

# CMI REPORT

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End review of FDC's project to strengthen the Expanded Programme on Immunization (EPI) in the Zambézia province, Mozambique



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## Preface

This end review was commissioned by the Royal Norwegian Embassy in Maputo. Siri Lange (team leader) and Gaspar Sitefane (local consultant) were hired and contracted by the Embassy after a tendering process. Eugénio Salvador Chimbutane (local consultant) was hired and contracted by FDC in line with the Terms of Reference for the end review.

Chimbutane has had main responsibility for the review of the project's financial management systems (chapter four and corresponding annexes). Chimbutane did data collection and interviews at the headquarters of Fundação para o Desenvolvimento da Comunidade (FDC) in Maputo in the period 4 – 26 November, and follow-up data collection in January 2014.

Lange and Sitefane have had main responsibility for the other sections of the report. The main field work took place in the period 3 - 12 November 2013. In addition to interviews in Maputo, Lange and Sitefane visited the provincial capital of Zambézia, Quelimane, as well as three districts; Mocuba, Nicoadala, and Namacurra. Mocuba was selected because a substantial part of the investment of the project was done in this district; a filling station for gas and a new storage building. It was also planned to be the regional distribution center for vaccines to the districts of the northern part of the province. Nicoadala and Namacurra districts were selected because FDC reports show that some of their activities were conducted in these districts and not in others, as well as on the basis of convenience, since they are both located between Quelimane and Mocuba.

We wish thank all our informants for their help and good cooperation during our work with this review.

## List of acronyms and abbreviations

DDSMAS	Direcção Distrital da Saúde, Mulher e Acção Social
DPSD	Direcção Provincial da Saúde
DPSZ	Direcção Provincial da Saúde Zambézia
DDS	Direcção <b>Distritais</b> da Saúde
EPI	Expanded Programme on Immunization
FDC	Fundação para o Desenvolvimento da Comunidade
FUNAE	Fundo de energia
GdM	Governo de Moçambique
IDH	Índice de Desenvolvimento Humano
INE	Instituto Nacional de Estatística
Km	Quilómetros
LPG ou GPL	Gás liquefeito do petróleo
MISAU	Ministério da Saúde
OCB	Organizações Comunitárias de Base
ODM	Objectivos de Desenvolvimento do Milénio
ONG	Organizações Não Governamentais
PAV	Programa Alargado de Vacinação
PFV	Postos Fixos de Vacinação
SIDA	Síndrome de Imunodeficiência adquirida
SMI	Saúde Materno Infantil
TdR	Termos de referência
US	Unidade Sanitária
VCR	Vaccination Coverage Rates

# Executive summary

## Background

As part of their efforts to reach the MDGs, the Ministry of Health in Mozambique has introduced the Expanded Programme on Immunization (EPI). This report is an end review of FDC's three year project to support the implementation of EPI in the Zambézia province. The goal of the project was to improve health and environment of the Project's target community. The purposes of the project were the following:

- to improve the system of distribution and conservation of vaccines in health units
- to promote the use of gas as an alternative to kerosene and firewood
- to improve access to sources of environmentally friendly energy by communities

The main objective of the FDC project – to improve the system of distribution and conservation of vaccines in health Units (US) in the Zambézia province - is highly relevant for improving the general well-being of children and is very well aligned with the government of Mozambique's health policies, guidelines and plans. The other main objective of the project - to promote the use of gas - is not in line with the Ministry of Health's policies.

The Royal Norwegian Embassy in Maputo (RNE) funded the project, which had total budget of NOK 15.5 million (approximately USD 2.7 million). The project was implemented in the period 2010 to 2013. Overlapping with this project period, other donors are funding the province's health sector with more than USD 77 million. This parallel funding needs to be taken into consideration when one attempts to assess the results and impact of the Norwegian funded project and how the investments should be safeguarded in the future. It was not possible within the scope of this end review to isolate the effects of the Norwegian funded project.

## Effectiveness and results to the beneficiaries and targets groups

The FDC project has greatly improved the cold chain in the project period and most probably more children and women than before have received vaccinations because vaccination services were introduced to 17 facilities that did not previously offer this service, and because facilities now have regular supply of vaccines by the help of the four project cars that were donated by the project. FDC's reporting appears to overemphasize the project's activities and results. For example, we found little evidence of community mobilization, and the claim that there are now "no sterilizers using wood" was found not to be true.

## Efficiency

The team perceives the efficiency of the project to be relatively poor. First, the project had much higher administrative costs than budgeted (161%), and more than twenty percent of the total budget was spent on administration. Second, close to one third of the project budget was spent on infrastructure for the privately owned company VidaGás. Third, while the project originally planned to have four decentralised distribution centres for vaccines and gas, all distribution is now being done from Quelimane. The decision to do so has been made by the Provincial headquarter. This solution greatly increases the distribution costs in terms of fuel, per diems, and maintenance of the cars.



## Sustainability

As for sustainability, the energy source that was introduced through the project to secure the cold chain - gas - has proved very expensive and unreliable when organized by the province authorities. Health workers express a strong preference for solar equipment. Since the gas fridges are now being replaced with solar fridges by another donor, there is the danger that the investment in VidaGás has long term benefits for the company first of all, and less for the health sector, particularly because there are no concrete plans for maintaining the vehicles donated by the project.

## Financial management systems and practices and risks

In general, transactions are in compliance with procedures manual provisions in terms of form completeness, procurement method, checks and approvals, and segregation of duties. It is of concern that staff holding control and approval positions focused on cash availability for the project as a whole, as per FDC procedures manual, and failed to be accountable for approved activities and respective budget lines allocation, as per contract clauses. FDC management action has been reactive, following concerns raised by Embassy field visits and annual review meetings rather than addressing issues at first place within their scope of responsibility. Concerns brought to FDC management attention by the Embassy should have been discussed in internal management meetings and reports based on contract provisions and planned budget.

Overall, the total project budget was self-explanatory, providing details on planned quantities to be procured under each budget line, unit prices for all items, total amount and timeframe for each activity. Therefore, the same level of detail was expected from budget execution. Available information on budget execution has been inconsistent in all 3 years project timeframe and details on actual quantities purchased and unit prices are scarce. A thorough analysis of annual financial and programmatic reports suggests that it is likely that actual quantities purchased may have fallen short of those planned.

The accounting software of the organization is very efficient and proper for the volume of information processed in FDC. However, it was not programmed to make a complete log of the project information from a budget management point of view. We noticed that the annual budgets in the progress reports vary from year to year, which is not the correct procedure for budget management.

As for auditing, the management letter of 2010 raised very strong concerns about the internal controls and procurement practices. The 2011 audit report gives a better picture, while the 2012 management letter is more critical regarding the budget management. This is in part a consequence of lack of proper financial analysis in the financial reports sent to the Norwegian Embassy during the whole project implementation period.

## Compliance with contract clauses

Although the budget granted by the Royal Norwegian Embassy of NOK 15.5 million has not changed, NOK currency translations into USD resulted in 16% excess of funds. The project actually spent around USD 2.7 million, against an approved budget of USD 2.3 million. There is no evidence of a proper address of the excess amount in the FDC financial reports. Authorization for use of exchange gains should have been sought from MFA as any budget amendment were to be agreed upon in advance in writing. This is therefore a breach of the contract.

Contrary to the contract, approval from the Royal Norwegian Embassy was not sought for the following:

- (i) Payment for 4 refrigerators for PAV Support in Nampula Province: an explanatory note states that the embassy agreed that project funds could be used for this transaction although no approval from the embassy was attached;
- (ii) Third disbursement of Memorandum of Understanding between FDC and VidaGas regarding procurement of Mocuba Regional Gas Filling Station – this amount were to cater for purchase of a fixed tank and a gas filling weighing scale for which original budget was USD 48,000 (USD 37,500 + USD 10,500). A three times budget deviation should have been discussed with the Embassy prior to expense;
- (iii) Shortlist tender for Mocuba regional vaccine storage works: no records of formal approval granted by Royal Norwegian Embassy were found in either project files or reports, following a decision to use project funds in building Mocuba regional storage destroyed by fire on December 2011.

## Lessons learned

Neither the province authorities nor the FDC have informed the RNE about the other large scale health projects in the province and the coordination between the projects has been very limited. FDC owns one third of the gas company and therefore had great stakes in arguing for gas when the question of solar energy as an alternative to gas was raised by the Embassy and by Norad in the project application phase. Government authorities at different levels appear to be grateful and accept the projects that are offered by NGOs/donors as they are presented, rather than taking a critical stance regarding the best possible use of the offered recourses. In the case of the Zambézia province, there appears to have been limited capacity and/or interest in the DPSZ to take an active coordinating role. One may question whether there are economic incentives to keep projects separated rather than coordinated, as each project generates meetings and training seminars (often with per diems). To donors and NGOs a disincentive to coordination may be the fear of increased bureaucracy and the requirement to identify the results of one's own project. A lesson for the future is thus to ensure that an adequate number of stakeholders and experts are involved. Furthermore, project contracts should state that all project reports need to include a section on how the project is coordinated with other development initiatives within the same field.

## Recommendations

The review team suggests that DPSZ should invite the central stakeholders involved in the province's health sector (UNICEF, WHO, FUNAE, and World Vision and partners) to a meeting to discuss how the project investments best can be safeguarded for the future. FDC and the Embassy should be present at the meeting. The following issues should be solved before the project is closed:

- Ownership of the VidaGás vehicles to be transferred to DPSZ
- Install electricity and equipment in the newly built storage building and offices in Mocuba
- Make a decision on how gas fridges that are being replaced by FUNAE should be utilised
- Establish four delivery zones for vaccines (and for gas if gas equipment is still in use at this point in time)
- Ensure that all facilities get the adequate amount of gas (if gas equipment is still in use at this point in time)

# 1. Introduction

As part of their efforts to reach the MDGs, the Ministry of Health in Mozambique has introduced the Expanded Programme on Immunization (EPI).<sup>1</sup> In March 2008, the Fundação para o Desenvolvimento da Comunidade (FDC)<sup>2</sup> requested the Royal Norwegian Embassy in Maputo (RNE) to fund a three year programme to support the implementation of EPI in the Zambézia province. The application was recommended by the Ministry of Health. After some revisions of the proposal, the RNE agreed to fund the project with NOK 15.5 million (USD 2 678 464).

