacional* – an advisory committee of the *Ministerio de Comunicaciones, Infraestructura y Vivienda*.

A complicated institutional structure was set up for the application and the port operation. The UN body IOM acted as the intermediary for the provision of non-grant financing and co-signed the commercial contracts with Van Oord and Royal Haskoning as contracting authority, while EPNAC signed as owner of the port.

Efficiency

The transaction experienced several delays in the appraisal phase because of extensive discussion on (pre-)conditions for the grant, including on the legal cover required to deviate from the nationally prescribed international competitive bidding (ICB) in the tender process, and the complicated arrangements of the non-grant financing of the project. The most difficult condition to fulfil was the required statement of an authorized governmental entity that ICB was not necessary for the project and that single sourcing was allowed, which was in the end even confirmed by parliamentary approval.

The construction works started officially on 15 January 2008. Some preparatory activities had been carried out in the preceding months. The "first phase" of the construction of the port was formally completed in July 2009 when Van Oord "submitted" the works to EPNAC and officially inaugurated in August of that year. Most of the works specified in the Bill of Quantities contract were carried out and realized on schedule and within budget. Some works were executed in a different way than specified in the contract, according to a variation in the Bill of Quantities.

Supervision of the construction activities also started in January 2008. The budget for supervision was € 803,178 (+ € 40,159 contingencies). Technical assistance was another expected output of the project. It started in April 2009 and continued for about one and a half year. The budget for technical assistance was € 369,474 (+ € 18,474 contingencies).

The works did not result in an operational port due to the problem of excessive sedimentation. The amount of (net) sand transportation was not sufficiently taken into account in the design of the port. The question then rises who can be held responsible for the failure to construct a properly functioning fishery port for both artisanal fishermen and the semi-industrial fishing fleet.

If the design had taken account of the risk of higher levels sedimentation and the port had been properly dimensioned with bigger and differently positioned breakwaters and regular dredging, the project may have resulted in a properly functioning port. However, it is likely that the project would then not have been economically feasible.

Implementers and beneficiaries differ in their opinion about the quality and delivery of the technical assistance. Royal Haskoning reported that TA's goals had been achieved. The interviewed fishermen mentioned that the training was delivered in a hurry and considered it to be of a low quality. EPNAC seems to have been satisfied with the TA it received. This was organized according to a model of an ideal, functioning port which, unfortunately, was never fully the case. The early problems of siltation of the port resulted in the inability to generate adequate port revenues. This in turn led to the firing of most of the technical staff of EPNAC. At the same time, the continuous pressure from the angry artisanal fishermen forced a change of priorities and the abolishment of harbour fees for this group as a form of compensation.

Another expected output of the project was mangrove reforestation. Mangrove seedlings have been planted some 40 to 60 kilometres north of Champerico. Again, there are differences of opinion whether it was done well (see also environmental sustainability).

The most important reason for not realizing the agreed outputs is that a detailed design based on a rigorous sedimentation study was never made. This caused a break in the logical sequence of necessary steps for the development of the port and implementation of the works. The conceptual design of the port presented in the feasibility study was not followed by a detailed design before the start of the works in 2008. For that purpose the conceptual design was used but this was, unfortunately, based on erroneous assumptions about the maximum level of sand transportation. Apparently, the detailed design was seen as a collective responsibility of all stakeholders. Royal Haskoning and Van Oord were not made responsible for that task nor did the companies perceive

an individual responsibility. The other stakeholders in the project, first FMO and later ORET.nl as administering agencies and EPNAC as client, failed by omission because they had not spelled out this step as a milestone in the commercial contracts and grant agreements nor did they object to the start of the works in the absence of a detailed design based on a rigorous study of actual sand transportation. Another reason for not achieving the expected results may have been insufficient monitoring from the start of the construction activities.

Because some works were realized in a different fashion than initially designed, the actual price-quality ratio of particular works may differ from the corresponding ratio assessed by Witteveen & Bos and the ratio underlying the Bill of Quantities that was attached to the contract with Van Oord. Since the project as a whole has not resulted in a properly functioning fishery port, no other conclusion can be drawn that its price-quality ratio is extremely high.

Effectiveness

In general terms, the project can be considered a failure. The end result is a malfunctioning port for artisanal fishery only, which is not accessible for semi-industrial fishing vessels and other commercial vessels. Even the option of repairing the existing, decrepit pier for use by the artisanal fishermen – though not a good solution from a safety point of view – is no longer available because of the high degree of sedimentation around the pier.

When it became clear that the port was not (going to be) functioning properly, several attempts were made to contain the damage. A groyne was built on the first bend of the breakwater, the entrance channel was dredged (much earlier than foreseen in the feasibility study) and later the groyne was extended. However, this is not going to offer a structural solution for the problem of sedimentation.

Due to this problem, the number of artisanal fishing boats making use of the Champerico port reduced while the semi-industrial fishing fleet still has to land their product in Puerto Quetzal. An unintended positive consequence is the unexpected increase in tourism due to the extended beach. Nevertheless, the general perception is that development in Champerico has stagnated which has worsened social problems such as migration and juvenile delinquency. Moreover, the Government has not only lost the financial investment in the failed port but also seen its credibility with the citizens of Champerico severely eroded.

Though there are no hard before-and-after employment figures, it is very likely that in the end the net employment effect of the project has been negative. The lack of a well-functioning port has damaged the chances for further development of fishing and marine tourism-related activities and has decreased the capacity of the local economy to generate employment from fishery-related processing activities. There are a considerable number of fishermen who are no longer active in the fishery sector. Whereas formal attribution is not feasible, there is little doubt that several of these effects are clearly related to the intervention.

Sustainability

As a result of technical assistance provided by Royal Haskoning, EPNAC was better equipped to manage the port but since the project did not result in a well-functioning port, it could not (fully) use the improved management capacity for the operation and maintenance of the port.

Technically, the project is not sustainable. The excessive sedimentation was not taken account of by the omission of a detailed layout design based on associated detailed sedimentation modelling studies and an erroneous assumption in the conceptual design of the port. It is hard to understand why calculations were based on net sediment transport (instead of gross transport in opposite directions), why the conceptual design did not take into consideration a worst case scenario of an above-average sediment transport and why construction by Van Oord supervised by Royal Haskoning started in the absence of a detailed design. Apparently no one felt responsible for making a detailed design or checking this important condition.

Van Oord and Royal Haskoning continued with the preparation of additional works (the "second phase of the construction"). These activities were not part of the ORET-transaction and comprised among others the elaboration of a sand transportation study. When it became clear that the port

was not (going to be) functioning properly, several attempts were made to repair the damage. But these attempts did not offer a structural solution for the problem of sedimentation.

The Feasibility Study of 2005 and the Grant Proposal of 2006 also showed figures that the project would be financially feasible with the ORET grant only if the government would keep subsidizing the operation of the port. So, one of the conditions for the grant was that the Ministry of Finance would transfer the required subsidy annually in the years following the construction of the port.

The income from port fees generated by the operation of the port fell far short of what was foreseen because the semi-industrial vessels could not make use of the port due to excessive sedimentation of the access channel. Hence, financially, the project was also not sustainable.

Policy Relevance and Coherence

The project was one of the Mega Proyectos of President Berger. The project would have been relevant if it had functioned properly. All interviewed stakeholders agree on this. The project was thought to improve the well-being of the artisanal fishery community and to simultaneously develop conditions to stimulate tourism (sporting fishery) and other service and commercial activities.

The fishery port in Champerico was a project that the ORET programme could support. On the drawing table the project was coherent with the focus of Dutch development policy on private sector development while protecting the environment. Its environmental component – reforestation of mangroves in line with the ORET policy guideline that any environmental damage should be mitigated and compensated – was also coherent with the large environmental programme being carried out in Guatemala by a group of donors under the leadership of the Netherlands.

In reality the project was poorly designed and implemented.

Additionality and Catalytic Effect

The ORET grants appear to have been additional in the sense that the project would not have been implemented without the financial contribution from ORET.

Whereas it can be concluded that there are no real doubts about the additionality of the ORET grant, there are no indications that the contribution from ORET had a catalytic effect.

Final remark

Paraphrasing a remark made by one of the interviewees, the project has resulted in “the port that should not have been constructed.”

1. Introduction

The Champerico fishery port construction project in Guatemala is one of the case studies of the ORET Evaluation 2007-2012. The project comprised the ORET transactions GT00017 and GT00018.

The team for the evaluation of the fishery port project was composed of Mr. Niek de Jong (Senior Researcher of ERBS, Erasmus University Rotterdam and coordinator of the case study), Dr. Rafael del Cid (Director of *Instituto de Investigación de Políticas Públicas Universidad Tecnológica Centroamericana*), Ms. Vivian Guzmán (independent consultant) and Mr. Otto Genee (Senior Evaluator of IOB).

The report is structured as follows. The next chapter describes the project and main stakeholders. Chapter 3 presents the Theory of Change underlying the intervention as summarized in the results chain. Chapters 4 addresses the evaluation questions listed in Annex 5 of the Terms of Reference of the evaluation.² Finally, Chapter 5 concludes.

2. Project Overview

2.1. Goal

The project, comprising the two related transactions GT00017 and GT00018, was aimed at the development of an artisanal and semi-industrial fishery port in Champerico.

2.2. Location

Champerico is located in the Department of Retalhuleu, Guatemala, at about 225 kilometres from the Capital (see Figure 1). It is a small town with an estimated population of around 37 thousand in 2014, or around 31 thousand at the time of construction of the fishery port (see Figure 2). According to poverty maps made on the basis of the most recent Population and Housing Census, 46.9% of the population of Champerico was poor in 2002, defined as having a daily per capita income below the overall poverty line. The estimated incidence of extreme poverty, that is having a daily per capita income of less than one PPP Dollar was 5.7%.³ The economically active population (i.e. the labour force) was 7,123 persons, of which 4,922 persons (69%) were active in fishery and agriculture. (A split between agriculture and fishery was not possible.)⁴

In a survey conducted in 2005 among 445 households of Champerico, slightly over a third of them reported fishery as their main economic activity.⁵ Another 4 per cent reported that being employed by the company *PESCA S.A.* was their main source of income. Similarly, 1 per cent answered that the local port authority (*La Empresa Portuaria Nacional de Champerico, EPNAC*) was their main employer. In addition, respectively 7, 14 and 5 per cent of the households reported that owning a service or sales business and being a private employee was their main economic activity – which may also include fishery-related activities. Hence, at least some 40 per cent – but probably an even higher percentage – of the households depended on fishery or fishery-related activities.

² <http://www.iob-evaluatie.nl/node/706#attachments>

³ SEGEPLAN (2010). *Plan de Desarrollo, Champerico, Retalhuleu*. Consejo Municipal de Desarrollo, Municipio de Champerico y Secretaría de Planificación y Programación de la Presidencia (SEGEPLAN). Diciembre 2010, p. 14. [http://sistemas.segeplan.gob.gt/sideplanw/SDPPGDM\\$PRINCIPAL.VISUALIZAR?pID=RECUADROS_ODM_PDF_1_107](http://sistemas.segeplan.gob.gt/sideplanw/SDPPGDM$PRINCIPAL.VISUALIZAR?pID=RECUADROS_ODM_PDF_1_107). A different source of information shows a much smaller population – 11,451 in 2008-2009 – with a higher incidence of poverty of 65.5% and incidence of extreme poverty of 26.5% estimated on the basis of the method of insatisfaction of basic needs, see INE (2010). *Población y Pobreza. Directorio de Hogares Mi Familia Progresas*. Guatemala City: Instituto Nacional de Estadística. Marzo de 2010, pp. 11 and 323. (<http://www.ine.gob.gt/np/mifapro/publicacion/poblacion/datos/poblacion.html>). It is not clear why the population figure in this source is much smaller than the estimate based on the Census data.

⁴ See SEGEPLAN (2010:42).

⁵ M.E. Cárcamo González, G.E. Reyes Morales, S.A. Ramírez Juárez (2005). *Evaluación de Impacto Ambiental. Construcción del Puerto de Pesca, Champerico, Retalhuleu, Guatemala C.A.* Champerico, Mayo de 2005.