The project was planned to run from 2009 to 2011, but due to a late start, the project period was expanded to 2012. At the end of the project a three months extension was given for the closure of the project (January to March 2013).

The overall goal of the programme was to "improve health and environment of the project's target community". The following three objectives were specified:

- to improve the system of distribution and conservation of vaccines in health units
- to promote the use of gas as an alternative to kerosene and firewood
- to improve access to sources of environmentally friendly energy by communities and reduce ecologic damages caused by the use of firewood and kerosene

The project was implemented in all the 17 districts of Zambézia province. The primary target group was children from 0-5 years and women in reproductive age.

FDC was established in 1992 and is one of the largest national based NGOs in Mozambique. The organization is headed by Graça Machel. At the time when the project was started, Machel was a member of the GAVI board. Prior to the project under review, the FDC carried out a similar project in the provinces Cabo Del Gado and Nampula. The contract with the Norwegian embassy for the project in Zambézia was signed when the project in Nampula was phased out.

In the same period as FDC has implemented the project under review, other development actors have invested heavily in the province's health sector. World Vision heads a USD 57 million project called Ogumaniha SCIP which runs in the period 2009 to 2014. The project is funded by USAID and the main goal is to improve health and livelihoods of children, women and families in the province.<sup>3</sup>

In early 2012, a multi-UN agency (WHO, UNICEF and UNFPA) embarked on a three year project to address MDG4 & 5 in the Zambézia. The project is funded and coordinated by Cooperacao Canadiana (CIDA) and the total sum granted is USD 20 million.<sup>4</sup> In 2013 the project has focused on immunization only. Up to now, the project has donated computers, five ambulances, and 30-40 motorbikes.

Fundo de energia (FUNAE), a public institution which is financially and administratively autonomous, has received support from Belgium and other donors to install solar fridges in all the health facilities in the province. The project is being implemented in several stages in the period 2008 to 2014.

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<sup>1</sup> Programa Alargado de Vacinação (PAV)

<sup>2</sup> Community Development Foundation. <http://www.fdc.org.mz/>

<sup>3</sup> <http://www.ogumanihascip.org/> World Vision implements this integrated project in partnership with the Johns Hopkins University Center for Communication Programs (JHU/CCP), Vanderbilt University – Friends in Global Health (VU/FGH), Adventist Development and Relief Agency (ADRA), International Relief and Development (IRD), and the Mozambican Red Cross/Cruz Vermelha de Mocambique (CVM).

<sup>4</sup> DPSZ leads the work but with some guidance from UN staff, including two staff members who are now stationed at the DPSZ. The support is targeting mother and child health, malaria, and tuberculosis.

The substantial investments by other actors in the health sector of the province in the project period need to be taken into consideration when one attempts to assess the results and impact of the Norwegian funded project and how the investments should be safeguarded in the future.

## 2. Project Relevance and human resources

### Alignment with government policies and coherence with the local context

UNICEF and WHO are the Ministry's main partners in implementing EPI, but the funds are limited, so the Ministry welcomes other donors who wish to contribute. At the moment, USAID is the bilateral partner that provides the most substantial support to EPI.

The main objective of the FDC project – to improve the system of distribution and conservation of vaccines in health Units (US) - is highly relevant for improving the general well-being of children and is very well aligned with the government of Mozambique's health policies, guidelines and plans.<sup>5</sup> The other main objective of the project - to promote the use of gas as an alternative to kerosene and firewood - is not in line with the Ministry of Health's policies. The governments' policy is to replace all kerosene fridges with solar fridges in areas that do not have electricity.<sup>6</sup> The EPI Manager at MoH has been in the position since the end of 2011. She was therefore not involved when the project was planned. She argues that the MoH decision to endorse the project was probably related to the fact that although gas fridges were not part of the Ministry's plan, they were still better than kerosene fridges, and better than nothing.

The project under review was designed in 2007, before FUNAE started installing solar fridges in Zambézia. However, in the period before the project was actually started, in 2009, FUNAE introduced solar fridges in the province, and others were donated by a Spanish NGO in 2012. In 2012, FUNAE replaced the gas fridges donated by the Norwegian funded FDC project with solar fridges in the districts of Nicuadala and Namacurra.<sup>7</sup> The plan is that all the fridges in the province will be run by solar power by 2014.

In their comments to FDC's application, Norad questioned whether solar energy wouldn't be a better solution than gas. In response to this, FDC argued that the problem with solar equipment is storage of the batteries (requires a lot of space), theft, and lack of maintenance. It was also indicated that they would not charge enough during the rainy season etc.

The team noted that the attitude towards solar fridges was very different at the provincial level compared to the district level. While DPS PAV manager argued that solar fridges are expensive and that the panels often get stolen, the DDS Directors reported that they had never had any problems of theft of solar equipment in their district, and that solar fridges would definitely be the best solution for their district in the future.<sup>8</sup>

The review team visited four facilities with solar equipment. The storage of batteries was in no way problematic and only took up a very small percentage of the total facility space. These facilities had

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<sup>5</sup> The Strategic Plan for the Health Sector, PESS 2013 – 2017, the National Health Policy, and the Newborn and Child Health in Mozambique 2006.

<sup>6</sup> A recent expert panel from the WHO and UNICEF also recommended this for PAV.

<sup>7</sup> Comment from FDC: In Mocuba and Namarroi, some refrigerators supplied by FUNAE were vandalized and the project was asked to put gas refrigerators in these areas. Regarding Nicoadala and Girassol Health Center gas refrigerators were placed on the premises belonging to penitential services. When the new health post was built, this already included solar refrigerators and other equipment. That's why the gas refrigerator was transferred to another Vaccination Post in Milange.

<sup>8</sup> Comment from FDC: The two directors whose districts are located in potentially electrified area (along the National Highway No. 1) where the vandalizing of panels is not very frequent, these prefer solar fridges. We doubt if the remaining 15 directors share the same opinion. Comment from team: Since the districts are large, some of the facilities are located very far from the highway.

never experienced that the solar energy was not sufficient to run their equipment. The health posts we visited at Alto Benfica (Mocuba), Malei (Namacurra), and Girassol (Nicuadala) relies entirely on solar power. The in-charge of the facility at Alto Benfica said that before the solar equipment the facility had relied on a generator and that they often ran out of fuel. When FUNAE brought the equipment in 2009 they had held a community meeting to inform about the importance of taking care of the new equipment. There has not been any case of theft or vandalism over these four years and the community highly appreciates the fact that the energy source is stable. At Malei and Girassol the solar equipment has been in place for less than 6 months, but so far the experience is the same as at Alto Benfica – no cases of vandalism or theft.

The project's second objective, "to improve access to environmentally friendly energy by the communities" is relevant, but the proposed solution – to make the population use gas for domestic use like cooking - is completely unrealistic. First, the local population cannot afford gas cookers and gas, second, there are no retailers in rural areas, and last but not least, there are strong cultural preferences for cooking on charcoal, also among people who could potentially afford to use gas. The proposed actions, "strengthening the institutional capacity of VidaGás (VG), including increasing the storage capacity, and filling and distribution of gas to the province of Zambezia" was therefore not relevant to the local context.

### **Relevance of the selected province and relevance for the beneficiaries**

Zambézia stands out as the province in Mozambique that consistently scores very low on social indicators and it was therefore very relevant for a project that aimed to strengthen EPI. According to the DHS 2011 (published in March 2013), the Vaccination Coverage Rates (VCR) of the province was 69.4 percent in that year, but the proportion of children aged 12-23 months with complete EPI vaccination was only 47%. The last outbreak of polio in the country occurred in this province. There is also lack of knowledge about the importance of vaccination in the population, and some care takers think that it is unnecessary to take a healthy child to the clinic.

The province is the largest in the country and has approximately 4.4 million inhabitants who to a large degree live very scattered. This population is covered by only 210 vaccination posts (more than 19 000 inhabitants per post). Due to the long distance between health posts with vaccination services in the province, some women have to walk up to 20 kilometres to have their babies and themselves vaccinated. According to our informants, the establishment of vaccination services at facilities that did previously not offer this has contributed to increasing the vaccination coverage rate and has therefore saved lives. However, this could have been accomplished using solar energy rather than gas.

### **Human resources and level of partners' professionalism**

The FDC Programme Manager throughout the project period was Adelino Xerinda, who has a MA in Public Health and is a board member of the technical Immunization Group, now EPI. He had experience from running the same kind of project in Nampula when he got responsibility for the project in the Zambézia. The Programme Director who has a Msc in Rural Development, has main responsibility for the overall programmatic coordination role and the Finance Director, who holds a MBA looks after financial issues.

The project had a slow start, and FDC and RNE therefore agreed that the project would run from 2010 rather than from 2009 as initially planned. One of the reasons for the slow start and progress, according to FDC, was changes in the top management within the province. During the implementation of the project the DPSZ Director was changed three times due to studies and illness, and the province also got a new Governor. Another major reason for delay was the lengthy contracting process with VidaGás (a requirement from Norad and the Embassy), as well as the tendering for fridges, which took three months.

The MoH EPI manager sees FDC as a partner which always involves the Ministry before starting a project locally, and which is also very flexible. This is in contrast to some other organizations that go ahead without proper involvement of the Ministry. MoH has been involved in the project by taking part in the training organized by VidaGás, and by making field visits to three of the districts. In the EPI managers' view, the province was in some cases very late in responding to issues brought up by the FDC. The World Vision reports the same challenges - the DPSZ has on several occasions postponed agreed training activities on a very late notice.

The DPSZ has not informed the various donors about each other's activities. The review team sees this as a major weakness. RNE did not know about the World Vision/USAID Ogumaniha SCIP project, and vice versa. The top management of World Vision's office in Quelimane had not heard about the FDC project. FDC on the other hand, was well aware of the World Vision project. The monitoring report of FDC does mention Ugumanhia as a key stakeholder for community mobilization in Mobuca, and the report states that Ugumanhia is the partner that helps the DDS with transport and fuel for carrying out the field vaccination campaigns. As for UNICEF, one of the interviewed staff – who was responsible for community communication – had not heard about the FDC project, while the other representative had heard about it but did not know that it was funded by Norway. The WHO representatives whom we met had not heard about the FDC project.

The DPSZ Medical Chef started in his current position in March 2013 and does not have detailed knowledge about the project. The present EPI Manager (Chefe do PAV) in DPSZ has been in the position since 2011. He says that the project was unique compared to many other donor funded projects since all the decisions about the project was made by DPSZ. He also states that after the project was implemented, they don't have stock problems with regard to vaccines. In his view, the cold chain is working well. He reported that through the project, the EPI management learned to make risk analysis, to easier identify a potential problems before they happen. When asked for examples, however, the PAV manager was unable to offer that.

The knowledge about the project within the DPSZ is unsatisfactory. Neither the DPSZ Medical Chief nor the PAV Manager knew that the FDC project was supposed to bring light in some maternity units as well as sterilization stoves. They were both convinced that the project was about immunization only, also after probing..

The DPSZ sees communication with the district administrations as a challenge, although phone calls, e-mail and supervision visits are made. At the moment there are two EPI meetings per year, while the medical chief would like to have four. For these meetings, representatives of three districts where the coverage is particularly poor are invited. In the medical chef's view, the main reason for poor coverage is long distances. Lack of fuel for the motor bikes that are used for outreach is also a central factor. At the province level, there are monthly meetings.

To the FDC, one of the challenges with the project was that the government has a very high staff turnover. The team acknowledges that this may be one reason why very few of the health workers whom we talked to had been trained/involved in the FDC project. In FDC's view, it is also a challenge that the high ranking staff of the health departments of the various government levels are medical doctors who have usually not been trained in planning. Good planning skills are needed to identify resources within the system and how to allocate them in the best possible way.

### 3. Key activities and results

This chapter will describe the key activities of the project. For each of them, we have on the basis of the available data analysed the challenges encountered, the results and outcome, as well as the effectiveness and efficiency. The findings at an overall level are summarised at the end of the chapter.

Six key activities were planned from the beginning of the project, each of them with separate budget posts:

- Training of health personnel in the management of cold chain
- Replacement of cold chain, including monthly distribution of vaccines and medicines to all PFV
- Installation of lamps and stoves for sterilization in maternity wards
- Institutional capacity building of VidaGás
- Social mobilization for health

According to FDC's reports, all the project activities were carried out in full. For each of these activities, we will refer to FDC's own assessment of results before we present findings from our field visit. FDC's application and the contract for the project list a number of indicators that were meant to show the results and impacts of the project:

- Vaccination coverage rates for selected vaccines higher than 80%
- Vaccine drop-out rates for selected vaccines lower than 15%
- Vaccine wastage reduced to half
- 100% of gas refrigerators working correctly
- 100% of PAV workers performing routine stock control of vaccines and using refrigerators correctly
- Percentage of vaccination and gas stock out in the vaccination posts (this indicator does not state a target)

These indicators are by and large meaningless because the data are not good enough to actually compare the situation before and after the project implication. As part of the project, a consultant was hired to make a baseline report, but the quality of this report is very poor. Other development actors in the province, including World Vision, UNICEF and WHO, say that official statistics are unreliable since the exact number of the population is not known, people move, and also because children are often brought to well- functioning health facilities in neighbouring districts. Since no alternative statistics are available however, all these organizations rely on IDS 2011 (2013) which was recently released. In our presentation of each of the activities we will therefore only refer to the indicators in the cases where this is relevant..

#### **Capacity building of health personnel for the management of the cold chain**

When the project started, PAV Zambézia had only one staff at the provincial level. DPS was asked by FDC to identify four people to work with the project. The province was then divided into four zones, with one staff member responsible for each. Two of these staff members were sent to the Nampula province to see how the work was done there, and they were then taught to do capacity building at the district level.

VidaGás organized a one week long training in Nampula for staff from the DPSZ; the PAV coordinator, four field coordinators, and four drivers. The training covered the following themes: handling of vaccines, storage of gas, replacing gas cylinders, controlling if the cylinder is about to run out of gas, installation of fridges in health units, fridge maintenance/repair, and how to extinguish fire. The team met with one of the field coordinators who reported to be satisfied with the training. She said



that one of the trained coordinators had quit the position, but that he had taught the person replacing him. VidaGás emphasizes that the company is offering free training/refreshing courses, but that participants/employers will have to cover accommodation and meals.

All the district medical chiefs and the district PAV chiefs received a first training on how to implement activities, how to do the logistics, the vaccine distribution and the responsibilities of each of them in the process. The project also offered technical support and training to 82 health staff working on vaccination in two main areas: 1) to fill the book records and make PAV reports, 2) to carry out logistics to manage the gas and the vaccines, including requesting for replacement before these run out.

According to the FDC, all the personnel connected to the PAV benefited from training on new techniques of management of the cold chain, but the reports do not state for how long or where the training took place. FDC also report that 100% of the health facilities that received fridges and gas lamps have received a visit. A health technician at Namanjavira Health Post in Mocuba reported that he was trained for at the facility when the gas fridge was brought in June or July 2012, but that there hasn't been any follow-up since then.

FDC's financial reports show that only 36% of the original budget for this activity was used (USD 84 527 for the whole project period instead of USD 235 080). A total of 91 persons have reportedly been trained (nine people for one week at VidaGás in Nampula, and 82 health staff working on immunization). This gives a sum of USD 929 per person, which in the team's view is relatively high. In 2010 USD 6 180 was spent on reproduction of teaching aids, while USD 4 307 was spent on accommodation for participants. In 2012 and 2013, USD 28 126 was spent on quarterly meetings and the PAV provincial annual meeting.

According to the project proposal, one of VidaGás' main roles in the project would be to create capacity in the province for stocking and distribution of vaccines. In the team's view, this goal was accomplished relatively well. VidaGás, as a private company, has had a strong interest in the successful implementation of the project since this would secure them costumers in the future, and also potentially open up for similar projects in other provinces. Since gas is not the Ministry's preferred solution for the cold chain however, this model should not be replicated elsewhere. The idea that private suppliers offer training on maintenance of the equipment, however, is very good and could be replicated for solar equipment.

### **Replacement of the cold chain, including monthly distribution of vaccines and medicines to all PFV**

When the project started, PAV was only a desk within DPSZ. A warehouse was renovated in 2010 by the help of the project funds and now houses PAV. The new offices were equipped with new IT tools, but the reports do not state the type and number. The cost of this rehabilitation and upgrading was USD 97 868.

In December 2011 the provincial deposit for vaccines (posto regional de vacinas) in Mocuba caught fire. It was decided that project funds should be used to construct a new store. The new building was completed in June 2013. It is a large building with four rooms (office, seminar room and two stores), and the warehouse is large enough to store vaccines and gas for the entire province. However, the store is not in use since electricity has not yet been installed. The FDC report states that the new deposit was

constructed in collaboration with DPSZ and other partners, but it does not state who the other partners are.<sup>9</sup>

A central project activity was to replace all kerosene fridges in the province with gas fridges. The various project reports and interviewed stakeholders cite different numbers of fridges. The September 2010 report states that 108 fridges that can work on both gas and electricity were purchased. 100 of them were for health facilities, and 4 were for the four zones headquarters. This makes up 104 fridges. The report does not state what the four last fridges were for. The final report, in contrast, says that 120 fridges were brought. According to the DPSZ PAV manager, 100 regular size fridges were bought as well as some larger ones. There are now 95 vaccination posts with gas fridges.

As mentioned above, four distribution teams were established and trained. One field coordinator and one driver together make up a team that go for the monthly distribution of gas and vaccines. Each team was originally meant to cover one zone each, from four centers: Alto Molocué, Mocuba, Morrumbala and Quelimane. VidaGás was supposed to deliver the gas to these centers, and then the team would distribute the gas and vaccines from there by the help of the four project cars. It was later agreed that this model should be abandoned, and all the teams are now based in Quelimane and distribute the gas and vaccinations from there. The interviewed field coordinator confirms that her team checks the fridges when they deliver gas and vaccines.

According to the FDC reports, the province now has a functional system of monthly distribution of gas, vaccines, and other medicines. During our field visit we learned that this does not function perfectly in 2013. For example, the distribution was not done in October 2013 (we will come back to this in the chapter on sustainability). In Mocuba, there are 13 health posts that offer vaccination services. Of these, two use electricity, and one solar power. The remaining ten posts have gas fridges. Of these, six, that is more than half, regularly run out of gas. The facilities then have to bring the vaccines to nearby facilities that have gas or solar fridges. This takes time and resources. At the time of the team's visit to Mocuba DDS, three facilities had called and informed the DDS that they had run out of gas. The main reason is that the estimation is not realistic. Each facility is provided with 3 cylinders of gas (5 kg each) each month. According the VidaGás, each fridge should have 4 cylinders per month. DDS has discussed whether the lack of gas could be due to misuse, but has concluded that this is very, very unlikely because people in these areas do not have gas cookers, so there's not market for gas. According to EPI Director in DPSZ the Mocuba DDS is an exception and the health facilities in the other districts get four cylinders of gas each. We have not been able to verify this.

According to FDC's reports, 50% of the planned mobile brigades have been conducted, but the reports do not state how they did it or where. Several of the health technicians whom we met referred to outreach, but since mobile brigades is one of the main components of the World Vision and ADRA projects as well, it was hard for the team to know whether these were funded by FDC or by other donors. During our field visit we learned that at the Namanjavira Health Post in Mocuba district the responsible staff had not been able to do outreach since July because the DDS has confiscated the motorbike since the health worker did not have a license to drive it. This had apparently been done in the whole district. DDS Mocuba's plan is help the health technicians take driving licenses for motor bikes and then return the motorbikes to them.