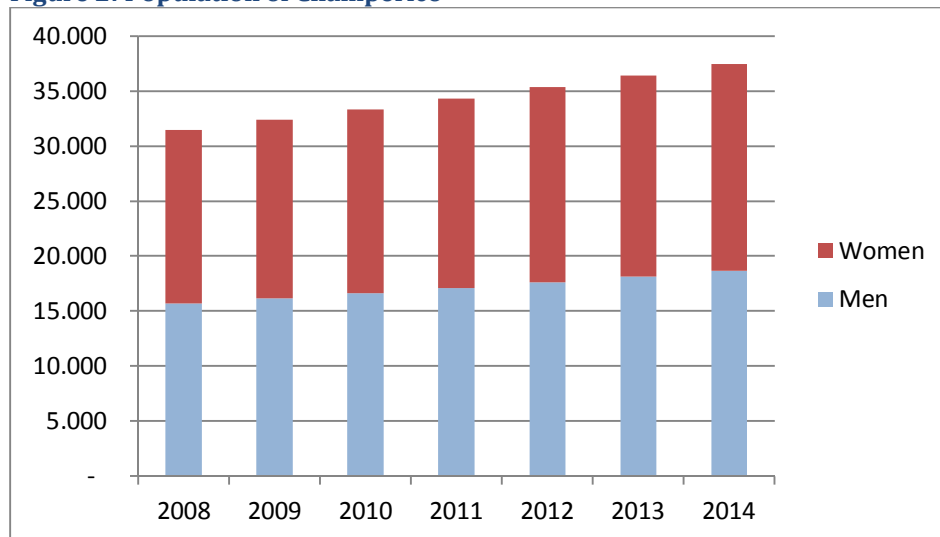
Figure 1: Location of Champerico, Retalhuleu District - Guatemala



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Source: http://www.worldportsource.com/images/maps/guatemala_pol00.jpg

Figure 2: Population of Champerico



Source: INE (2002). *XI Censo de Población y VI de Habitación 2002*; estimations for 2008-2020 (<http://www.ine.qob.gt/np/poblacion/index.htm>)

2.3. Specific Interventions of the ORET project

The project comprised the construction by Van Oord of a port for artisanal fishermen and semi-industrial fishery (GT00017), as well as supervision of the construction activities and provision of technical assistance by Royal Haskoning (GT00018). The construction of the port in Champerico was one of the four *Mega Proyectos* that President Óscar Berger had promised in his election campaign to realize if he would be elected.

The main goal of the project was to offer port facilities for both artisanal and semi-industrial fishermen.⁶ The latter could not land in Champerico and brought their catch of shrimps mainly to Puerto Quetzal, from where it was transported by road to the shrimp-processing factory CAMARSA located in Champerico.⁷ The distance between Puerto Quetzal and Champerico is about 150 kilometres (Figure 3).

Figure 3: The Location of Champerico and Puerto Quetzal



Source: <http://www.ed-u.com/gt.html>

By also offering port facilities for the semi-industrial fishery, transport of the fish by road could be avoided, which was expected to lower costs and raise the quality of the white fish and shrimps. It would also free harbour capacity in Puerto Quetzal for the expansion of (other) commercial port activities. New ice producing facilities in Champerico would allow the local artisanal fishermen to bring ice on their boats, so they could stay longer at sea (up to 72 hours) and return with a larger catch while keeping the harvested fish fresh. The safety of the local fishermen would be enhanced if they would no longer have to use the crumbling 120-year old pier to launch their boats and to land and unload their catch (**Error! Reference source not found.** and **Error! Reference source not found.**).

⁶ Semi-industrial fishermen operate the fishery fleet working at the service of PESCA S.A. This firm is associated to CAMARSA S.A., the shrimp-processing factory based in Champerico. CAMARSA is also involved in shrimp aquaculture.

⁷ CAMARSA S.A. is a subsidiary of PESCA S.A., which in turn forms part of Grupo LADEX – one of the three biggest groups in the United States involved in shrimp fishing and processing. The Spanish company PESCANOVA S.A. bought LADEX in 2008 and established NOVAGUATEMALA S.A. for its operations in Guatemala, see Paulo Melendreras (2011). "El hombre y el mar en el Puerto de Iztapa, Escuintla: El sector artesanal de la pesca y el impacto de las empresas industriales que operan en el Océano Pacífico de Guatemala," *El Observador*, Year 6, No. 28 and 29 (December 2010-March 2011). <http://www.scribd.com/doc/102777785/03-2011-El-Observador-Nos-28-29>. NOVAGUATEMALA S.A. is a so-called BAP (Best Aquaculture Practices) Certified Plant based in Champerico. http://aquaculturecertification.org/index.php?option=com_content&task=view&id=123&Itemid=106.



Photo 1: The old pier



Photo 2: Launching a boat from the pier

The explicit objectives of the construction of the fishery port in Champerico were:⁸

- To enhance the business climate
- Offering port facilities for the semi-industrial fleet that made use of Puerto Quetzal and for artisanal fishing boats
- Increase safety of the (artisanal) fishermen
- Increase the catch of fish and increase the quality of fish
- Increase employment⁹
- Stimulate tourism by attracting (international) sports fishing activities, etc.

This, in turn, was expected to raise the living standards of the local population and reduce crime and emigration. The project was expected to create a “pole of development” in the South-Eastern coastal region of Guatemala.

In 2004, Van Oord and Royal Haskoning started with a feasibility study for the construction of the fishery port in Champerico. Van Oord had negotiated directly with the government of Guatemala and had invited Royal Haskoning for the feasibility research. The feasibility study was co-financed by a PESP subsidy from the Dutch Ministry of Economic Affairs. It was completed in June 2005. The feasibility study explains that given the wave-driven sand transport and the need for protection of the port area, the design of maritime structures has to take into account two types of waves.¹⁰ These are:

- a. Swell waves generated by storms and/or hurricanes at the ocean far away from the port area. It takes several days before they reach the shore.
- b. Sea waves generated by local winds.

The extent of expected sand sedimentation has been estimated as follows:¹¹

The most important parameter is the stochastic distribution of sand transport capacity of the waves, which in turn depends on the stochastic distribution of the wind (not only the local wind off the coast, but also above the ocean). These are parameters that cannot be meaningfully determined over a short period of time, given their stochastic nature, due to which the waves can vary per season/year. In the absence of own measurement data, several wave databases for the region were used.

On this basis, a representative long-term average wave climate was estimated for the area near Champerico. With computer models (i.e. wave propagation models), an estimation was made of

⁸ ORET.nl (2009). Monitoringsmissie Guatemala en Ecuador; ORET.nl (2011) Formulier Eindrapportage ORET.

⁹ The use of the new port was expected to safeguard existing employment for years to come. A figure of 4,000 direct and indirect jobs has been mentioned (see www.civ.gob.gt/c/document_library)

¹⁰ Long waves generated by tsunamis were not considered (Royal Haskoning and Van Oord, 2005:19).

¹¹ Interview with Jan-Willem Jongbloed of Royal Haskoning.

the wave climate immediately off the coast of Champerico and subsequently of the extent of sedimentation by wave-driven sand transport.

According to the feasibility study, swell waves were the most important type of waves to be considered for sand transport near Champerico and, hence, for the design of the port and the breakwaters. The feasibility study furthermore explains that the sand transport varies between different periods of the year:¹²

- The dry period November-April, when the predominant wave direction due to swell is West North West (WNW), though there are also wind waves from the western directions inducing longshore currents in East-South-Easterly (ESE) direction;
- July-August, when the swell waves are similar as in the dry period. The current, however is in the opposite direction in a WNW direction with a velocity of approx. 0.5 knots;
- The rest of the year, the currents (wind waves) are in ESE direction for 3 to 4 days in a row and then alternating with currents in opposite direction during a similar number of days and with a similar velocity. Due to this phenomenon, the current does not have a net effect on the sediment transport during these months and hence the sediment transport is based on the swell-wave induced currents in WNW direction only.

The initial design of the port was based on the net annual average sediment transport that was estimated between 130,000 and 190,000 m³ in WNW direction.¹³ The feasibility study emphasizes however that "In general it should be borne in mind that the available formulae are not accurate enough to give an exact answer on the sediment transport."¹⁴

The feasibility study was set up as the required input for an application for an ORET grant.¹⁵ Initially, the idea was to submit a single application which would cover both the maritime infrastructure works and the supervision and technical assistance. After consultation with FMO it was decided to submit two separate applications.¹⁶

The applications for the ORET grant financing were submitted to FMO on 13 October 2005. The Grant Decision was taken on 21 June 2006 and the Grant Agreements and commercial contracts were signed on 7 September 2007. Several conditions had to be fulfilled prior to the down payment. The date of the down-payment to Van Oord was 14 December 2007, while the down-payment to Royal Haskoning took place on 26 May 2008.¹⁷ Table 3 below gives an overview of the main events.

The construction of the fishery port officially started on 15 January 2008 and was going to be completed within a period of 18 months.¹⁸ The formal completion date was 3 July 2009 when Van Oord "submitted" the works to EPNAC.¹⁹ The port was officially inaugurated in August 2009.²⁰ It was constructed with several adjustments in the design (see annex 'Financial Overview' in the final report of Van Oord).²¹

¹² Royal Haskoning and Van Oord (2005:39-40).

¹³ Royal Haskoning and Van Oord (2005:39-40). The estimated annual overall net wave transportation is the sum of, respectively, net wave transportations of 50,000-60,000 m³ in the dry period, 20,000-30,000m³ in July-August and 60,000-80,000m³ during the rest of the year. According to another source of information, the swell waves were estimated to result in an annual sand transportation of 900,000m³ in northerly direction throughout the year while the local storm or wind waves generated an estimated annual sand transportation of 725,000m³ in opposite direction. Hence, the average annual net "littoral drift" was estimated to be 175,000m³ in northerly direction (Review of request for project application, November 2008, p. 2). At the end of the project period, and subsequently in the years after the project, Royal Haskoning continued to study and assess the actual sediment transport rates at the Champerico site. In November 2009, Royal Haskoning produced a report "Morphological Assessment and Master Plan for Solution". The report, which is based on site survey data rather than what proved to be unrepresentative information used in the Feasibility Study, concluded that the volumes of sediment transport varied considerably over a 12-year period from just less than 170,000m³ in 2000 to over 700,000m³ in 2008, the average being 500,000m³ (communication received from Royal Haskoning).

¹⁴ Royal Haskoning and Van Oord (2005:39).

¹⁵ In its Grant Proposal, FMO (2006:8) even called it a "part of the ORET application."

¹⁶ FMO (2006). Grant Proposal, p. 3; interviews.

¹⁷ ORET.nl (2009); FMO (2006:1-2).

¹⁸ See letter on Proposal for Use of Contingency from Royal Haskoning to ORET.nl, dated 10 November 2008.

¹⁹ ACTA No. 2009-02 DE ENTREGA Y RECIBO FINAL DE CONTRATO DE CONSTRUCCIÓN and Letter of Van Oord to Royal Haskoning regarding "Certificado de Recepción" dated 2 July 2009.

²⁰ <http://elperiodico.com.gt/es/20090817/pais/110580>

²¹ Van Oord (2010b). Progress report ORET Nr. 9 (Final Report), 31/12/09 -01/02/10.

The government of Guatemala and ORET appointed Royal Haskoning (RH) as 'resident engineer' for oversight of the construction activities. RH also provided technical assistance to the local port authority EPNAC to independently maintain the port and the local fishermen to enhance the quality of their catch. The one-year technical assistance programme of RH, which was to start after completion of the port, was started earlier upon request of EPNAC.

The port was constructed on a coastal site that was obtained by clearing mangrove forest. Prior to the start of the construction activities, the government of Guatemala made an environmental impact assessment (EIA).²² Royal Haskoning reviewed that assessment on behalf of FMO.²³ The studies resulted in the allocation of additional financial resources for (re)planting more mangrove forest than the initially proposed area (20 instead of 4.9 hectares) elsewhere, to compensate the environmental damage related to the area of mangrove forest that was cleared.²⁴

2.4. Financing of the Transactions

The sources of finance of the transactions are shown in Table 1. The amounts in the table include contingencies, which amounted to € 799,812 for GT00017 and € 58,633 for GT00018.

Table 1: Financing of the Transactions (Euros)

	ORET Grant	Non-ORET Financing	Contract sum
GT00017 (Van Oord)	8,405,217	15,311,536	23,716,753
GT00018 (Royal Haskoning)	586,129	645,156	1,231,285
Total	8,991,346	15,956,692	24,948,038

Source: FMO (2006) Grant Proposal

The Grant Proposal mentions about the actual cost of the project: *"This is not a lump sum project. The final project cost will, among others, be based on the amount of material used against the price accorded in the contract. As there has not been a detailed soil investigation, the application assumes the worst soil condition. Hence, most probably the final cost will be lower than assumed in this proposal due to less needed material."*²⁵

A total of 142 million Quetzales which by and large corresponds to the nearly € 16 million on non-grant funding was to be assigned from the government budget in the years 2004-2007.²⁶ Table 2 brings together scattered information on the sources of the non-ORET financing of the project.

Table 2: Sources of the Non-Grant Financing of the Project (Millions of Quetzales)

Source	2004	2005	2006	2007	2008	2009
To be assigned by the Government of Guatemala	10	30	40	62		
Approved investment budgets of Ministry of Finance		30	40	40		
Externally funded by an IDB loan (BID-1598/OC-GU)			40			31
To be deposited on IOM's account (as precondition)		40	40			
Actually deposited on IOM's account			40	40		
Amount included in budget from own resources					40	

²² M.E. Cárcamo González, G.E. Reyes Morales, S.A. Ramírez Juárez (2005). *Evaluación de Impacto Ambiental. Construcción del Puerto de Pesca*, Champerico, Retalhuleu, Guatemala C.A. Champerico, Mayo de 2005.