According to the Medical Chef of the Health Department at DPSZ, the vaccination coverage in the province has increased from 54% to 74%. The FDC project may have played a role in increasing the

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<sup>9</sup> Comment from FDC: With the project funded by the GAVI designated HSS, provided that the acquisition of new cold rooms in Mocuba in 2014. Nevertheless, from the project funds cold rooms type TCW3000 were acquired to reinforce the fridges which were put as emergency after the fire.

coverage in three ways. First, through the establishment of vaccination services at 17 facilities that did not offer this service previously. Second, distances have been reduced in some districts because new health facilities are now providing vaccination services (with support from FDC), and in some facilities mobile services are provided (the last service is also provided by the UN project). It should be mentioned however, that in their Final Report, FDC refers to statistics that show that the coverage rates for the various vaccines have fluctuated a lot in the period 2009 to 2012, and for four out of six, the coverage rate has actually gone down. According to Provincial Health Directorate data, the proportion of children with complete EPI vaccination is now 75% (against 47% in 2011). As mentioned above, the statistics cannot be fully trusted, and the WHO and UNICEF do not rely on the provincial data.

Prior the project, each district had to collect the vaccines in the provincial capital Quelimane. With the project, each vaccination post is visited once a month (with some exceptions as we will come back to). At the Alto Benfica health center, the team was told that the vaccination situation is much better now compared to four years ago. Earlier, vaccinations were brought in an icebox from Mocuba and then the vaccinations were done on that day. Children who happened not to be present would have to wait until the next delivery. At this particular facility a solar fridge was put in place by FUNAE, but the delivery of vaccinations is done by the land cruisers sponsored by the project.

While vaccination coverage is reported to have gone up, it is impossible to isolate the effect of the FDC project from the effects of the other projects targeting immunization in the province. World Vision heads a USD 57 million project which runs in the period 2009 to 2014 (funded by USAID). In this program, volunteer health workers are responsible for all the children under 5 in 15 households each. The volunteers check the children's vaccination status, remind their takers when the next shot is due, and refer malnourished children to special committees.

A total of USD 653 305 was spent on replacement of the cold chain (118% compared to the budget). This sum includes the construction of the new storage building in Mocuba.<sup>10</sup> An additional USD 483 362 was spent on the monthly distribution of vaccines and medicines, a sum that is 174% of the budgeted amount (USD 278 280). This sum also includes the salaries of the employees. According to FDC, the over expenditure on monthly distribution of vaccines was caused by the extension of the distribution period of vaccines, which jumped from 36 months to 40 months, as well as the distribution of new vaccines not planned at the beginning of the project, and the refurbishment of the new vaccine storage in Mocuba. The sum also includes salaries of the employees. In the team's view, the introduction of new vaccines should not entail extra costs since the vaccines are purchased by the MoH at central level and distributed to the provinces. In our view, the failure to establish four zonal centers for distribution is a central factor for the higher costs.

### **Installation of lamps and stoves for sterilization in maternity hospitals**

The reported activities for this sub goal are the following:

- 23 maternities in six districts have benefitted from lamps (Nicoadala, Mopeia, Morrumbala, Lugela, Milange, Mocuba).
- 64 maternities had sterilization stoves installed

According to the reporting of FDC, the installation of lamps increased the number of institutional births from 48 to 107 at these facilities, an increase of 222% percent (reported April 2012, data from DPSZ). The increase is most likely a result of the interventions of all development partners active in maternal health.

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<sup>10</sup> Posted under "Replacement of cold chain" in the following sub lines 2012 (Maintenance of Province's and regional Warehouse) and 2013 (Maintenance of refrigerators in the Health Units).

FDC also reports that there are now “no sterilizers with wood or coal in the Zambezia province”. Our observations counteract this. Four of the facilities that we visited use fire wood for sterilization (Alto Benfica, Namanjavira, Malei and Maciaia). In two of the cases the gas stove sterilizers had been brought by another project but they had not been in use for a long time due to lack of gas (in one case for more than a year). The original gas supplier was PetroGas, and 45 kg cylinders were used. The DPSZ has not contacted VidaGás about gas supply for these sterilizers.

Very central stakeholders did not know that installation of lamps and stoves for sterilization in maternity hospitals was part of the project. This includes the DPSZ Medico Chefe, the DPSZ PAV manager, and the DDS Director in Mocuba. Even when probed, these informants had no idea of this activity, and the DDS Mocuba reports that they have not seen stoves brought by FDC. When asked about the activities of the project, VidaGás did not mention lamps and stoves for maternities, but when probed they confirmed that this had been one of the activities. However, we did find a stove in Maciaia, brought by the FDC team in 2012. This stove had not been installed, and has therefore never been in use. In Malei, we observed a gas lamp brought by FDC that had been in use, but after the cylinder ran out of gas it has never been replaced and it is no longer in use, because the Health Center now has electricity that comes from Solar Panels installed by FUNAE.

According to DPSZ, the sterilization stoves brought by FDC are not in use because they lack resources to pay for the gas. It is reported that even at end of the period when FDC was still in charge, the project was unable to buy gas for the stoves. The DPSZ argues that from next year they will start ordering 522 gas cylinders per month (compared to 300 cylinders per month in 2013) and that this increase is to cover gas for the sterilization stoves. We find it surprising that the DPSZ does not mention that in 2014 the support from UN to the province will focus on maternal health by installing sterilization stoves and light in maternal wards. The apparent lack of ownership and coordination is particularly worrisome as long as the UN agencies argue that the DPSZ is in the driving seat of this project. A total of USD 50 127 was spent on the installation of lamps and sterilization stoves in the project period. Taken the poor results and outcome we regard this as poor value for money.<sup>11</sup>

### Capacity Building of the project to support gas

The second major goal of the project was to improve access to resource of environmentally friendly energy by the communities. The background for including this aspect in the project was due to the fact that the immunization sector is not one of the eligible areas for support for the Norwegian Embassy in Mozambique. According to FDC therefore, it was decided to include an environmental component in the project, and in the project application environment plays a significant role. The Macuba gas station was meant to help the local communities use gas instead of wood or charcoal.

In the project implementation the environmental component has been close to non-existent. According to the FDC an agreement was made with the Embassy (after the contract had been signed), to focus on the first goal – immunization and the cold chain – and to tone down the environmental aspect. According to the contract signed by FDC and the Embassy, any revisions to the work plans have to be agreed upon in advance in writing. No such changes have been done and the Embassy holds the view that FDC should have implemented the project in the way that it was originally designed and approved.

According to our informants, it is impossible to mobilize people to use gas for cooking. One gas cylinder costs approximately USD 33. This is a sum that ordinary people in the Zambézia cannot afford. All informants, including VidaGás, say that domestic use of gas in rural areas is nonexistent. In

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<sup>11</sup> Comment from FDC: At the end of the project 64 lamps were placed. As for sterilizers at the beginning of the project there was a donor who had begun the process of putting sterilizers, and the company VidaGás would be responsible of gas supply.

addition to the issue of costs, people have a strong preference for charcoal and even among middle class people in Quelimane and Maputo it is common to cook using charcoal. FDC argues that it is hard to change the mentality of people and that making people use gas for domestic cooking is a process that will take many years, but that the organization was successful in making such change in attitudes in Nampula and Cabo Delgado.

The contracted development goal for the support to VidaGás (VG) was to strengthen the institutional capacity of the company, including increasing the storage capacity, and filling and distribution of gas to the province of Zambezia.

FDC reports the following result:

- The local companies are beginning to sell gas to the people (September 2010).
- A filling station for gas was built in Mocuba (FDC final report)

The support to VidaGás has been the most problematic aspect of the project, since VidaGás is a privately owned company. The company has three owners: FDC (31%), Village Reach (29%), and from 2009 Bamboo Finance, Oasis Capital Mauritius (40%). The changes in the shareholding structure of the company were never communicated to the Embassy.

According to the Manager of the company, there are no private shareholders, and the company did not have a profit in 2012. The process of getting in place an acceptable contract between FDC and VidaGás was lengthy (completed only in 2011), and contributed to the delay of the project. The main requests from the Norwegian side were the following: the FDC should specify the type of equipment for the project, and they should highlight the type of technical assistance that VidaGás will give to the project. It was also recommended that the contract between VidaGás and FDC should have an open point that allows the partners to revise the ToR and renegotiate it.

As part of the project, VidaGás got a new distribution center in Mocuba. According to VidaGás, the construction of the building and gas deposit cost USD 147 981 (building, fence, filling station, platform, storage), while the filling equipment cost USD 173 862.<sup>12</sup> The official opening ceremony took place in May 2012. In addition to the filling station, VidaGás received a 9.5 tonne truck and a Nissan pick-up through the project. These vehicles were procured by FDC, and all the documents are with the FDC headquarters. It has never been discussed to give DPSZ ownership of these vehicles, despite the fact that this was agreed with the embassy.

According to VidaGás, since the vehicles were given to the company as part of the project, VidaGás provides free transport of the gas from Mocuba to Quelimane. There is no written contract about this and no specific time plan, and information from the DPSZ shows that VidaGás in fact charges for the transport (DPSZ reports that when they use their own cars to transport the gas the price per unit is MZM 375,00 in contrast to MZM 400,00 which is the price when VidaGás delivers it).

According to the VidaGás manager, the sales to DPSZ constitute approximately 10% of the total sale, while other customers (hotels, restaurants, and retailers) make up 90%. It was not possible for the review team to verify this information.

VidaGás provides 1.5 tonnes of gas for DPSZ every month, at a price of USD 4000. This information corresponds well with the information from DPSZ. DPSZ reports that they receive 300 cylinders of gas per month at MZM 400,00 from VidaGás (MZM 120 000, or approximately USD 4000). This gas is for 96 fridges and 64 gas lamps. This means that if there is one cylinder for each of the lamps, there

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<sup>12</sup> The VidaGás Director had the figures in meticaís. The figures above were calculated using the exchange rate USD 1 = 30.

are a little less than 2.5 cylinders per fridge, which is too little, since VidaGás recommends three to four cylinders per fridge each month.

DPS has a special privilege of getting gas on credit, and FDC and VidaGás have a MoU saying that VidaGás shall never cut the distribution of gas to the DPSZ even if payment is delayed. This is seen as VidaGás' social commitment. VidaGás reports that they had to fight with DPSZ in the beginning. DPSZ wanted to expand the time that FDC would still be responsible for procuring the gas. In the first period after FDC had stopped paying the bills therefore, several invoices were pending, totaling approximately USD 14.000. Since then, however, things have worked fine, and for 2013 DPSZ paid in advance for the last part of the year.