²³ Royal Haskoning (2006). *EIA Fishery Port Champerico, Guatemala. Review of Guatemalan EIA Report*. Nijmegen: Royal Haskoning, 15 June 2006.

²⁴ See Royal Haskoning (2006:37).

²⁵ FMO (2006:3).

²⁶ Letters of the *Oficina del Comisionado Presidencial de Mega Proyectos* to FMO, dated 19 October 2005 and 28 November 2005.

Source: Authors' elaboration based on Letters of the *Oficina del Comisionado Presidencial de Mega Proyectos* to FMO, dated 19 October 2005 and 28 November 2005; E-mail communication of the Netherlands Embassy in Guatemala; public finance information of various years.

(www.minfin.gob.gt/downloads/presupuesto_aprobados).

Table 2 shows the annual disbursed amounts and indicates that an amount of Q30 million from own resources was included in the approved investment budget of 2005. The feasibility study mentions that the Central-American Bank for Economic Integration (BCIE) was interested in providing commercial funding but this never happened. However, part of the investment was externally funded by an IDB loan of Q40 million provided in 2006.

The Government of Guatemala agreed with FMO that the payment of the non-grant financing of the project would be done via the International Organisation for Migration (IOM) and that it would deposit an amount of Q80 million on the IOM account prior to the start of the project. Initially, the first Q40 million was to be deposited in 2005 while the next deposit of Q40 million was to take place in 2006. Because of delays the first deposit actually occurred only in 2006 while the second Q40 million was deposited in 2007. The 2007 budget also included an amount Q40 million. The 2008 budget included an amount of Q90 million, comprising Q40 million from own resources and Q50 million financed by the ORET grant.²⁷ Similarly, the 2009 budget included an amount of Q62.6 million, half of which was financed by an IDB loan and the other half by the ORET grant.²⁸

2.5. Main Stakeholders

The main Dutch stakeholders in the project were FMO and its successor ORET.nl as administrators of the ORET programme, the Netherlands' Embassy in Guatemala, the applicants (Van Oord NV and Haskoning BV), and Witteveen & Bos, the company hired by FMO for the assessment of the technology and the usual price/quality check.

According to the project documentation, the main Guatemalan stakeholders were the fishermen of Champerico as ultimate users of the port, and the direct beneficiary of the project, EPNAC, which falls under the *Comisión Portuaria Nacional* (CPN) – an advisory committee of the *Ministerio de Comunicaciones, Infraestructura y Vivienda* (MinCIV). As a condition of the grant agreement, MinCIV had to confirm that at least the semi-industrial fleet was to leave Quetzal within, at most, 15 years. The company PESCA S.A. was another stakeholder and had to state that it had the intention to move its complete fleet of semi-industrial vessels to Champerico. The CPN had to confirm that an average white fish price of US\$1,000/ton for this region was feasible while EPNAC had to prove that it owned the land where the port was going to be built.

Another important stakeholder was SEGEPLAN (the *Secretaría de Planificación y Programación de la Presidencia*), which signed the grant agreement, while the Ministry of Finance (MoF) signed for awareness/agreement of the grant agreement and guaranteed to cover all losses made during the first 15 years of operation (this includes provisioning for O&M). The presidential committee MegaProyectos of President Berger was the initiator of the project. This organisation was founded after the election of President Berger to make possible the execution of 4 Mega projects.

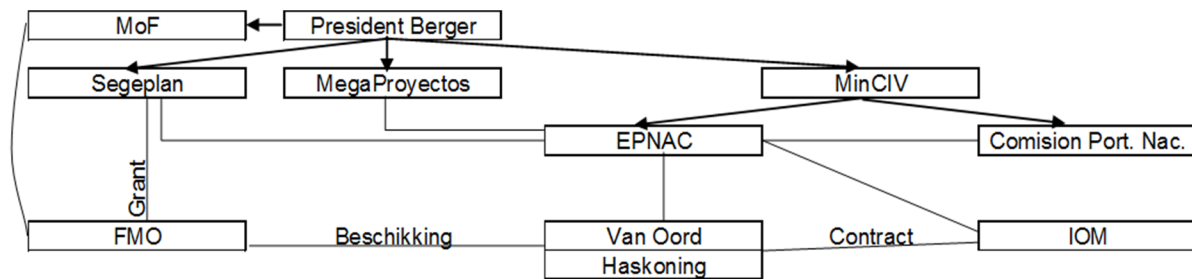
A complicated institutional structure was set up for the application and the port operation.²⁹ The UN body IOM acted as the intermediary for the provision of non-grant financing and co-signed the commercial contracts with Van Oord and Royal Haskoning as contracting authority while EPNAC signed as owner of the port. Figure 4 shows the institutional set-up, which indicates that FMO provided the grant decision ("beschikking" in Dutch) to the applicants Van Oord and Royal Haskoning as was the practice in ORET. The arrows show the direct managing (operating) lines, while the normal lines refer to other bilateral relationships between stakeholders in the project.

Figure 4: Institutional Set-up of the Project

²⁷ www.minfin.gob.gt/downloads/presupuesto_aprobados/2008/tercera_parte/crif.pdf.

²⁸ www.minfin.gob.gt/downloads/presupuesto_aprobados/2009/segunda_parte/egresos_institucion/c013.pdf

²⁹ FMO (2006:5).



Source: FMO (2006) *Grant Proposal*

According to Guatemalan public finance law, unused public funds have to be returned to the treasury at the end of the corresponding fiscal year. In order to prevent this from happening, the Government proposed to use the good offices of IOM to whom this law does not apply given its international status. Other reasons for involving IOM that have been mentioned, are lack of confidence that EPNAC would pay, more transparency (i.e. the government wanted to avoid the suspicion of corruption) and its use to secure the waiver from the legal obligation of ICB in public procurement. That waiver was a prerequisite of FMO.

Box 1: Low Profile Stakeholders: Interests Behind the Scene

According to official documents, the construction of the fishery port of Champerico responded mainly to the interest of the fishermen community. Fishermen were presented as the main beneficiaries of the ambitious development project (a mega project), which was also expected to bring about benefits for the shrimp processing and tourism industries and free capacity in Puerto Quetzal. Guatemalan press clippings offer scattered glimpses of the behind-the-scene role of influential stakeholders, such as CAMARSA, NOVACOM and top firms of the tourism industry.

CAMARSA – the shrimp-processing factory located in Champerico – surely would save a lot of money if its shrimp and raw sea catch could avoid the triangular shipping route with Puerto Quetzal. CAMARSA is a subsidiary of PESCA, which is part of AQUA, a business consortium and main shrimp producer and exporter of Guatemala. Besides this connection of CAMARSA to the project, it can be mentioned that CAMARSA’s owner, José Ortiz Altenbach – also a main shareholder of PESCA– was married to a daughter of President Berger (Melendreras 2011:60).³⁰

According to the Feasibility Study prepared by Royal Haskoning and Van Oord, the project would also benefit Puerto Quetzal because a port area would become available once the fishery fleet had moved to Champerico. To quote from the Feasibility Study, the “area now occupied by this fleet, for free, can almost immediately be used for other commercial activities of Quetzal. The benefit of avoiding congestion and chaotic fishermen’s behaviour on security and safe conditions at a commercial port is a fact but has not been quantified” (2005: iv). This scenario implied a nexus with NOVACOM.

NOVACOM started its operation in the hydroelectric sector of Guatemala. Currently it specializes in the distribution of machinery and electric and port equipment. The Ports of Quetzal and Santo Tomás de Castilla have been using NOVACOM’s crane services. NOVACOM is also the commercial representative in Guatemala of Van Oord.

NOVACOM so far has worked under the ownership and management of Jürg Widmer Probst, an influential businessman of Swiss origin. Probst was the initiator of the proposal to ORET, “had good contacts, knew everyone in Guatemala and could arrange many things” (interview with Bea ten Tusscher, former Ambassador of the Netherlands in Guatemala,). A Guatemalan newspaper nicknamed Probst the “King of the Ports,” given his substantial assets in port activities in Guatemala.³¹

According to a former staff of the Office of MegaProyectos, the project was also interesting for attracting future public and private capital investments in the sector. It was thought then that the port would be the anchor for tourism development along the southern coast of Guatemala, attracting high-level tourism (from southern Mexico, Central America, Guatemala and the rest of the world). Also it would be the point of arrival of tourist boats (small and large) which could stimulate real estate development and the tourism sector restaurants as well as large hotel parks

³⁰ Paulo Melendreras (2011). “El hombre y el mar en el Puerto de Iztapa, Escuintla: El sector artesanal de la pesca y el impacto de las empresas industriales que operan en el Océano Pacífico de Guatemala,” *El Observador*, Year 6, No. 28 and 29 (December 2010-March 2011). <http://www.scribd.com/doc/10277785/03-2011-El-Observador-Nos-28-29>.

³¹ “El Estado como botín: El Rey de los puertos,” *El Periódico*, 23 September 2013. <http://www.elperiodico.com.gt/es/20130923/investigacion/234928>.

(IRTRA Retalhuleu). Retalhuleu is a larger geographic administrative unit to which the Municipality of Champerico belongs.

For many years there had been social pressure from the side of the local community to construct a fishery port in Champerico. The local community was, however, very diverse, and included both poor people and very influential business groups from fishing, agriculture, and tourism industries. Apparently, there were different interests behind the scene and responsibilities were not clearly defined. As former Dutch Ambassador in Guatemala Bea ten Tusscher pointed out: "It was always a very non-transparent project as far as responsibilities are concerned."

2.6. Main events

Table 3 presents an overview of the main events since the start of the preparation of the project.

Table 3: Overview of Main Events*

Date	Event
2004	Initial discussions between Government of Guatemala and Van Oord/Royal Haskoning
October 2004	Start of the feasibility study which was co-financed by a grant from the PESP programme ³²
July 2005	Feasibility study completed ³³
13-10-2005	FMO received ORET applications from Van Oord and Royal Haskoning ³⁴
02-06-2006	FMO/ORET Investment Officer submits ORET Grant Proposal to the Grant Committee (GC). ³⁵ FMO decided to keep the construction cost the same as proposed in the applications.
06-06-2006	GC discusses Grant Proposal
21-06-2006	Grant decision ("subsidiebeschikking") taken by FMO/NIO
05-12-2006	Guatemalan Congress approves <i>Decreto Número</i> 45-2006 regarding the construction of the fishery port in Champerico ³⁶
04-07-2007	Guatemalan Congress approves <i>Decreto Número</i> 33-2007 regarding the additional funds for the construction of the fishery port in Champerico ³⁷
06-09-2007	Commercial contracts Van Oord and Royal Haskoning signed with IOM; Grant agreements GT00017 and GT00018 between Government of the Netherlands and Government of Guatemala signed ³⁸
14-12-2007	Down payment to Van Oord
15-01-2008	Official start date of contract (At that date VO submitted the requisite "performance bond" to the client) ³⁹
09-04-2008	Start of the construction of the large breakwater (95% completed in August; fully completed in mid-September)
26-05-2008	Down payment to Royal Haskoning
31-05-2008	Start of the dredging of the basin ⁴⁰
Early June	Start of the construction of second breakwater completed by mid-august 2008 ⁴¹
10-11-2008	Follow-up letter of RH on proposal for use of Contingency ⁴²
31-12-2008	88% of project completed ⁴³
29-01-2009	VO received approval from ORET.nl to use contingencies for additional works
08-04-2009	Start of TA ⁴⁴
11-06-2009	ORET.nl letter SEGEPLAN re Request Disbursement Contingencies
June 2009	Completion of 1 st Phase of construction ⁴⁵

³² Letter Royal Haskoning of 11 October 2005

³³ ORET Grant Proposal prepared by Iwan Meister (FMO/ORET)

³⁴ FMO (2006). ORET Grant Proposal. The application form of Haskoning is dated 24 August 2005.

³⁵ FMO (2006). ORET Grant Proposal.

³⁶ Van Oord (2007a). Progress report ORET 21/06/06 – 31/12/06. The project had to be approved by parliamentary decree, so that the approval could not be reversed by a next government.

³⁷ Van Oord (2007b). Progress report ORET Nr. 3, 01/01/07 – 30/06/07.

³⁸ Letter ("Zendbrief") from NL Embassy in Guatemala to Oret.nl (including enclosed Grant Agreements).

³⁹ Van Oord (2008a). Progress report ORET Nr. 4, 01/07/07 – 31/12/07.

⁴⁰ Ibid.

⁴¹ Van Oord (2009a). Progress report ORET Nr. 6, 01/07/08 – 31/12/08.

⁴² Royal Haskoning (2008). Letter of 10 November 2008.

⁴³ Van Oord (2009a). Progress report ORET Nr. 6, 01/07/08 – 31/12/08.

⁴⁴ Royal Haskoning (2010). Final Progress Report, July 2010.

03-07-2009	VO received "Acta de entrega" (Taking-over Certificate) from the client; official date of completion (copies of document submitted to Oret.nl) ⁴⁶
14-07-2009	RH Letter to ORET.nl re sedimentation analysis of port entry channel
17-08-2009	Official inauguration of the "first phase" of the port
18-11-2009	RH presented a complementary study with possible technical solutions to reduce the problem of faster than expected sedimentation, and the financial implications of these solutions ⁴⁷
27-11-2009	VO and RH sent a letter to the former Minister for Development Cooperation, Mr. Koenders. ⁴⁸
02-12-2009	The local authorities awarded VO a follow-up assignment in line with the recommendations of RH. This contract is fully financed from own financial means of the Government of Guatemala. ⁴⁹
15-12-2009	All payments received by VO. ⁵⁰
05-02-2010	Start of 2 nd phase of construction ⁵¹
July 2010	EPNAC submitted Certificate of Completion to RH ⁵²
25-01-2011	Final report of RH received by Oret.nl
25-01-2011	Declaration by accountant PwC regarding RH received by Oret.nl
05-04-2011	Final report of VO and Declaration by Accountant Ernst & Young sent to Oret.nl
Mid 2011	Definitive determination of the grants (Official closure of the project) ⁵³

* RH = Royal Haskoning; VO = Van Oord

⁴⁵ Royal Haskoning (2010). Final Progress Report, July 2010.

⁴⁶ Van Oord (2009b). Progress report ORET Nr. 7, 01/01/09 – 31/07/09.

⁴⁷ Ibid.

⁴⁸ Letter from Van Oord and Royal Haskoning to Minister Koenders concerning the fishery port in Champerico, Guatemala of 27 November 2009.

⁴⁹ Van Oord (2010a). Progress report ORET Nr. 8, 01/08/09 – 31/12/09.

⁵⁰ Van Oord (2010b). Progress report ORET Nr. 9 (Final Report), 31/12/09 – 01/02/10.

⁵¹ Royal Haskoning (2010). Final Progress Report, July 2010.

⁵² EPNAC (2010).

⁵³ ORET.nl (2011). Beschikking inzake aanvraag GT00018 "Champerico Fishery Port," in het kader van het programma OntwikkelingsRelevante Export Transacties (hierna ORET), 31/05/11.

3. Methods of Evaluation

3.1. Research Methods

The evaluation of these transactions included a review of project documentation and other relevant literature, an analysis of any relevant statistical information, focus group discussions and interviews with key stakeholders both in Guatemala and in the Netherlands.

Two missions were conducted by Dr. José Rafael del Cid and Ms. Vivian Guzmán in respectively April and June 2014. In both missions they interviewed various persons in Guatemala City and Champerico while in their second mission they also conducted two focus group discussions with members of two community organizations in Champerico and visited a mangrove area.

3.2. The Theory of Change

Below, the following two evaluation questions are addressed:

- i. What was the theory of change of the intervention (as summarized in a reconstructed results chain through which inputs are translated into successive higher levels of results)?
- ii. What external factors have influenced or possibly hindered those results from being achieved?

The theory of change is summarized in the results chain shown in Table 4. The results chain shows the relation of the inputs to (possible) outputs, outcomes and the final impact. It is clear that the results chain broke down in practice, as the project did not result in a properly functioning port for artisanal fishermen and semi-industrial fishery. It has been claimed that the port was functioning at the moment it was completed, following dredging of the port basin and access channel.⁵⁴ However, soon after, a much higher than anticipated rate of sedimentation hindered the normal operation of the port.

Table 4: Reconstructed Results Chain of the Champerico Fishery Port Project

Inputs	Activities	Outputs	Outcomes	Long term Results
ORET Grants	Clearing mangrove forest and preparation of the construction site	Fishery port constructed	Reduced landing time	Poverty reduction
Other financing	Dredging	Sports fishery facility	Enhanced catch	Higher living standards
Human resources (different stakeholders)	Construction of port facilities	Construction activities supervised	Enhanced tourism	Reduction of crime
Area (15 Ha of mangrove forest)	Planting mangrove forest	20 Ha of mangrove forest planted	Improved safety	Reduction of outmigration
	Supervision of construction activities	Trained EPNAC staff and fishermen	Increase in employment	
	Providing TA	Improved business climate	Increase in incomes	

⁵⁴ Interview with representative of Van Oord.

4. Results

The following sections will address the research questions in Annex 5 of the Terms of Reference as classified under the DAC evaluation criteria of efficiency, effectiveness, sustainability, policy relevance and coherence, as well as additionality and catalytic effect.

4.1. Efficiency

The first research question concerning efficiency is: To which extent has the ORET-transaction achieved its expected outputs on schedule and within budget?

4.1.1 Outputs and Use of Budget

According to the results chain, expected outputs were:

- Fishery port constructed
- Supervision carried out
- Technical assistance provided
- Mangrove reforestation
- Sports fishery facilities
- Improved business climate.

The construction works officially started on 15 January 2008. Some preparatory activities had been carried out in the preceding months. The "first phase" of the construction of the port was formally completed in July 2009 and officially inaugurated in August of that year. Most of the works specified in the Bill of Quantities contract were carried out and realized on schedule and within budget. Some works were executed in a different way than specified in the contract, according to a variation in the Bill of Quantities (BoQ).

Table 5: Construction Budgets - June 2005, November 2008 and June 2009 (Euros)

Nr	Item	Application BoQ 18/06/05	04/11/2008 ^a	June 2009
1	General items	2,226,853	2,226,853	2,134,336
2	Main breakwater	8,025,025	7,824,225	7,863,609
3	Small breakwater (<i>espigón</i>) west side of port	498,400	482,600	585,420
4	Shore protection works at river banks and port basin (<i>dársena</i>)	1,803,150	1,780,550	2,989,575
5	Port access channel (<i>bocana</i>)	941,050	919,050	1,007,362
6	Dredging	1,956,000	1,956,000	2,963,241
7	Shed	779,480	779,480	611,477
8	Quay wall with sheet piles	3,681,205	3,542,563	3,185,834
9	Floating jetty	249,875	249,875	260,720
10	Resting jetty on steel piles	1,787,650	1,787,650	1,838,158
11	Other items	1,368,065	1,368,065	570,232
	Subtotal	23,316,911	22,916,911	23,508,026
	Contingencies	400,000	799,842	0
	Ramp			60,000
	Sand-retaining groyne			147,727
	Total Construction	23,716,753	23,716,753	23,716,753

Sources: Original *Lista de Cantidades* (Bill of Quantities) dated 18 June 2005 attached to the contract between Van Oord and IOM/EPNAC; Van Oord (2008) REVISIÓN 04 Noviembre 2008; Van Oord (2009) ESTIMACIÓN de JUNIO 2009.

Note: ^a Same as in Bill of Quantities dated 18 January 2007 attached to the contract between Van Oord and IOM/EPNAC; items 2 and 6, Subtotal and Total are the same as in FMO (2006) *ORET Grant Proposal*, in which the other items were not included separately.

Table 5 shows the original and revised budgets excluding taxes of the construction works. Some amounts in the second column of the table are somewhat lower than the corresponding ones in the first column, because the original Bill of Quantities included a smaller amount for contingencies than the amount shown in Column 2. The changes between 2008 and 2009 reflect the use of the contingencies for partial financing of additional works (including a sand-retaining groyne and a ramp to get the small boats out of the water for repair and maintenance). The remaining finance came from savings on other works (included in budget items 7, 8 and 11).

Supervision of the construction activities also started in January 2008. The budget for supervision was €803,178 (+ €40,159 contingencies). Technical assistance started in April 2009 and continued for about one and a half year. The budget for technical assistance was €369,474 (+ €18,474 contingencies). The amounts in the budget and the contingency sums were fully used. ORET.nl approved the use of the available contingency budget of €799,842 for construction activities (transaction GT00017) and of €58,633 for supervision (GT00018) on 11 June 2009.⁵⁵ The use of the contingency budget is specified in Table 6.

Table 6: Use of the Contingency Budget (Euros)

	Van Oord (GH00017)	Haskoning (GH00018)
Slipway (ramp)	60,000	
Adjustment to BoQ	592,114	
Sand retaining groyne ^a	147,727	
Supervision		58,662
Total	799,842	58,662

Source: ORET.nl (2009) Memo regarding ORET GT00017/18 Champerico Guatemala – Request for use of the contingency sum, dated 25 May 2009

Note: ^a Maximum amount that could be paid after determination of the definitive grant

In interviews, the construction works as such have been rated as adequate but responding to a wrong design. E.g., two members of the current management of EPNAC stated that *“The construction as such could be considered good but it responds to a poor design”* They also referred to an arbitrary modification to the original design [of the breakwater].”

The change in design has been mentioned as one of the causes of the sedimentation problem. Royal Haskoning’s supervisor of the project, Jan-Willem Jongbloed, disagrees with this viewpoint and also with the statement that the change was made arbitrarily:⁵⁶

“According to the design, the head of the breakwater should always be positioned at a certain (minimum) depth. The depth – and not so much the distance or location off the coast – is decisive for the effective functioning of the breakwater. A breakwater is always dimensioned on a maximum (draft) wave that it can break. A first design of the breakwater was made on the basis of the Feasibility Study. A bathymetry was made by Van Oord off the coast of Champerico. As is usual, the bathymetry was redone at the start of construction. The shore is much more dynamic than something on land. Especially the steepness of the shore (“foreshore” or underwater shore) actually changes continuously. The location of the coastline itself hardly changed. However, the steepness had increased and so the underwater shore had become deeper. For that reason, it was decided to slightly shorten the first part of the breakwater and to construct the second part closer to the coast but at the same depth as in the original design”.

However, in their 2009 letter to Minister Koenders, Van Oord and Royal Haskoning explained that the required change in the design of the port could only be partly realized because only limited financial resources were made available by Guatemala and the Netherlands for the execution of the project. The letter indicates that, for that reason, at the moment of making the change in the design, it was already clear that the modified design would be more ‘susceptible’ to the problem of

⁵⁵ ORET.nl (2011) Beoordelingsformulier slotdocumenten, p. 3.

⁵⁶ In later communication, Royal Haskoning has emphasized “that there was no arbitrary modification of the original port layout. When the works commenced on site, the slope of the seabed was found to be steeper than measured at the Feasibility Study stage. The slope was 1:30 as opposed to 1:35. This resulted in the main breakwater being repositioned more towards the coastline in order to keep the works within the approved budget. This change in design had to be done quickly as the construction window with the seasonal limitations needed to be grasped but the changes were done in close consultation with all parties involved.”

sedimentation but that a complete overhaul of the project was not considered realistic given that the construction activities had already progressed considerably.⁵⁷

The works did not result in a properly functioning port due to the problem of excessive sedimentation. The amount of (net) sand transportation was not sufficiently taken into account in the design of the port. The question then rises who can be held responsible for the failure to construct a properly functioning fishery port. As is to be expected with failures, differing views are expressed in interviews and documents:

"It was an enormous challenge for Van Oord and Royal Haskoning to construct the port. They failed in that challenge. Someone is to blame for the failure. Probably Royal Haskoning can be blamed more than Van Oord, because Royal Haskoning did the design and supervised the construction."
Teunis Kamper, former Ambassador of the Netherlands in Guatemala.

"As far as the excessive sedimentation is concerned, you can argue about who is responsible for it. The responsibility for the sedimentation rests certainly not with the contractor. Van Oord had no design responsibility. The Engineer is responsible for the design. Van Oord works according to the approved design. If someone would have to be held responsible, it would be Royal Haskoning, not Van Oord. In itself, a 100% responsibility does not necessary means 100% liability.⁵⁸ Another contract form such as turnkey contract would not have resolved what happened though perhaps someone else would have paid the bill"

Erwin van den Bergh of Van Oord, former project director.

These views have to be contrasted with that of Royal Haskoning provided in a later communication:

"Royal Haskoning was never commissioned to carry out any detailed design work nor to prepare the contract documents required for construction of the port. A detailed lay-out design and associated detailed sedimentation studies and modelling has not been anyone's specific responsibility and was not undertaken before construction works commenced."

Hence, two things happened: (1) the Feasibility Study – a study at conceptual level – severely underestimated the degree of sand transportation; and (2) no detailed lay-out design based on a rigorous sedimentation study was made because apparently neither Royal Haskoning nor Van Oord were made responsible for that task or felt an individual responsibility for it. With respect to the fact that no detailed sedimentation studies were done and no detailed design was made, one can say that other stakeholders in the project, first FMO and later ORET.nl as administering agencies and EPNAC as the client, also failed by omission. They had not spelled out this step as a milestone in the commercial contracts and grant agreements nor did they object to the start of the works in the absence of a detailed design based on a rigorous study of actual sand transportation.

Box 2: Scientific Miscalculation: Joke of Nature or Adapting Reality to the Project Design?