According to the original set up, VidaGás was to supply gas to four zonal deposits. As explained above all the gas is currently brought to Quelimane instead, in the first week of each month. In VidaGás' view, the main reason for DPSZ not to decentralize the deposits is that they are afraid of misuse. The present system, with delivery of small cylinders to each health facility is time consuming and costly. It would probably have been more sustainable if the project had financed tanks at the facilities that could be filled every quarter, rather than being dependent upon monthly supplies.

The capacity building of the project to supply gas cost USD 749 630 which is more than a third of the total project costs. Knowing that the Ministry of Health now has decided to prioritise solar energy in areas that do not have electricity, and knowing the difficulties the DPSZ has in paying for the gas, the large investment in VidaGás was not a good choice. The original argument that gas would be an environmentally friendly alternative is compromised by the fact that the gas is brought from Maputo to Nampula, and then from Nampula to Mocuba, and the gas is thus transported very long distances by trucks.

The investment has been a great benefit for VidaGás. Since the company's main costumers are hotels and restaurants, VidaGás will most probably be profitable even if DPSZ should stop buying gas. The benefits to DPSZ on the other hand are questionable. DPSZ now has to buy gas every month to maintain the cold chain that was gained through the project, and they depend upon donors to do so. Had the USD 749 630 been spent on solar equipment instead, there would have been no running costs apart from regular maintenance, and no pollution from transport once the equipment was in place.

The review team notes that the coordination between the different actors involved in the province's health sector has been very limited, which raised questions concerning DPSZ's ownership. Government authorities at different levels appear to be grateful and accept the projects that are offered by NGOs/donors as they are presented, rather than taking a critical stance regarding the best possible use of the offered recourses. In the case of the Zambézia province, there appears to have been limited capacity and/or interest in the DPSZ to take an active coordinating role, and the higher level staff appears to be very loyal to FDC (while lower level staff is more critical to the project). One may question whether there are economic incentives to keep projects separated rather than coordinated, as each project generates meetings and training seminars (often with per diems). To donors and NGOs a disincentive to coordination may be the fear of increased bureaucracy and the requirement to identify the results of one's own project.

A lesson for the future is thus to ensure that an adequate number of stakeholders are involved – including independent experts. Furthermore, project contracts should state that all progress reports need to include a section on how the project is coordinated with other development initiatives within the same field.

## Social mobilization for health

According to FDC's application, the project would do community mobilization both to increase the knowledge about vaccinations, and to make people use gas for cooking. The project was to support the creation and capacity building of community health committees<sup>13</sup> as well as their operation, and the project would work closely with NGOs and CBOs. At the start of the project, a full time social community officer was hired. According to FDC's reports, the following activities have been conducted:

- Public education campaigns, including 124 members of public councils (reported October 2011) (does not state the number of councils)
- 20 consultation meetings with local communities in the following districts: Nicoadala, Mocuba, Gurue, Milange, and the city of Quelimane (reported October 2011)
- Conducted 5 meetings, 2 in each of the following places: Mocuba, Namarroi, Namacurra, Chinde, Pebane and Lugela (The numbers are not clear. Lists six districts – should be 12 if they did 2 in each).
- 84 staff were trained on strategies for community mobilization (Report October 2011)
- Two meetings with the communities were held to hear about the level of satisfaction in regard to health services that the health facilities have (reported April 2012). The report does not state where these meetings were held.
- Produced a manual for community mobilization with good practices and other relevant experiences
- A rapid assessment study was conducted to “understand the knowledge, attitudes and practices towards immunisation of care givers, health workers, activists, APEs, and opinion leaders in underperforming provinces and districts.”
- 100% of the scheduled capacity building meetings were held (Final report).

The reports give very scant information about the actual number of meetings and where they have been held. It is unclear what strategy was used for the constitution of the committees; what kind of training they received, or the contents and methodology. Neither is there any information about the long term continuity of these groups. The reports make no mention of the large scale community mobilization efforts by World Vision, ADRA and WHO in the province. The Good Practice manual is very general and not specific for the Zambézia. The FDC has informed the team that the project used community meetings and meetings with the administrators and governor to undertake the community mobilization. Interestingly, there is no mention of community mobilization the Final Report of the project.<sup>14</sup>

The DDS Director of Mocuba reports that health techniques were trained on how to communicate with the community, including how to explain the impact of the vaccination, and how to convince mothers to take their children for vaccination. She also confirmed that community mobilization sessions were held. However, this activity appears to have been ad hoc. According to the DPSZ Medico Chefe, community mobilization is part of the immunization program and is being done routinely, independently of the FDC project.

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<sup>13</sup> Health committees were established soon after independence and in the period 1975 – 1980 they were generally very active. Then came a period when people abandoned them. There was little coordination or contact between the facility and the community. In the late 1990s there was a revival, and from 2006/07 there was a major change where the government sought to bring the health committees back in.

<sup>14</sup> FDC. Relatório final do projecto de Expansão do Apoio ao Programa Alargado de Vacinação na provincial da Zambézia. September 2013.

The review team met with 8 representatives of four committees in Nicoadala and Mocuba, as well as field staff of World Vision. None of them had any knowledge about FDC apart from the cars bringing gas and vaccines. They are convinced that no mobilization/training of communities/committees has been provided by FDC. In both areas the committees had been in place since the early 2000's, but they had been expanded and trained by the World Vision project (2 times a week over a 3 month period). One of their roles is to encourage care takers to take their children to health facilities rather than to healers, and they check children's vaccination card to see when their next vaccination is due.

According to FDC, the project organized a lot of campaigns directed at the community, using microphones and community radio. These activities are not reported in the final report. DDS Mocuba, Namacurra and Nicoadala staff report having heard advertisements on the radio saying that FDC supports PAV in the province, that they have brought cars etc, but there was no health education as such in these advertisements.

FDC does not report on any collaboration with NGOs/CBOs and we have not found any evidence that this has been done. FDC does not report any activities directed at making people use gas for cooking. The indicators set for this activity were the following:

- Number of sensitization sessions targeted at wood cutters, coal makers and community in general for rational use of forest resources
- Percentage of gas used by health centres, community and industry attributable to the project

As mentioned earlier, FDC did not follow up the planned activities to make community members use gas for cooking.

A total of USD 51 296 was spent on social mobilization for health and this was a little less than budgeted. Overall, it is the impression of the review team that the project has been far less active within the field of social mobilization than what their application indicated, and from what one would expect from having a full time social community officer in place locally during the whole project period. We therefore conclude that this objective was not met. There are several lessons to draw from this. First, in line with the finding of the overall project, there has been a lack of coordination with other actors within the health sector. Second, community mobilization is an activity that is relatively hard to monitor and verify/measure by the funder or by local authorities, compared to for example the delivery of vaccines.

## Monitoring systems

During the project implementation the FDC project director made monthly visits. In FDC's view, they have empowered the DPSZ to change their system, but DPSZ has not taken all the advice on board. For example, the idea of having four zones has not been implemented. The main reason appears to be that DPSZ does not fully trust the district level, and fear that gas and vaccines may be lost if the storage is decentralised.

The FDC and the DPSZ have somewhat different viewpoints about the follow-up after FDC left the province. FDC states that they get monthly reports from DPSZ, while according to the DPSZ, there has been no follow-up from FDC after they left the project to DPSZ.

All the monitoring reports that the team has received were travel reports from trips made by staff from the FDC headquarters to Quelimane, and from Quelimane to some of the districts (mainly Mocuba), and also to Nampula (for the training session). The reports present problems, and indicate some possible solutions, but they do not make any reference to the outcome of the problems encountered, and subsequent reports do not address the topics that had been raised in previous reports.



## Overall assessment of the development actions

### Adequacy of funds

The Terms of Reference asks the review team to assess up to what point the funds used have been adequate to achieve the expected results. The Zambezia province is very large, has a large population, and the population is poor and lives very scattered. Taking this situation into consideration, the planned outcomes were not realistic and particularly not the idea of making households use environmentally friendly energy.

**Table 1: comparison of project budget lines vs actual expenditure**

Contract	Review verification/comments	Budget	Expenditure	Execution %
Goal 1		1 120 218	1 271 321	113 %
Replacement of the cold chain	The main cost driver for this budget line are gas refrigerators. Out of 170 planned gas refrigerators, the project likely purchased 116 <sup>15</sup> (68% output execution) and as other parts falling in this budget line were attached to the number of gas refrigerators, it is likely that quantities purchased fell short of those planned. Additionally, budget execution records only suggest purchase of 600 5.5 kg gas cylinders out 2,600 planned (23% output execution). According to the information we have, all kerosene fridges in the province were replaced by gas fridges as planned and 17 posts that did not previously offer vaccination services now do. Solar fridges would have been a better option, and is the policy of the Ministry of Health.	552 053	653 305	118 %
Capacity building of health personnel for the management of the cold chain	A relatively small number of people were trained.	235 080	84 527	36 %
Monthly distribution of vaccines and medicines to all PFV	The distribution is generally being done, but many facilities report not receiving enough gas, and in some months the distribution is not being done due to delay in releasing funds for fuel and per diems. The distribution is being done from Quelimane rather than for 4 zones, which greatly adds to the costs.	278 280	483 362	174 %

<sup>15</sup> As per statement of assets transfer submitted by FDC to DPSZ, dated May 14th 2013