After the construction, maintenance dredging will be required after 10 to 15 years after the start of the construction. After that period 150,000 m³ will have to be dredged, and thereafter at intervals of 4 years (Royal Haskoning and Van Oord. Feasibility Study, 2005: 65).

The risk of excessive sedimentation had to be well known to Royal Haskoning. Its chief engineer, Ronald Moor, was since many years familiar with the Pacific Coast of Central America and Mexico. The Grant Proposal mentions that in 1976 Ronald Moor participated in a study supported by the Inter-American Development Bank and FAO to build a fishery port on the Pacific Coast of Guatemala. His name is also mentioned in relation to the construction of Puerto Madero in Mexico and Puerto Quetzal. Puerto Madero faced severe sedimentation problems.

EPNAC was established in the 1950s, when the commercial activities in Champerico were at their best. By 1970, the pier could no longer hide its antiquity. Improvements or construction of new facilities were required. This coincided with the interest of the national government to build a modern port on the Pacific in response to growing demands of domestic and international trade.

⁵⁷ Letter from Van Oord and Royal Haskoning to Minister Koenders concerning the fishery port in Champerico, Guatemala of 27 November 2009.

⁵⁸ This statement on the responsibility is based on the argument that after 2005 (the year of the Feasibility Study) a sudden change of the waves' net sand transport capacity occurred, possibly related to a steepening of the seabed slope near the coast (Internal Van Oord memo from G. Smith to E. Van den Bergh, November 04, 2010; this argument is also used in an earlier letter from Royal Haskoning, J.W. Jongbloed, to the President of EPNAC, L. Prado, July 11, 2009).

Hence, some technical studies were undertaken to find the best place to build the new port. A technical feasibility study conducted in 1977 by Boswell Engineering Co. and Olko Engineering⁵⁹ concluded that the construction of a port in Champerico "was technically and economically feasible, with a small but positive rate of return on the investment."⁶⁰ But the government ended up deciding in favour of constructing a commercial port in Puerto Quetzal with breakwaters of much larger dimensions than constructed in Champerico.

Champerico and surrounding communities did not give up and used economic and political power to influence the government. But this time the demand for new port facilities did not go beyond that of building a fishery and tourist port. Other studies followed (JICA, USAID) and also reaffirmed the technical feasibility to build the port. The point is that from the earliest to the most recent studies, sedimentation was identified as a major risk.

The feasibility study of Royal Haskoning and Van Oord concluded that the project would be economically feasible, i.e. relevant for the nation's development but not commercially viable. This was a conclusion that justified the ORET intervention, since not being commercially viable was a requirement for a grant. This conclusion also satisfied the government, which approved – by means of the Ministry of Finance – a permanent subsidy to compensate the expected negative operating balance of the port.

The feasibility study did not sufficiently address a possible sedimentation miscalculation as a risk. Given the large fluctuations in wave-driven sand transport, much more cautious assumptions would need to have been made assuming a worst case scenario. Only the beneficiaries' inability to attain goals regarding fish catch and tourism were considered as risk factors for the project. Also contamination by dust and noise and some social risks were presented but these could be mitigated by redress measures. Dredging would not be required in the first ten years: *The sediment transport is not so high as to make the project unfeasible, although maintenance will be required at intervals in the future. Maintenance dredging can be avoided by the construction of a groyne that again will stop all the sediment transport.* The future cost of dredging or other measures to avoid dredging were not expected to become a problem.

Detailed studies could have led to different conclusions about the feasibility of the project. The following observation has been made:

"It is hard to understand that companies with such a track record could severely underestimate the degree of sand transportation. With perfect hindsight you can conclude that the construction of the port in Champerico should never have happened. Better studies and measurement of the sand transportation problem should have led to the cancelling of the project".⁶¹

Teunis Kamper, former Ambassador of the Netherlands in Guatemala.

Royal Haskoning has explained that the budget of the ORET project included an item for "detailed engineering" but that "the construction budget was already assigned in detail as if the conceptual design was in fact a detailed design, which it was not. A missing element is that between the conceptual design and the start of construction there was no real intermediate 'design phase' during which all elements of the design would have been scrutinized in much more detail, including the sand transport."⁶²

In the above-mentioned 2009 letter to Minister Koenders, Van Oord and Royal Haskoning indicated that only during the construction of the port it became clear that the natural profile of the shoreline had drastically changed since 2005, but that there was no good explanation for that change.⁶³ Apparently, there were unexpected 'long-periodical fluctuations in the degree of in-bound wave

⁵⁹ Boswell Engineering Company and Olko Engineering (1977). *Expansion of the Port of Champerico, Guatemala for EPNAC, Vols. I, II and III*. This study includes a study of the hydraulic model developed in the Alden Research Laboratory of the Worcester Polytechnic Institute, Holden, Massachusetts.

⁶⁰ Interestingly, in interviews it has been pointed out that some years later the Guatemalan government hired a Mexican expert who warned that Champerico was not a suitable location for a port because of the high levels of sand transportation.

⁶¹ That is, cancelling at an early stage. The application should either have been rejected or not even have been submitted to ORET.

⁶² Communication received from Royal Haskoning.

⁶³ Letter from Van Oord and Royal Haskoning to Minister Koenders concerning the fishery port in Champerico, Guatemala of 27 November 2009.

energy,' a phenomenon which none of the concerned persons could explain. This is in line with the following remark of Erwin van den Bergh of Van Oord:

"With hindsight we can say many things. If the question is should we have analysed it better, then the answer is: yes, of course. But another matter is whether we could have analysed it better? I don't think so. With the then available data things could not have been done differently. If we had known beforehand, we would have done things differently".

Technical cooperation was another expected output of the project. Activities started on 8 April 2009 and ended in July 2010.⁶⁴ The technical cooperation comprised, among others, training: "By the end of June 2010, over 300 fishers and co-operative members had attended the several training courses that were delivered. In addition, many fishers had attended the several on-the-job training practical demonstrations."⁶⁵ In addition, Royal Haskoning recommended a Budget Plan for 2010-2011 for EPNAC.⁶⁶

Royal Haskoning has indicated that the TA to EPNAC and the fishermen was provided at the beginning of the port operation. A fishery port operations expert visited the port a number of times and stayed for some time in Champerico after the end of the construction works. Several manuals were made and workshops were organized. A lot of things were considered from a practical point of view to facilitate the operation of the port. EPNAC former and current general managers declared they were trained together with another 6 to 8 EPNAC technicians on how to operate the new port. By arguing that an immediate training of its technicians was needed, EPNAC requested the TA to start earlier before the date initially agreed.

Implementers and beneficiaries differ in their opinion about the way how technical assistance was provided. Royal Haskoning reported the achievement of the TA's goals. The TA also included a study trip to various fishery ports in Peru for a number of managerial level EPNAC staff, which the participants reported as being useful. In addition, training was provided to fishermen. According to Royal Haskoning, the fishermen seemed to appreciate the support. However, interviewed fishermen mentioned that training was delivered in a hurry and was of low quality. According to a high official of EPNAC, only a minority of the 300 fishermen who were invited to the training workshop actually attended it. Interviewed fishermen explained that the training workshop was organized without consulting the potential beneficiaries in advance on the best time and conditions that would guarantee a high degree of participation.

The TA to EPNAC was organized according to a model of an ideal, functioning port. However, the model was never applicable because the early problems of siltation of the port resulted in the inability to generate port revenues. This in turn led to the firing of most of the technical staff of EPNAC. At the same time, the continuous pressure from the angry fishermen forced a change of priorities. Since then, the priority was to keep open a channel at the mouth of the harbour – already plagued by sedimentation – that would at least allow the passage of small fishing boats. The most recent small-scale dredging activities took place in July 2014.⁶⁷

Another expected output of the project was mangrove reforestation. Mangrove seedlings have been planted some 40 to 60 kilometres north of Champerico. Some stakeholders are of the opinion that the reforestation was done in accordance with the agreements. However, there are doubts whether it was done well (see also below under the heading of environmental sustainability).

The EIA observed three major environmental impacts: (1) blocking a creek (Río Bolas) could cause flooding of a populated area in Champerico; (2) the disappearance of approximately 30 hectares of mangroves; (3) the destruction of 16 hectares of mangroves where the new port would be located. The EIA proposed several measures to mitigate these impacts, including reconnecting the creek through a channel wide enough to prevent flooding and allow passage of Cayucos, minimize the extent of mangroves to be destroyed by the construction, and replant in another site approximately 32 hectares of mangrove to compensate for the area destroyed by the construction of the port.⁶⁸

⁶⁴ Van Oord (2010). *Final Progress Report (15/09/2010)*.

⁶⁵ Ibid. page 9; Royal Haskoning (2011) Formulier Eindrapportage ORET.

⁶⁶ Ibid. page 12; Royal Haskoning (2011) Formulier Eindrapportage ORET.

⁶⁷ http://www.prensalibre.com/noticias/comunitario/critican-inversion-empresa-portuaria-champerico_0_1198680132.html.

⁶⁸ The mangrove seedlings have a survival rate of 0.5. Thus, to replace 16 hectares of mangrove it was necessary to plant 32 hectares (21,000 seedlings per hectare). The EIA listed some estuaries for replanting. Initially an environmental consultancy firm (Sistemas Integradas de Gestión Ambiental, SIGA S.A.) from the

The Dutch companies and the EPNAC managers claim that the mitigation works were carried out satisfactorily. However, some interviewees contradict this statement. For example, the rechanneling of Río Bolas remains incomplete, thus becoming a potential danger of flooding. Sedimentation also disconnected the neighbouring estuary from the sea. Moreover, the reforested area only replaced the area where the port was built but not the other extension (approximately 30 hectares) that would be affected indirectly. Reforestation was a conflictive process that put EPNAC at odds with the environmental movement. In the end, the perception of environmentalists is that the project fell short of the promised mitigation measures.

The fifth expected output, the provision of sports fishing facilities, has never been realized.

Finally, for obvious reasons, the business climate has not improved.

4.1.2 Reasons for Not Realizing Expected Outputs

The second research question related to efficiency is: if agreed outputs have not been realized, what were the reasons?

The most important reasons for not realizing the agreed outputs are having used the conceptual design of the port as if it were the detailed design and an error in the conceptual design of the port. This is related to the erroneous assumptions that were made about the level of sand transportation. "The reason of the much larger degree of sedimentation was that the amount of sand transport was in reality significantly larger than estimated initially on the basis of the models and the assumed stochastic wave data for the coastal region."⁶⁹ If the project application would have taken account of much higher levels of sedimentation, the design would have needed much larger dimensions and construction costs would have been much higher. That could well have led to the conclusion that the project was not economically feasible.

Another reason for not achieving the expected results may be insufficient monitoring. In its 6th Progress Report, Royal Haskoning recognizes this shortcoming: "In a future project we would do more extensive monitoring from the start to collect more information during construction and to be able to adapt the latter if needed."⁷⁰

4.1.3 Causes for Delays

Two other research questions concerning efficiency are:

- Did the transaction experience delays during the appraisal and/or implementation?
- If so, what were the main causes of these delays?

The transaction experienced several delays in the appraisal phase, because of extensive discussion and communication on (pre-)conditions, including on the legal cover required to deviate from the nationally prescribed ICB in the tender process and the complicated arrangements of the non-grant financing of the project. Some observers are of the opinion that the preparatory process took too long.

The project started later than planned because of not yet meeting all the conditions set originally in the Grant Proposal and subscribed by Van Oord and Royal Haskoning (see Annex A). These conditions were a product of the appraisal by FMO and discussions between FMO, the Dutch firms and the Government of Guatemala. The most difficult condition was the required statement of an authorized governmental entity that international competitive bidding was not necessary for the project and that single sourcing was allowed. Accepting that Van Oord and Royal Haskoning were the firms to be contracted directly for the construction of the port was a violation of the Procurement Law of Guatemala. Therefore approval by Congress was seen as a guarantee to ensure that the contract would not be abrogated by a subsequent Government. The transition from the Berger to the Colom administration did cause some additional delay. There were several consultations with vice-President Espada, especially about the issue of the waiver from ICB, but this did not lead to any changes.

national capital was subcontracted by Van Oord. Van Oord signed a Certificate of Completion of SIGA's tasks on 15 May 2009. According to local environmentalists, the work of this firm was considered unsatisfactory (as there was a low survival rate of plants). After protests, EPNAC contracted AVEDICHAMP-Red Manglar (a local environmental NGO) to replant another 6 hectares in El Manchón, a protected area near the town of Champerico, where about 80% of plants have survived.

⁶⁹ Jan-Willem Jongbloed, Royal Haskoning.

⁷⁰ Authors' translation of text in Dutch.

4.1.4 Price-quality Ratio

The final research question concerning efficiency is: how was the actual price-quality ratio of supplied services and works valued by the end-user?