Contract	Review verification/comments	Budget	Expenditure	Execution %
Installation of stoves and lamps for sterilization in maternity hospitals	Procurement plan for this budget line suggest 59% accomplishment (100 gas sterilization stoves out of 170 planned, 100 gas lamps out of 170 planned and 100 fire extinguishers out of 170 planned) <sup>16</sup> . DPS does not know that this was part of the project. Gas was only delivered for the stoves once, which means that they are now not in use.	54 805	50 127	91 %
<b>Goal 2</b>		<b>691 323</b>	<b>749 630</b>	<b>108 %</b>
Capacity building of the project to support gas	This activity was completed as planned, but the monthly purchase of gas is very costly for the DPSZ. Investment in solar equipment would have been a better choice.	691 323	749 630	108 %
<b>Goal 1 &amp; 2</b>		<b>61 500</b>	<b>51 296</b>	<b>83 %</b>
Community mobilization	None of the interviewed health committees or donors who are active within this field have heard of any community mobilization by FDC.	61 500	51 296	83 %
<b>Monitoring and administration</b>		<b>429 606</b>	<b>589 859</b>	<b>137 %</b>
Monitoring & Evaluation	The documents provided are essentially travel reports where the staff states what they have seen, the problems, and proposed solutions. There is no information on how challenges were resolved.	90 000	101 200	112 %
Administrative costs	Very high over expenditure	294 456	472 961	161 %
Contingencies		45 150	15 698	35 %
<b>TOTAL</b>		<b>2 302 648</b>	<b>2 662 106</b>	<b>116 %</b>

Available funds may have been adequate to meet expected outflows if total expected amount is compared to total actual expenditures. However, budget execution for 2010 suggests initial investments may have resulted in more than expected financial pressures over project implementation. Banking control statement for bank account # 108187020018 (Millennium Bim Bank MZM account) recorded an overdraft from September 9th 2010 to September 30th 2010. Also, the banking control statement for Account # 108187020029 (ABC Bank USD account) recorded an overdraft on

<sup>16</sup> As per statement of assets transfer submitted by FDC to DPSZ, dated May 14th 2013

September 9th, 10th, 22nd and 30th. On a letter dated August 2010, FDC explained to the embassy that apart from a USD 8,474.08 balance, the Zambezia PAV Support project did not have enough financial resources to meet expenditures between October and November 2010.

Internal correspondence suggests NRE was aware of this unexpected financial pressure. In an e-mail written on August 19th 2010 the embassy acknowledges that FDC submitted the request for funding including a bank statement showing need for replenishment. Later that year, the embassy exceptionally approved the second bi-annual disbursement prior to annual meeting.

Compared to the projects sponsored by other donors to strengthen the health sector in the province in same period (USAID USD 57 million and UN USD 20 million), the Norwegian funding of approximately USD 2.7 million is small. Nevertheless, had the efficiency of the FDC project been better, and had the project been coordinated with the other development initiatives in the health sector, the outcome would most probably have been better.

Coordination with other development actors at an early stage of the project, and then particularly with FUNAE, should have entailed that the FDC abandoned the strategy of using gas and instead used the project resources to support FUNAE's efforts to introduce solar fridges. Since FUNAE is now in the process of replacing all the gas fridges with solar ones, we must conclude that the FDC investment in gas to a large degree was a poor investment.

### **Satisfaction of the institutional partners in relation to the results obtained**

The FDC management considers the project a flagship of the FDC and the board of FDC is said to consider this project a model that can be used also in other sectors. The DPSZ representatives that the team met also express a high level of satisfaction with the results. As mentioned above however, the team got the impression that the senior staff of DPSZ were very loyal to FDC and that this colored their responses. VidaGás expressed concern that the DPSZ may not have sufficient ownership of the project. In their experience, there are certain benefits in the early phase of any project, and "some stakeholders lose interest when the benefits are no longer there". At the district level, health administrators and health staff were satisfied with the project in terms of distribution of vaccines and the introduction of vaccination services at new health facilities, but they did not see the introduction of gas fridges as a good idea. The lack of ownership of the project at the provincial level and the high turnover of senior staff entail that the institutional memory in the province of the project most probably will be minimal.

### **Efficiency**

Project efficiency may have been determined by four main factors, as described below.

(i) **Project schedule compliance** – investment activities to create vaccine and gas distribution capacity were carried out with considerable delays, while activities generating operating expenses have been carried out earlier. On the investment side, for instance, the first delivery of gas refrigerators may have taken place by September 2010 and installation may have been completed by June 2011; while Mocuba gas filling station was not completed during the project implementation period. As far as operating costs concerned, project staff has been hired early in 2010, vehicles were purchased in June 2010 and they were attached to 4 additional contracts for drivers. Some of the contracts were renewed twice to cater for project delays. Throughout project implementation, gas was purchased in Maputo and transported to Nampula (passing Quelimane), from where gas cylinders were delivered to Quelimane.

(ii) **Number of vaccine and gas deposits** – initially, four regions had been defined, being Alto Molócuè, Mocuba, Morumbala and Quelimane the centers. The regional approach was later dropped. The main reason was lack of trust and local capacity (at district level) to manage the

distribution of vaccines and Gas. Distribution of vaccines and gas were therefore carried out from Quelimane (and some vaccines from Mocuba, before the storage facilities were destroyed by fire on December 2011).

(iii) **Unexpected outflows:** project funds have been used in building Mocuba regional storage facilities and additional resources have been used to meet distribution of newly introduced vaccines. The FDC management says that the main reason for this is that new vaccines (PCV 10) were introduced in the project period, and that this entailed more work for the FDC staff in terms of time, travels, and per diems (including for staff who were not directly part of the project). The team does not agree with this explanation. As mentioned above, another major project cost was the infrastructure for the privately owned company VidaGás (more than 30% of project costs).

(iv) **Underestimated travelling expenses** – more money than budgeted was also spent on the directors' travels for launchings, field visits, and taking part in the embassy's field visits.

As a result, the project had much higher administrative costs than budgeted (161%), and more than twenty percent of the total budget was spent on administration.

Lack of complete information prevented the review team from carrying out cost-effectiveness and cost-efficiency benchmarking analysis. For cost-effectiveness analysis, apart from project total expenses, a precise number of immunized children from the first time vaccines were delivery up to project phase out would have been required. For cost-efficiency analysis, the total number of delivered vaccines would be required. Allocation criteria regarding investment in Nampula gas distribution (which benefits also the northern region) would be required, and so would the actual vaccine and gas expenditures. Data regarding total number of immunized children and total vaccines doses delivered are not available.

## 4. Financial management systems, practices, and risks

### Routines

As per FDC's Procedures Manual, transactions at head office level are initiated by the employee requesting funds. A funding request form is submitted to the Controller with the following details: project code, budget line, purpose of funds, currency, total quantities, unit price for each quantity, total amount, submission date. The Controller's role entails checking budget forecast to trace the referred to activity; comparing forecast vs actual quantities, comparing forecast vs actual amount and checking availability of funds in the project bank accounts. The file is then submitted to the Treasurer who identifies means of payment and bank account. Before the cheque may be written, the entire file is submitted to the Executive Director, Programmes Director and Administration and Finance Director for approval. Following expense payment and receipts filling, FDC accountant collects and verifies source documents; journalizes the transaction and posting the transaction to the general ledger.

As per the referred to procedures manual, goods up to USD 2,000 may be procured through direct purchase, while a shortlist tender is applicable for goods and civil works above USD 2,000 and below USD 50,000. Procurement of goods and civil works above USD 50,000 is subject to public tender.

Seven randomly selected payment transactions have been analysed against project financial management set up, as per Annex **Error! Reference source not found.**. The referred to sample includes the following files: 1. Payment for PAV Support Project meeting expenses; 2. Payment for 3 days car rental; 3. Payment for 4 refrigerators for PAV Support in Nampula Province; 4. Third disbursement of Memorandum of Understanding between FDC and VidaGas regarding procurement of Mocuba Regional Gas Filling Station; 5. July 2012 USD salaries payment; 6. Shortlist tender for Mocuba regional vaccine storage works and 7. Purchase of a truck for gas transport.

In general, transactions are in compliance with procedures manual provisions, as per the analysis below:

(i) **Form completeness:** forms were accurately filled and all details to enhance understanding of the transaction were attached, include clear indication of quantities, unit price and total amount in original currency;

(ii) **Procurement method:** goods and services up to USD 2,000 were procured through direct purchase, while shortlist tender was resorted to for goods and civil works above USD 2,000 and below USD 50,000. Procurement of goods and civil works above USD 50,000 were subject to public tender. An exception for this regard has been the purchase of 4 refrigerators for Nampula PAV Support Project (file #3 in annex 9.4), which should have been subject to shortlist tender.

(iii) **Checks and approvals:** necessary checks and approvals were obtained from appropriate levels throughout the transaction cycle. In terms of payment practices, FDC only pays goods and services via bank (cheques or transfers), no cash payment is allowed. In general, all payments in the project were made on time and all vouchers were returned on a regular basis. In the case of travels, all staff are obliged to present its acquittals within 3 days after returning to the office, and this deadline was generally met. The vouchers are properly organized, filed and accounted, and are certified by the PM and the controller, before they are sent for accounting process.

(iv) **Segregation of duties:** different employees performed different roles throughout the authorization process and it was unlikely that intervention of a single employee could have rendered transaction integrity compromised.

In the light of the project contract, however, Royal Norwegian Embassy approval should have been sought for the following:

(i) Payment for 4 refrigerators for PAV Support in Nampula Province: an explanatory note states that the embassy agreed that project funds could be used for this transaction although no approval from the embassy was attached;

(ii) Third disbursement of Memorandum of Understanding between FDC and VidaGas regarding procurement of Mocuba Regional Gas Filling Station – this amount were to cater for purchase of a fixed tank and a gas filling weighing scale for which original budget was USD 48,000 (USD 37,500 + USD 10,500). A three times budget deviation should have been discussed with the Embassy prior to expense;

(iii) Shortlist tender for Mocuba regional vaccine storage works: no records of formal approval granted by Royal Norwegian Embassy were found in either project files or reports, following a decision to use project funds in building Mocuba regional storage destroyed by fire on December 2011.

Financial management of PAV Support project in Zambezia should have followed both FDC procedures manual and the contract entered into by MFA ad FAD. The controller of the project played a critical role in ensuring expenditures stayed within available budget and whether there were funds available for each activity. A narrow focus on compliance with FDC procedures manual, however, may have prevented the entire transaction approval chain to take PAV Support Project contract provisions into account.

It is of concern that staff holding control and approval positions focused on cash availability for the project as a whole, as per FDC procedures manual, and failed to be accountable for approved activities and respective budget lines allocation, as per contract clauses. E-mails exchange between the Embassy and FDC suggests the Executive Director is involved in running the organization on daily basis, urging all management members to be accountable towards projects stakeholders. However, FDC management action has been reactive, following concerns raised by Embassy field visits and annual review meetings rather than addressing issues at first place within their scope of responsibility. Concerns brought to FDC management attention by the Embassy should have been discussed in internal management meetings and reports based on contract provisions and planned budget.