Photo 3: "The world's most expensive swimming pool"

Ex ante, the technique and pricing were evaluated by Witteveen & Bos (FMO 2006:3). As part of the technical audit, 95 questions were asked, 8 of which related to sedimentation transport and sedimentation. The prices were considered to be reasonable. Because some works were realized in a different fashion than initially designed, the actual price-quality ratio of particular works may differ from the corresponding ratio assessed by Witteveen & Bos and, hence, the one underlying the Bill of Quantities attached to the contract with Van Oord.⁷¹ As indicated above, some interviewees rated the construction works as such as adequate, so the price-quality ratio may be seen as acceptable. However, since the project as a whole has not

resulted in a properly functioning fishery port, no other conclusion can be drawn that its price-quality ratio is extremely high. A lot of money was spent on what in the end was little more than "the most expensive swimming pool in the world."⁷²

4.2. Effectiveness

4.2.1 Longer-term Effects

The first research question concerning effectiveness is: Did the ORET-project result in the desired longer-term effects of stimulating the social and physical infrastructure in the recipient developing country?

In general terms, the project can be considered a failure. The end result is a malfunctioning port for artisanal fishery only, which is not accessible for semi-industrial fishing vessels and other commercial vessels. Of course, the old situation with the jetty was far from safe and often caused accidents. Fishermen can also get their boats out of the water easier by using the ramp. When it became clear that the port was not functioning properly, the question was asked whether it would be possible to repair the decrepit jetty for use by the artisanal fishermen. Though not a good solution from a safety point of view, the option of repairing the pier is not even available due to the high degree of sedimentation around the pier (compare Photo 4 and Photo 5 below). While the port is safer than the old pier for the personal safety of the fishermen, the new situation is far from ideal. Because the port is not functioning as intended, the fishermen still face hazard at the moment they enter the surf after the breakwater and also risk damage to their outboard engines that can hit the sandy bottom. The longer-term effects of the planned infrastructure development were not achieved for the reason that the port infrastructure is not functioning as intended (see Photo 6 to Photo 9).

⁷¹ The contract of Van Oord was based on FIDIC Red Book 1984, while that of Royal Haskoning was based on FIDIC White Book 1991.

⁷² Former high staff member of the Office of "Megaproyectos"; www.youtube.com/watch?v=t7LyT5EbBe0; www.skyscrapercity.com/showthread.php?p=87267220.



Photo 4: The old pier and the new port, May 2010



Photo 5: The old pier stranded, June 2014



Photo 6: About three quarters of the access channel is filled with sand. June 2014



Photo 7: Women help fishermen on their way to sea through the shallow channel



Photo 8: Only small fishing boats can enter the access channel due to its limited depth



Photo 9: High tide at the access channel

4.2.2 Employment Generation

Effectiveness also concerns employment generation. The relevant research question is: To which extent has the completed ORET-project increased local employment of men and women, directly and if possible indirectly, in the recipient country?

The Feasibility Study indicated that relatively few direct jobs would be generated during the construction of the port: "During construction the project will generate work and income for some 20 to 30 families" (Royal Haskoning and Van Oord 2005:66). Later, the Environmental Impact Analysis indicated: "The new port will create about 100 new jobs during construction" (Royal Haskoning 2006:44).

Estimates of employment generated during the construction of the port vary. A figure of direct employment of 110-120 persons has been mentioned (testimony of a local entrepreneur), but also a figure of 200-250, with very limited direct employment generated for persons from Champerico. Van Oord brought to Champerico 10 Dutch technical staff and some others from different nationalities like, Brazilians, Englishmen, Greeks, Iraqis, Surinamese, Mexican, Philippines and Spanish (Rodenburg 2010:22).⁷³ Rodenburg reports that Guatemalans were hired not by Van Oord, but by a Guatemalan subcontractor company, "La Joya". Van Oord contracted La Joya for different activities, such as the transportation of building materials, dredging and other services.⁷⁴ La Joya hired about 125 Guatemalans.

The Feasibility Report (Royal Haskoning and Van Oord 2005) and the Grant Proposal (FMO 2006) did not estimate the number of direct and indirect jobs that the new port would produce in the future, but only mentioned that it would benefit the entire local fishery sector and also tourist and commercial activities. An internal document of EPNAC estimated that the new port would guarantee the job of its 33 employees and 453 artisanal fishermen.⁷⁵ There is no reference to indirect employment generation.

According to an official source, the new port was supposed to result in some 4,000 direct and indirect jobs.⁷⁶ Though there are no hard employment figures, it is very likely that in the end the net employment effect has been negative. There are fishermen who are no longer active in the fishery sector. This is due to the problem of sedimentation in the access channel of the port, which has resulted in damage to the vessels and outboard engines. An indication of a reduced number of fishermen active in the sector is that prior to the construction of the port, some 122 small vessels were in operation, while currently only 55 to 70 are in operation (see also Photo 10).⁷⁷

According to a recent newspaper article, currently only 10 to 15 fishing boats per day enter the sea, albeit with the help of local people pushing the fishing boat through the shallow channel to the sea (as illustrated by Photo 7).⁷⁸ The same source refers to a number of 2,500 persons who are dependent on the port, so with reduced activities in the port it is likely that the employment opportunities of a substantial number of persons are negatively affected.

Other indirect employment losses can be mentioned, such as the case of 90 families who worked in the production of salt. On the Pacific Coast of Guatemala, salt is obtained by drying seawater entering the estuary. Due to the excessive sedimentation, seawater does not enter the estuary anymore.

⁷³ Anne Rodenburg. 2010. "Comunicación Intercultural en Proyectos de Asistencia al Desarrollo. Estudio de un proyecto holandés en Champerico, Guatemala". Master Thesis in Comunicación de la Ciencia y la Cultura, Jalisco, México.

⁷⁴ The main material was volcanic rock. About 320,000 metric tons of rocks were used for the construction.

⁷⁵ EPNAC. *Informe Ejecutivo Puerto Champerico*, 2009, p.2.

⁷⁶ www.civ.gob.gt/c/document_library.

⁷⁷ Royal Haskoning and Van Oord (2005:7) reports that 86 vessels operated from Champerico prior to the construction of the fishery port.

⁷⁸ http://www.prensalibre.com/retalhuleu/Retalhuleu-darsena-inoperante-Champerico-pescadores_0_1183081847.html



Photo 10: Stranded in a shed



Photo 11: A boat in the port after having been pushed by local people

4.2.3 Effects on the Poor and Women

A related question is: have the expected results of the project been achieved with regard to the avoidance of harm to the poor and women in the recipient country?

The main problem has been the impact of the malfunctioning of the port. The lack of a well-functioning port has damaged fishing activity and has decreased the capacity of the local economy to generate employment from fishery-related activities. Most of the interviewed stakeholders perceived increases in outmigration, youth delinquency and unemployment. From these perceptions it can be at least concluded that poverty reduction seems to have stalled. A newspaper article reports that 50 families did not know anymore where to find resources for their daily subsistence and the entire community was worried because it depended on local fishery activities.⁷⁹ In the words of former Ambassador Kamper: "It is a tragedy that the situation of the local population was worse after the project than prior to it."

⁷⁹ <http://eltoque.com/texto/guatemala-proyecto-holandes-portuario-un-caso-de-corrupcion>.

Box 3: Perceptions of Negative Impact

"It is no good; the port is not functional... About 30 million Quetzals were thrown in the garbage". Rafael Espada, Vice-President of Guatemala during the Colom Administration (2008-2012) quoted by a journalistic source.⁸⁰

"The project was a total failure as no goal was reached. The population is affected not only because their dream of a new, well-functioning port did not come true, but also because the fishing activity has been severely damaged: there are difficulties to get the boats out of the port, which has led to an increased need for physical effort of local people [generally poor women that help fishermen to push the boat outside the shallow channel, see Photo 7]. Furthermore, at the point at which the boats enter the sea there is the risk that strong waves overturn the boat, threatening engine and boat, and the fishermen themselves".

A former high staff member of EPNAC.

"The project's failure left the situation worse than before. Now we have more poverty and social problems, more people emigrating abroad, increased delinquency. As an organization, as a community, we are in trouble. If we were to ask government officials for help, they will answer that we already had an opportunity. For us doors will be closed for a long time. ... Security in our way to the sea has worsened. What we do is to count 7 waves to go and having a faster motor (40 to 75 HP) to avoid the risk. Smaller engines (15 to 25 HP) can no longer be used for the speed you need to achieve to pass between the waves. The risks of an impact are: tipping the boat, damaged engine or someone getting hurt. This is why some 30 boats are out of service now".

A leader of the Fishermen Association of Champerico.

"Three times a group of fishermen occupied by force the municipal building in protest for the loss of boats and other accidents occurred due to the sedimentation of the harbour. Also the company in charge of delivering building materials destroyed the road that connected the port. This company never assumed the cost of destruction that in turn the municipal government had to rebuild with its own resources".

High municipal authority of Champerico.

"I am one of a group of Champerico's small boat owners who agreed with other fishermen to buy a medium size boat. We tried to take advantage of the new port but soon the sedimentation of the harbour also buried our dreams. What we have now is a huge debt. Additionally we had to take our boat to Puerto Quetzal where costs were higher, so we accumulated a second debt, which avoids us to take the boat out".

Fisherman participating in a focus group.

4.2.4 Attributable Impact?

Below, the following research question is addressed: has any impact been realized that can be attributed to the intervention?

To formally establish what the impact has been and whether any realized impact can be attributed to the intervention, one would need to construct or reconstruct a counterfactual situation of no port having been constructed. This would require the formation of a beneficiary and a control group before the intervention. A before-and-after comparison of the beneficiary group is also complicated due to the lack of comparable baseline information. Whereas formal attribution is not feasible, there is little doubt that several effects are clearly related to the intervention.

As argued before, the project is a failure in terms of achieving its different objectives. There is even evidence that shows negative effects on public finance, employment and security of fishermen. There is also the political cost paid by the Government of Guatemala and the dent into the prestige of the Netherlands' as a serious development partner and origin of great maritime civil engineers. But the worst effect seems to be the damage done to public confidence in government authorities. Frustration is easily detected among the working people of Champerico; they feel betrayed by the national and local political leadership and have few hopes on improvement in the short run.

⁸⁰ Inter Press Service. "Costly Botched Port Ruins Beach Town Economy", October 26, 2011. <http://www.ipsnews.net/2011/10/guatemala-costly-botched-port-ruins-beach-town-economy/>

There is also the environmental cost of this intervention. The EIA observed as the project's largest negative impact *the loss of part of the lagoon area with the mangroves... About 70 families get part of their food and income from this area, and reforestation is necessary*" (Royal Haskoning 2006:37). It is not clear whether there have been any compensation measures for these families. It was expected that the positive development effects of the project would offset the negative environmental and social effects but now the people of Champerico just observe the high costs paid in exchange for a frustrated dream.

4.3. Sustainability

4.3.1 Institutional Sustainability

Two questions related to institutional sustainability are:

- Did the ORET-project have a well-identified partner who is responsible for the operation and maintenance and accountable for the full use of the delivered capital goods and works?
- Does the end-user have sufficient capacity (staff, internal organisation and management skills) to continue the transaction independently and guarantee full use after completion?

The Guatemalan counterpart of the project was the port authority in Champerico – EPNAC – the same partner as in the phase of the feasibility study. At the start of the project, EPNAC employed 23 persons and had a relatively weak internal organization.⁸¹

As part of the project, EPNAC received technical assistance from Royal Haskoning, which included staff training and the elaboration of a set of manuals. As a result, EPNAC was better equipped to manage the port, but since the project did not result in a well-functioning port, it did not need to (fully) use the improved management capacity for the operation and maintenance of the port. As written before, almost all the technical staff was fired and only one of the trained persons (the current General Manager) remains at his post.

4.3.2 Technical Sustainability

The following questions address the issue of technical sustainability:

- Was the transaction sustainable in terms of maintenance, after-sales services and the availability of spare parts?
- Are the delivered works still operational and maintained after completion of the project?

In the Feasibility Study, Royal Haskoning and Van Oord (2005:64) explained that sediment would accumulate on the east side of the breakwater and that dredging would be required only after 10 to 15 years after the start of the breakwater construction when sand would start to go around the head of the breakwater. The Environmental Impact Analysis carried out in 2006 mentions a period of approximately 10 years (Royal Haskoning 2006:31). In reality, dredging was already required some months after the start of the breakwater construction. As expressed in a letter of Royal Haskoning to ORET.nl of 14 July 2009: "The real sedimentation that has and is taking place has far exceeded the foreseen and expected sedimentation. ... This process was observed mid-2008, and a first mitigation measure was carried out, being the construction of a groyne ... While the measure has worked and sedimentation has been slowed, it is not yet sufficient to secure a sustainable project."⁸²

Similarly, page 2 of Royal Haskoning's Progress Report 01/07/09 – 31/12/09 states that: "... already during the final phase of the construction it turned out that the process of sedimentation of the port took place at a faster pace than expected. For this reason it was decided not to dredge the port up to the depth as designed but to find out first what the causes of the sedimentation are and which measures must be taken to keep the port open for ships in the future."

The excessive sedimentation was caused by the fact that a detailed design of the port was never made and that there was an error in the conceptual design of the port, which was used as if it were the detailed design. The conceptual design was incorrectly based on a long-term average of the net wave-driven sand transport. In a review of the design in 2008, Alkyon Hydraulics Consultancy & Research concluded that "it has not been correct to use the net value of the littoral

⁸¹ FMO (2006). ORET Grant Proposal.

⁸² Letter of J.W. Jongbloed to A. Koonstra with subject: "Champerico Fishery Port GT 00017/GT 000 18 Sedimentation Analysis of Port Access Channel."

drift (0.2 million m³/yr) as the main morphological design parameter. The process of the littoral drift is more complicated than just subtracting the two large transport rates in opposite directions.⁸³ In addition, the long-term average hides year-to-year fluctuations and possible outliers. A quote (regarding Puerto Quetzal) from the Feasibility Study illustrates that this may have been the case and should have been known: "It should be noted however that 170,000m³ per annum is the average net sediment transport and that variations in weather conditions may cause substantial variations to be measured from one year to the next" (Royal Haskoning and Van Oord 2005:38). Given this observation, it is surprising that, for Champerico, the Feasibility Study at the same time indicated that "due to relative small variations in yearly weather conditions, such as wave directions, the number of storms etc., it is estimated that a safe assessment of the actual sediment transport per year may vary between 100,000 m³ and 200,000 m³" (ibid.:40). On the same page, it continued with the statement that: "This sediment transport is not so high as to make the project unfeasible, although maintenance dredging will be required at intervals in the future. Maintenance dredging can be avoided by the construction of a groyne that again will stop all sediment transport" [emphasis added].

Royal Haskoning claims that it has always pointed out that sedimentation was going to be an issue to be addressed and that there was a margin of error in the calculation of sediment transport.⁸⁴ It is hard to understand why calculations were based on net sediment transport (instead of gross transport in opposite directions), why a worst case scenario of an above-average sediment transport was not taken into consideration and why the construction by Van Oord supervised by Royal Haskoning started in the absence of a detailed design based on a detailed modelling study. Apparently no one felt responsible for making such a detailed design or checking this important condition.

In practice, maintenance dredging would be required early on and much more frequently than foreseen to time to mitigate the problem of excessive sedimentation.

In August 2009, former President Colom and his wife inaugurated the port. The Dutch Ambassador Kamper was also present at the opening ceremony. The access channel to the port had been dredged allowing ships to enter and exit the port at that moment.⁸⁵ But the inauguration was a political event. Construction works would be needed in a next phase to extend the sand-retaining groyne. For that reason, the President called it the "first phase of the construction." For Van Oord, the event coincided more or less with the start of the Guarantee Period. One interviewee claimed that "the port was functioning when it was completed." However, there "was no maintenance period agreed in the contract; just a defect liability on what was constructed."⁸⁶

Van Oord and Royal Haskoning continued with the preparation of additional works (the "Second phase of the construction"), which were not a part of the ORET-transaction and which consisted of, among others, the elaboration of a sand transportation study. According to Van Oord's *Final Progress Report (15/09/2010)* p. 6: "The second phase construction started on 5th February 2010 and included an extension of the breakwater groyne and additional strengthening along the Northern-Western approaches. It is expected that dredging will be completed by September 2010."

Figure 5 illustrates the design of the port and of realized and potential further extensions of the groyne at the first bend of the main breakwater. When it became clear that the port was not (going to be) functioning properly, several attempts were made to repair the damage. But these attempts did not offer a structural solution for the problem of sedimentation. In this context, a reference can be made to a remark made in one of the interviews: "We have looked for solutions. First of all we tried to find out whether technical solutions were possible. Van Oord never had the attitude that it would leave behind a non-functioning port without trying its utmost to find a solution."⁸⁷

In reality, no structural solution was found for the problem of excessive sedimentation. EPNAC appears to have commissioned some dredging activities since 2010 and most recently in July 2014.

⁸³ Review of the request for the project application of an extension of the sand-retaining groyne, November 2008, p. 3.

⁸⁴ Communication received from Royal Haskoning.

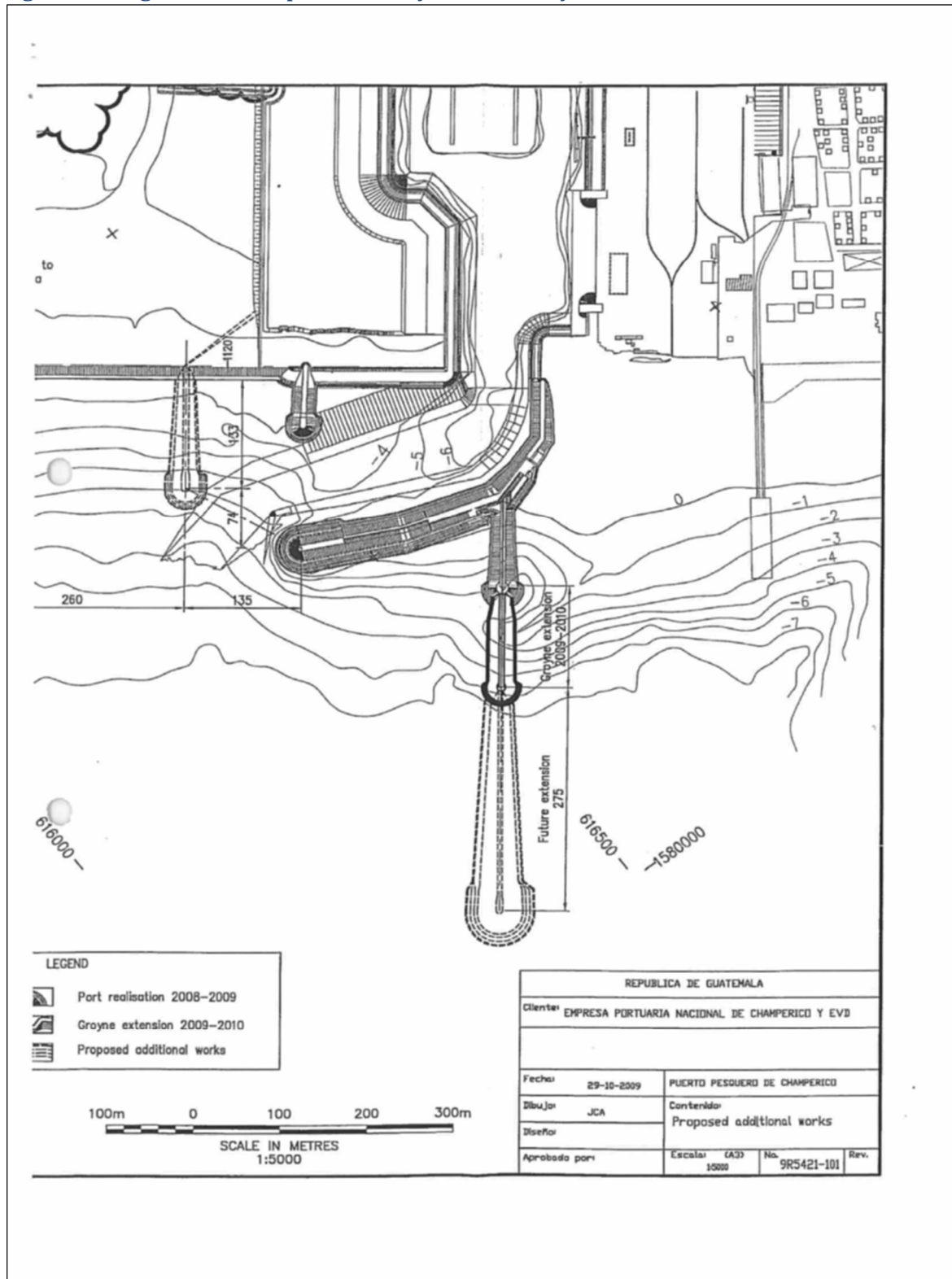
⁸⁵ Even a marine ship entered when the President was in Champerico.

⁸⁶ Interview with Erwin van den Bergh of Van Oord.

⁸⁷ Interview with Erwin van den Bergh of Van Oord.

These dredging activities have been criticised because they are costly and do not offer a structural solution.⁸⁸ Nowadays only 10 to 15 vessels per day go out for fishing.

Figure 5: Design of the Champerico Fishery Port and Groyne Extensions



Source: Letter from Van Oord and Royal Haskoning to Minister Koenders concerning the fishery port in Champerico, Guatemala of 27 November 2009.

⁸⁸http://www.prensalibre.com/noticias/comunitario/critican-inversion-empresa-portuaria-champerico_0_1198680132.html.

4.3.3 Financial Sustainability

The following question is addressed regarding financial sustainability: Did the project generate sufficient own income or have other safeguards for supplemental (government subsidies or user fees) funding to finance debt servicing and operational and maintenance costs of the transaction?

The Feasibility study of 2005 and the Grant Proposal of 2006 showed figures that the project would be financially feasible with the ORET grant only if the government would keep subsidizing the operation of the port. So, one of the conditions for the grant was that the Ministry of Finance would transfer the required subsidy annually in the years following the construction of the port. That is, the port's revenues would be insufficient to ensure future financing of operation and maintenance costs.

The own income generated by the project fell short of what was foreseen, because the semi-industrial vessels could not make use of the port because of the excessive sedimentation of the access channel and were thus no source of income for the port fees. For arriving at a sustainable solution, Royal Haskoning and Van Oord estimated in their letter to Minister Koenders that an additional investment of some € 12 million would be needed.⁸⁹ They inquired about the possibility of additional financing from the Ministry of Foreign Affairs but Minister Koenders refused to provide such financing because ORET was closed. He only referred to the possibility of submitting a proposal for a grant from the ORIO Facility, the successor of the ORET programme. In a debate in Dutch Parliament about the failure of the project that took place in 2011, Secretary of State Knapen stated that the project had been implemented as agreed and repeated that a proposal could be submitted for an ORIO grant.⁹⁰

Currently, the annual budget of EPNAC is 3.2 million Quetzal, which is used for salaries and maintenance. At this moment, EPNAC is only generating revenues by renting some of its properties (about 1 million Quetzales annually). As ordered by the President of Guatemala, EPNAC had to suspend the charge for using the port as a measure to reduce the increased fishermen's cost and thus alleviate disappointment and protest. Dredging the harbour's access channel is a recurrent expenditure, which costed about 1 million Quetzales in 2013. To keep the channel open, EPNAC frequently needs to find inputs and money from sources other than its own budget. Some local businesses have donated fuel and equipment, such as a suction pump. While it was always foreseen that EPNAC would be faced with maintenance costs, it was expected that at least part of these costs could be covered by income generated from operation of the port as intended.

4.4. Policy Relevance

Two questions concerning policy relevance which are addressed below are:

- Was the project listed as a priority project in Guatemala's sector development strategies or local development plans?
- To what extent did the ORET project complement Guatemala's development policies

The project was one of the Mega Proyectos of President Berger. The selected Mega Proyectos were described in the Economic and Social Recovery Plan 2004-2005 (*Plan Vamos Guatemala*). The Plan anticipated the reactivation of the formal economy with infrastructure projects, including the implementation of the fishery port project in Champerico. It was expected that the port of Champerico and its facilities would boost employment and improve the volume and quality of the fishery sector's production, and also generate high-end tourism (e.g. sport fishing, hotels) and real-state development, and in that way benefit the construction sector and trade.

In economic and social terms, the Government of Guatemala presented good arguments to demonstrate the relevance of building the Port of Champerico. The project aimed to solve the problems of a poor community (artisanal fishermen) and to link the Pacific Region to the larger project *Canal Seco* (the Dry Channel) aimed at developing the inter-oceanic connections to take advantage of global trade.

⁸⁹ Letter from Van Oord and Royal Haskoning to Minister Koenders concerning the fishery port in Champerico, Guatemala of 27 November 2009.

⁹⁰ <http://www.tweedekamer.nl/kamerstukken/detail.jsp?id=2011D46720&did=2011D46720>.

4.5. Policy Coherence

The following question addresses the issue of policy coherence: What was the role of other Dutch export promotion instruments in the transaction, such as the coverage of export credit insurance of the commercial non-grant loans by Atradius and the subsidy facilities of the Ministry of Economic Affairs to co-finance preparatory costs by applicants?

The cost of the Feasibility Study was nearly three hundred thousand Euro, which was co-financed by a 50% contribution of €140,000 from the Dutch Ministry of Economic Affairs through a PESP subsidy.⁹¹ Another part was financed by EPNAC, which had received funds from the peace fund FONAPAZ. The contribution by EPNAC was administered by IOM. Royal Haskoning and Van Oord also contributed to the funding of the study (Royal Haskoning and Van Oord 2005:2).