### **Budget execution**

Although total committed budget by Royal Norwegian Embassy of NOK 15.5 million has not changed, NOK currency translations into USD resulted in 16% excess of funds. The project actually spent around USD 2.7 million, against an approved budget of USD 2.3 million.

From the financial budget standpoint, budget execution has always been above planned budget, except for 2010 (execution not higher than 71%). This was due to delays in project take off as explained in the previous chapters. A noteworthy 3 times increase of budget execution against planned budget in 2012/2013 (303%), suggests all and every effort were made to complete all the delayed activities before project closure.

“Monthly distribution of vaccines and medicines to all PFV” and “Replacement of cold chain” budget lines were overrun by 74% and 18% respectively, when compared against planned budget although actual quantities purchased are likely less than those planned. Project delays, centralized storage of vaccine and gas, unforeseen activities and higher than expected travelling costs and higher administrative costs may be the main reason for over expenditure. According to FDC, the over

expenditure on monthly distribution of vaccines was caused by the extension of the distribution period of vaccines, which jumped from 36 months to 40 months, as well as the distribution of new vaccines not projected at the beginning of the project and the refurbishment of the new vaccine storage. The budget for “Replacement of cold chain” was almost fully exhausted in the first year of implementation (70%) and in the subsequent years, the activities took place but no budget was allocated to that activity.

Execution of “Capacity building of the project to support gas” budget line was slightly higher than expected (8%), although actually purchased quantities were well short of those planned. “The capacity building of health personnel for the management of the cold chain” budget execution of only 36%, as a relatively small number of people were trained.

Monitoring and administration budget execution increased to as high as 137%, with administrative costs enjoying the major increase (161%). The combined proportion of these two lines may rise even higher when the cost of the End Review will be added. Overall, the high budget execution of administrative costs was determined by the 2012/13 budget which grew to 259%.

Overall, the project total budget was self-explanatory, providing details on planned quantities to be procured under each budget line, unit prices for all items, total amount and timeframe for each activity. Therefore, the same level of detail was expected from budget execution. Available information on budget execution has been inconsistent in all 3 years project timeframe and details on actual quantities purchased and unit prices are scarce. In 2011 the budget lines are not detailed, showing only the main budget lines. In 2012/2013 on the other hand, the report is more detailed, showing the budget and expenditures as detailed as possible, but without actual output purchased. The table entitled Budget Execution Breakdown (appendix 10.3) highlights lack of actual expenditure breakdown by budget line (see the yellow cells).

A thorough analysis of annual financial and programmatic reports suggests that it is likely that actual quantities purchased may have fallen short of those planned, although reasons have not been discussed.

Budget execution should have compared actual outputs against planned outputs and compute percentage execution; unit price variation should be computed through comparison of expected unit price against actual unit price. Budget deviation, either on the grounds of unit price increase or decrease in actual quantities need, should have been presented for all budget lines and all items without exception. The Embassy should have received narrative and quantitative components, where the budget execution (budget expenditures and percentage execution) is provided in the main budget lines and where an appendix is provided with the detailed budget line as detailed in the original approved budget. The appendix should also include the list of the project assets, the bank reconciliations and the bank statements (which used to be included in FDC reports).

### **Transaction recording and reporting**

The project has its own bank accounts, two in Maputo (in Meticals and USD) and one in Zambezia (Meticals). The transactions are made by combination of 2 signatures of any of the 4 directors of FDC, namely Executive Director, Administration and Finance, Programs and Institutional Development directors.

The accounts of the project were updated regularly and the bank reconciliations were done on a monthly basis. The financial reports were prepared on a monthly basis and annually, and they used to show budget execution, comparing the budget and the expenditure by budget line and presenting the budget surplus / deficit. Also, there was a statement of cash availability in the bank accounts, presenting the opening balance, the funds received in the period, and the balance at the end of the period, month or year.

The accounting of the project was done by the help of the CENTRAL GEST accounting software. The system seems to have worked properly and the review team was informed that back-up of accounting information was carried out on a regular basis within the organization, although the accountant and the controller were not aware of how that process was managed.

The accounting software of the organization is very efficient and proper for the volume of information processed in FDC. However, it was not programmed to make a complete log of the project information from a budget management point of view. The balance sheets can only be viewed at a very summarised level, showing the main budget lines only, while no details are available. Also, the system can only show the information from 2011 onwards. 2010 and earlier is only accessible in a process that is not practical. The FDC controller explained that the older database is in the process of being integrated into the current one, so that all the information of the projects can be easily accessible via the IT system. The financial progress reports bring a lot of information but they are not systematic and clear enough to make an easy analysis.

We noticed that the annual budgets in the progress reports vary from year to year, which is not the correct procedure for budget management. Although we do understand that in the beginning of each year the organization had to update the budgets, for management and performance evaluation it is recommendable to compare the expenditures to the original budget.

### Auditing

The organization has institutionalised guidelines, including financial and administrative procedures, procurement and travels guidelines and ethic and conduit code that are being followed. The audit is performed by certified auditors, being Pricewaterhouse Coopers (2010) and BDO (2011, 2012 and 2013). There is an annual audit for FDC as an institution and for each project as a whole according to the contract between FDC and the donor. For this project, all audits were performed and the auditor was hired by the organization.

**Table 2: summary of auditors' opinion and findings:**

Description	2010	2011	2012 and 2013
<b>Opinion</b>	Unqualified	Unqualified	Unqualified
<b>Recommendations</b>	Medium to high risk and priority	None	One low and one medium risk finding
<b>Comments</b>	Lack of internal controls and following of established procurement and control procedures.	It seems that FDC followed up and solved the issues raised in the 2010 audit report, although nothing is said about that follow up in the financial progress reports sent to the embassy.	No evidence of expenditure approval by the donors in case of lack of funds in the budget. As stated above, the financial reports sent to the embassy has no descriptive analysis of the budget management.



As for the FDC audits, all years had audit reports, except for 2012 where the respective report is not yet concluded. This is unfortunate since it is now 2014 and following best practices, the 2012 report should have been available by June 2013 at the latest.

According to FDC DAF, PM, Controller and accountant the opinion of the auditors in all years about the project was unqualified, meaning that FDC followed the standards, procedures and the grant contract signed with the Norwegian Embassy. It is important to note however, that the management letter of 2010 raised very strong concerns about the internal controls and procurement practices, as presented in table 2.

The 2011 audit report gives a better picture, while the 2012 management letter is more critical regarding the budget management. This is in part a consequence of lack of proper financial analysis in the financial reports sent to the Norwegian Embassy during the whole project implementation period.

### **Compliance with contract clauses**

FDC received a total of USD 2.7 million from the Norwegian Embassy in the project period. According to the contract, the project expected to receive a total of USD 2.3 million, meaning that it received around USD 400 000 more than agreed. According to the organization's explanation, the difference was caused by the exchange gains, between conversions of NOK, USD and MZM. Translation of cash inflows from NOK into USD ended up increasing available funds to PAV Support in Zambézia Project by 16.32%. Although by the time the Contract between the Norwegian MFA and FDC was signed on September 30<sup>th</sup> 2009, NOK/USD exchange rate was NOK 6.2035, the project NOK amount has been translated into USD at NOK 6.7314. Actual exchange rates used to convert NOK into USD, as per *Table 3* have been consistently lower than expected exchange rates throughout the disbursement period, having resulted in exchange surplus in all disbursements. The lowest exchange rates have been recorded in October 2011, May 2011 and November 2009, and they have resulted in the highest proportions of budget differences relative to expected disbursement in the referred to period (23% for the former and 21% for the latter). However, only in 2010 was an exchange loss reported by the audit and no reference is made about this issue in the following years. Close to all funds received in the project were used (the current balance is USD 806). There are still some activities to be paid, e.g., the End Review of the project which will cost far more than the current balance.

There is no evidence of a proper address of the excess amount in the FDC financial reports. Authorization for use of exchange gains should have been sought from MFA as any budget amendment were to be agreed upon in advance in writing. This is therefore a breach of the contract.

Table 3: comparison of project expected cash inflows vs. actual cash inflows:

Transfer month	Amount in NOK	Expected exchange rate NOK/USD	Expected Amount in USD	Actual exchange rate NOK/USD	Actual Amount in USD	Budget differences
Nov-09	350,000.00	6.73	51,995.28	5.56	62,964.36	10,969.08
Apr-10	3,000,000.00	6.73	445,673.81	5.91	507,829.03	62,155.22
Sep-10	1,700,000.00	6.73	252,548.49	6.28	270,528.33	17,979.84
Dec-10	1,700,000.00	6.73	252,548.49	5.92	287,162.16	34,613.67
May-11	1,365,977.00	6.73	202,926.72	5.56	245,811.95	42,885.23
Oct-11	1,250,000.00	6.73	185,697.42	5.48	228,310.50	42,613.08
Dec-11	1,250,000.00	6.73	185,697.42	5.76	217,070.42	31,373.00
May-12	2,250,000.00	6.73	334,255.35	5.73	392,978.78	58,723.43
Oct-12	1,300,000.00	6.73	193,125.32	5.67	229,216.26	36,090.94
Dec-12	1,334,023.00	6.73	198,179.70	5.64	236,591.82	38,412.12
<b>Total</b>	<b>15,500,000.00</b>		<b>2,302,648.00</b>		<b>2,678,463.61</b>	<b>375,815.61</b>

## 5. Exit strategy and sustainability

FDC's involvement in the project ended in March 2013. The issue of sustainability of the project after the end of the implementation is not clearly presented in the final report. There are no clear strategies on how FDC intends to guarantee the continuity of the program with the same standards of response to the PAV, in regard to the replacement of broken equipment, and transport costs for the distribution of drugs and vaccines. This is particularly worrisome as long as one of the identified problems prior to the implementation of the project was the lack of vehicles and fuel.