The non-grant financing of the ORET transaction related to the construction of the port was guaranteed by an Atradius export credit insurance.⁹² The insurance covered a maximum of nearly € 15 million.⁹³

The project in Champerico was a project that the ORET programme could support. It was coherent with the Dutch development policy's focus on private sector development. Its environmental component – reforestation of mangroves in line with the ORET policy guideline that any environmental damage should be mitigated – but was also coherent with the large environmental programme being carried out in Guatemala by a group of donors under the leadership of the Netherlands. The Dutch embassy in Guatemala had not been involved in the decision making process of the project, but was keen on making sure that the environmental aspects of the project were dealt with in a satisfactory manner. For this reason, it was closely involved in the selection of the site where mangrove would be (re)planted. The Dutch embassy was also involved in lobbying for the waiver of the procurement rules and assuring appropriate arrangements for the non-grant funding for the project.

The project appears to have been important for the Netherlands' diplomacy in Guatemala to get better access to the Guatemalan government and thus be able to raise other foreign policy issues such as human rights, though opinions on this vary.

4.6. Additionality and Catalytic Effect

The ORET grants appear to have been additional in the sense that the project would not have been implemented without the financial contribution from ORET. Initially, there had been talks with the ambassador of Taiwan about possible financing of the project by Taiwan, but that financing never materialized. The BCIE (Central American Bank of Development) had also "tentatively expressed its interest in evaluating the possibility of contributing with a loan for this project" (Royal Haskoning and Van Oord 2006:41).

In ORET.nl (2011: Annex C – Formulier Eindrapportage ORET) it is concluded that "projects like the one in Champerico are not feasible without a contribution from the government." In one of the interviews conducted for this evaluation, it was indicated that "the discussion about the financing of the project always took place in the light of using the ORET grant. There was no discussion about whether the ORET grant was not needed." This is in line with the observations of another interviewee that "actually the PESP study was carried out as a preparation for an ORET proposal" and "by definition, the ORET grant was necessary, because it was not possible to finance the project commercially."

Whereas it can be concluded that there are no real doubts about the additionality of the ORET grant, there are no indications that the contribution from ORET had a catalytic effect. The availability of the ORET grant financing did not trigger any commercial co-financing. The Government of Guatemala co-financed the project, partly from its own resources and partly through a concessional loan received from the IDB.

⁹¹ See overview provided by RVO of PESP subsidies.

⁹² Atradius sent a letter to Van Oord on 23 June 2005, indicating that (under certain conditions) it could provide export credit insurance to Van Oord.

⁹³ http://www.atradiusdutchstatebusiness.nl/Images/EKVpolissen2008_tcm1008-130101.pdf and "EKV overzicht" provided by Atradius.

5. Conclusions

5.1. Efficiency

Most of the works specified in the Bill of Quantities contract were carried out and realized on schedule and within budget. A general perception among interviewed people is that the construction works are adequate. However, port malfunctioning is attributed to a design flaw that ignored the risk of higher levels of sedimentation, which were a well-known problem in the Pacific Ocean ports of Guatemala, Mexico and other Latin American countries. There are different views as to whether sedimentation in Champerico was due to an underestimation of the level of sand washed onto the shoreline by waves or to sudden natural changes (e.g. volcanic eruptions), but studies and experiences (e.g. Puerto Madero in Mexico) were clear warning signals that excessive sedimentation was a real risk to be considered with special care. The assumptions made by Royal Haskoning on this issue in the conceptual design leave the impression that this was done insufficiently.

If the design had taken into account higher levels of sedimentation and had the port been properly dimensioned with bigger and differently positioned breakwaters and had regular dredging been foreseen, the project may have resulted in a well-functioning port. However, it is likely that the cost of the project would have been much higher and that the application for the project would have been rejected as not economically feasible.

Technical cooperation is crystallized through the training of 8-10 EPNAC technicians in the operation and maintenance of the port and was done correctly but to no avail. The early problems of the port due to sedimentation caused the downsizing of EPNAC, to the extent that only one of the trained technicians is currently working there. On the other hand, the training of artisanal fishermen could be considered a failure in the way it was implemented. Only a small part of the 300 fishermen attended. The explanations of why most fishermen did not receive the training are contradictory. EPNAC argues that fishermen have always given little thought to issues of product quality. However, fishermen argue that Royal Haskoning and EPNAC advanced the date of training and did not take enough care to accommodate the limited time that fishermen had available.

5.2. Effectiveness

Because of its failure, the project had hardly or no positive effects. Some effects were negative. The current port, although definitely not functioning as intended, at least provides a safer solution for going to sea compared to the situation of the old pier. It also provides a "shelter" for the boats and fishing gear making them safe from theft or damage.

In terms of employment, the construction itself was not expected to generate a large number of jobs, which is partly related to the requirement of ORET of a minimum Dutch content. Van Oord hired foreign staff but only a minimum number of Guatemalans (particularly drivers). Most employment was generated by subcontractors to transport building materials, construction of the project works (breakwaters, jetties, piers, etc.) and dredging. In total the number of workers may not have surpassed 300 at the time of peak demand.

When it became clear that the port was not (going to be) functioning properly, several attempts were made to repair the damage. A sand-retaining groyne was built on the first bend of the breakwater, the entrance channel was dredged, and later on the groyne was extended. But that extension was not expected to offer a structural solution for the problem of sedimentation. A much longer groyne would be needed which would be rather costly.

Due to this problem, the number of fishing boats making use of the port reduced while the semi-industrial fishing fleet still lands their product in Puerto Quetzal. An unexpected positive effect is that the extended beach has attracted more tourists. However, the general perception is that development in Champerico has stagnated and this has worsened problems such as migration and juvenile delinquency. Moreover, the Government has not only lost the investment in the failed port, but also its credibility with the citizens of Champerico has been severely eroded.

The port was built on 16 acres formerly occupied by mangroves. The EIA warned that another 30 hectares of mangroves in the surrounding area would also be destroyed or seriously affected by the port construction. The port does not work properly because of the high level of sedimentation, but has also damaged the nearby mangrove, because the sedimentation blocks the entrance of

seawater. Some interviewed persons claim that the same problem was the cause of the closure of the artisanal production of salt, and at the same time prevented the estuary being used by some residents of Champerico for other subsistence activities.

5.3. Sustainability

It is obvious that the project was not technically sustainable. Financial sustainability was also weak from the beginning. The feasibility study and grant proposal estimated that the Port of Champerico would not be financially sustainable because its revenues would be below operation and maintenance costs. For this reason it was expected that the Ministry of Finance approved an annual transfer to balance the budget.

There were significant investments made to strengthen EPNAC institutionally but ultimately for naught. With the inability to function as planned, the Port of Champerico has stopped generating income. It is currently operating at a deficit because of the high recurrent costs of dredging the narrow channel and no income from harbour fees which were waived to avoid even more problems with the highly angry and disappointed artisanal fishing community.

5.4. Relevance

The project would have been relevant if it had functioned properly. All interviewed stakeholders agree on this. The project was thought to improve the well-being of artisanal fishery community and to simultaneously develop conditions to stimulate tourism (sporting fishery) and other service and commercial activities.

5.5. Policy Coherence

On the drawing table the project was coherent with the focus of Dutch development policy on private sector development and protecting the environment. In reality it was poorly designed and implemented.

5.6. Additionality and Catalytic Effect

It can be concluded that the project would not have been feasible without the ORET grant. There are no indications that the contribution from ORET had a catalytic effect, also because no follow-up activities have been developed due to the malfunctioning port.

5.7. Final Remark

Paraphrasing a remark made by one of the interviewees, the project has resulted in "the port that should not have been constructed."⁹⁴

⁹⁴ Former Ambassador Teunis Kamper made the following remark: "On hindsight you can conclude that the construction of the port in Champerico should never have happened. Studies and measurement of the sand transportation problem should have led to the cancellation of the project."

Annexes

Annex A: Conditions set in the Grant Proposal

Box 3. Conditions set in the Grant Proposal subscribed by Van Oord and Royal Haskoning

The Grant Proposal set the following conditions to be met prior to the down payment:

- FMO has received confirmation from IOM that, at least, 80,000,000 Quetzals has been deposited by the Government of Guatemala at IOM.
- PESCA S.A. states that they will move their complete fleet to Champerico.
- Guarantee from Ministry of Finance to cover all losses made during the first 15 years (this includes provisioning for O&M).
- Confirmation from the Ministerio de Comunicaciones, Infraestructura y Vivienda that, at least, the semi-industrial fleet has to leave Quetzal within, at most, 15 years.
- Confirmation by the Comision Portuaria Nacional, that an average white fish price of \$1000/ton for this region is feasible.
- SEGEPLAN signs grant agreement and MoF signs for awareness/agreement of grant agreement.
- Statement of an authorized governmental entity that international competitive bidding is not necessary for this project.
- Financing cost in the commercial contract between Van Oord and IOM approved by FMO.
- Proof that EPNAC has land ownership of the land where the port will be build.
- Capacity development contract approved by FMO including:
 - CV manager and consultants
 - All costs
 - Milestones
- Supervision contract approved by FMO including:
 - CV consultants
 - All costs
- Social and environmental plans approved by FMO including:
 - EIA October 2005
 - EIA Review finalized
 - Health & Safety Management Plan construction phase, according to final EIA Review and permit conditions.
 - Contingency Plan construction phase
 - Mangrove Management (Compensation) Plan

Conditions for Disbursement set in the Grant Proposal are:

- After January 2007 the GoG has deposited the full project amount on the IOM account.
- Licence to operate from *Ministerio de Ambiente y Recursos Naturales* is valid.
- Before the end of construction and start of operations, the following should be received and approved by FMO:
 - The waste management plan
 - The Health & Safety Management Plan operational phase, according to final EIA Review and permit conditions.
 - The Contingency Plan operational phase
- Quarterly reports during capacity development from Haskoning received by FMO.

FMO (2006:1-2). Grant Proposal.

Annex B: Persons Interviewed

Name	Function	Organisation
Jacco de Bruin	Honorary Consul	General Consulate of the Netherlands
Luis Prado	Manager (during Colom Administration)	EPNAC
Oscar Arturo Urruela Pivaral	Current Manager	EPNAC
Delbert Field	Current Mission Chief	IOM
Luis Flores Asturias	Comisionado Presidencial para Megaproyectos, Berger Administration	MegaProyectos
Mario Estuardo Fuentes	Legal assistant of Luis Flores Asturias, Berger Administration	MegaProyectos
Carlos Lainfiesta and two other commissioners	Executive Director	Comisión Portuaria Nacional
Yanet Pezzarossi	Coordinator for Champerico project during Berger Administration	SEGEPLAN
Marco Mérida and Milvia Monroy	Public Prosecutors	Ministerio Público
Abraham Serrano and five other members of the governing body of ASOPECHAMP	President	ASOPECHAMP
Victoriano Obando	Major	Municipality of Champerico
Enrique Bonilla	President	AVEDICHAMP
Sergio Maldonado	Vice-President	AVEDICHAMP
Gustavo Chacón	President of Management Board	EPNAC
Carlos Quiñones	Member of Management Board	EPNAC
Oscar Arturo Urruela Pivaral	Manager	EPNAC
Mario de León	President of Management Board (during Berger administration)	EPNAC
Sergio Escobar	Manager of the project (during Berger and Colom administrations)	EPNAC
Ricardo Montes and Jorge Montes Córdoba	Representatives of the family Montes that donated the property where the new port was built.	
Friso Wiegman	Responsible for Champerico project	ORET.nl
Harman Idema	Former Head of International Cooperation	Embassy of the Kingdom of the Netherlands in Guatemala
Bea ten Tusscher	Former Ambassador	Embassy of the Kingdom of the Netherlands in Guatemala
Teunis Kamper	Former Ambassador	Embassy of the Kingdom of the Netherlands in Guatemala
Marleen Jansen	Former Investment Officer responsible for Champerico project	FMO
Iwan Meister	Former Investment Officer responsible for Champerico project	FMO
Erwin van den Bergh	Former Project Director Champerico Project	Van Oord
Jan-Willem Jongbloed	General Manager	Haskoning International BV Sucursal del Perú

Annex C: Focus Group Discussions

The following two focus group discussions were held:

Community organization	Number of participants	Place and date
<i>Asociación de Pescadores de Champerico (AVEDICHAMP) and Red Manglar</i>	6	Champerico, Thursday 12 June 2014
<i>Asociación de Vecinos para el Desarrollo Integral de Champerico (ASOPECHAMP)</i>	11	Champerico, Friday 13 June 2014

Annex D: Visit to El Manchón-Guamuchal Mangrove

The evaluation team members Dr. Rafael del Cid and Ms. Vivian Guzmán made a visit to the *El Manchón-Guamuchal* mangrove on the morning of Friday 13 June 2014. The guides who took them to this place were José Luis Leiva of *Red Manglar* and Osmundo Trinidad Ramírez (forest guard) of the *Comisión Nacional de Áreas Protegidas*.



Photo 12: El Manchón-Guamachal Mangrove