The project provided the DPSZ with four 4x4 vehicles, but the final report does not make clear how the DPSZ will guarantee the maintenance of these vehicles or provide for fuel for the monthly distribution of medicines. According to the FDC, however, the sustainability of the programme will not be a problem since EPI is a national program.

The team has received a copy of the exit strategy, which has the following six points (translated from Portuguese):

1. DPS will start to buy the gas from January 2012 using project money. After six months from January 2012 there shall be no complaints from VidaGás in regard to payment.
2. Management of the equipment that was procured by the project (cars, printers). At a meeting on the 19<sup>th</sup> July 2012 it was agreed that DPSZ will have the ownership of the assets.
3. Human resources: FDC had eight employees working full time on the project. For five of them their contracts terminate from July 2012. Of these eight, four are drivers. FDC has requested DPSZ to hire them. DPSZ has only hired two of them, since the other two were older than 35 (the government age limit for hiring new employees due to pension costs). FDC decided to maintain three of the employees (including the finance officer) in Quelimane up to December 2012.
4. The four land cruisers are under the DPSZ's responsibility from August 2012. DPS of Cabo Delgado and Nampula have shared their experiences.
5. The FDC office in Quelimane was closed in December 2012. All files were taken to Maputo.
6. Monitoring and follow-up. In the period January – March 2013 the FDC headquarters will monitor and follow-up the work.

The exit strategy ends with the following conclusion: During the meeting 24 – 25 July 2012 all the participants agreed that the project implementation has been positive and that DPSZ will manage to maintain the activities. In the team's view, this exit strategy is unsatisfactory. First, the strategy omits three of the project cars (a pick-up and truck that are in the custody of Vidagás, and a car that is in the custody of FDC). According to the Appropriation Document, FDC and government authorities will at the end of the project decide on the future modality use of all assets. This has not been done. Secondly, the strategy should state in a detailed manner how DPSZ will guarantee that they have enough funds to carry on the activities. Third, the exit strategy should describe how the FDC will help DPSZ to plan, budget and coordinate with other donors to maintain the activities. Transferring ownership of the cars from FDC to DPSZ is not a strategy in itself. The strategy should state what DPSZ will do to carry out maintenance, and how fuel costs shall be covered.

The DPSZ Director says that the DPSZ provides the same services as before, and that they have made some adjustment in the budget to cater for per diem, fuel and maintenance of the cars since immunization is a priority. The province's major strategy to uphold the activities is to find a new partner/donor to cover the costs. The DPSZ has also called the MOH and asked for extra support to buy gas after the FDC left. According to an UN representative working closely with the DPSZ, DPSZ told the UN that FDC had left the province and that they didn't have funds for the continued distribution of gas and vaccines. WHO, as one of DPSZ's major EPI partners, then decided to do an emergency back stopping for the rest of 2013 for fuel etc. (the sum is said to have been somewhere between USD 100,000 and 200,000).

The DPSZ Director admits that with limited funds, the province has had to compromise. He says that for the last round (October 2013) the health technicians had to go for the distribution without per diems. One of the health technicians had contrary information, saying that they did not carry out the distribution of gas and vaccines in October this year because the funds were not released (it is reported that the bank had system problems, and was unable to move money between accounts). Health workers confirmed that they had not received gas and vaccines in October. The team finds it surprising that the DPSZ refers to limited funds as long as the province is in charge of large scale donor funded health projects. It should be the role of the DPSZ to ensure that the distribution of vaccines and the maintenance of the cold chain are integrated into the new projects.

As for the delivery of gas, FDC and VidaGás have agreed that VidaGás shall never quit their delivery to the DPS, disregarding payment problems. The company is obliged to let DPSZ have gas on credit. The DPSZ Director says that the relationship with VidaGás was a bit strained in the beginning after FDC left, since DPSZ was unable to pay but that the relationship is now good. DPSZ has prepaid for the gas for the rest of 2013. The total cost of gas per year for DPSZ is MZM 2.5 million. Since there is only one supplier, the price is probably higher than if there had been competition.

The exit strategy makes no mention of how the new deposit in Mocuba will be finalised. The structure lacks electricity and is therefore not in use. The DDS Director of Mocuba expresses concern that if no other donor helps install electricity and buy equipment, the deposit will remain unused for years, since the budgets of both DPSZ and DDS Mocuba are very tight and there are very many priorities to be made. DDS fears that the DPSZ will not invest in the regional center in Mocuba since there is a preference for a centralized structure. After the planned zonal arrangement was left, the gas and vaccines are stored at the provincial level and brought to each of the districts, and the DPSZ does not have an interest in making the deposit in Mocuba operational. The DDSs that we visited had not heard about the exit strategy. Several informants expressed concern that the capacity that has been built by the project will be lost in some years since there is no strategy for how the people who have been trained will train others. Due to government policies, there is a high turnover of staff within the health sector (further studies, transfers etc). This will be particularly problematic when it comes to the maintenance of the gas fridges.

According to the DPSZ PAV manager the greatest challenge in the future will be the maintenance of the four vehicles that transport gas and vaccines, and to replace them in due time. Since the gas is distributed to all provinces from Quelimane (rather than from four zones as planned), each of the four cars travel up to 3000 kilometres every month. The PAV coordinator of DDS therefore fears that the cars will be worn out after two years. Distributing the gas and vaccines from Mocuba to the nearby districts would mean that the distance could be shortened substantially. It would be less expensive in terms of fuel, and also the cars would last longer.

## 6. Recommendations and lessons learned

The review team suggests that DPSZ and the Technical Group of EPI should invite the central stakeholders involved in the province's health sector (UNICEF, WHO, FUNAE, and World Vision and partners) to a meeting to discuss how the project investments best can be safeguarded for the future. Representatives of FDC and the Embassy should be present at the meeting.

### Issues to be solved before the project is being closed

*Install electricity and equipment at the newly built storage building and offices in Mocuba.*

The new deposit in Mocuba has been built, but it is presently not in use since electricity has not yet been installed. The distribution for the entire province is therefore being done from Quelimane, which entails high extra costs. According to the DPSZ PAV manager the responsibility for installing electricity in the building lies with the DPSZ, but at the moment there are no plans for how this should be done. The building also lacks equipment like furniture, smoke alarms, fire extinguishers, and generator/solar equipment in case of power cuts. The deposit would most probably also need some IT-equipment to keep track of the incoming and outgoing goods.

*Establish four delivery zones.* In some of the districts, the gas fridges that were put in place by the project have already been replaced with solar fridges, and FUNAE plans to replace the remaining gas fridges in 2014. The distribution of gas to health facilities may therefore be history by 2015. Nevertheless, there is still a need for distribution of vaccines and medicines. The DPSZ should be convinced to have four delivery zones as originally planned. In the agreement with VidaGás, the company was to deliver gas to four places (zones). Instead, the company now transports gas to one place only (Quelimane), and then the DPS spends large amounts of money to distribute the gas to all the districts. Apparently, the DPS has chosen this solution because they want to have control of the resources and fear loss in the case of decentralization. There was no training in stock management as part of the project. If the DPSZ and DDSs had a system that allowed them to control the stock of gas and vaccines, VidaGás could deliver the gas to the zonal centers, and there could be one land cruiser pick-up in each zone for local distribution. This would and make the cars last longer. An accountability measure that has been tested in other provinces with success, is to have a rotate system. Under such a model, each of the four cars could rotate between the zones a few times a year, with the requirement that they should be passed on in the same condition as it was received. Such systems make people look better after the vehicles since they know that any problems will be reported when they pass the car on after some months.

*Ensure that all facilities get the adequate amount of gas.* In some districts up to half of all facilities with gas fridges regularly run out of gas. Each fridge should have 4 cylinders (5 kg each) per month, but in at least one district the regular supply is three only (which is also to be used for light in facilities with maternal units). At the moment there is no plan or strategy for how to solve this problem, the problems are solved ad hoc each time a facility calls their respective DDS to report that they have run out of gas before the scheduled delivery.

*Make decision on how gas fridges that are being replaces should be utilised.* The field coordinators who attended the training by VidaGás were told that the gas fridges will have a life time of approximately 5 years. After that period they should expect problems to arise. The fridges are now 3 years, which means one can expect that they will function well for at least two more years. Since FUNAE is now replacing gas fridges with solar ones, the team suggests that a plan should be made for how the gas fridges that are being replaced should be used. Since the gas fridges can also run on electricity, they should be transferred to facilities with electric supply. Many facilities may need extra fridges since a number of new vaccines are being introduced in the coming years, including the rotavirus vaccine in 2015. It is also of paramount importance that a plan for maintenance of the solar equipment is made. According to FUNAE, the project includes maintenance support for two

years but the health staff whom we interviewed had not been informed about this and were worried about the capacity within DPSZ and DDSs to maintain and repair the solar fridges.

*Ownership of all vehicles to be transferred to DPSZ.* According to the contract/decision document between RNE and FDC, all project equipment should become the custody of DPSZ upon the completion of the project. While the four land cruiser pick-ups that are being used in the distribution of gas and vaccines have been transferred to DPSZ, the 2.5 tonne truck and Nissan pickup that was procured by FDC and used by VidaGás are still with VidaGás and there hasn't been any discussion about transferring them to DPSZ. According to FDC, their agreement with VidaGás is that the vehicles belong to FDC (and all the documents are now held by FDC). Both the FDC and the VidaGás manager argue that the truck should remain the custody of FDC and VidaGás, since if they were transferred to the DPSZ, they would be used for a wide array of purposes and would not be available for the regular transportation of gas. In addition the above mentioned vehicles, the Final Report refers to a double cabin pick up. The DPSZ made no mention of this vehicle during our field visit, and FDC has later confirmed that this car is with the FDC and that the organization will use it for other projects. The ownership of these three vehicles should be transferred to DPSZ before the project is being closed. The DPSZ can then consider whether it is convenient to let VidaGás rent the truck for a fee. If this transfer of ownership is not being done, and should the DPSZ end up not using gas in the near future, it will have lost valuable assets. Taking into consideration that FUNAE is in the process of replacing all the gas fridges in the province by solar ones, this scenario is in fact likely in the near future.

### **Best practices and lessons learned**

The review team has not identified any best practices that should be exported to other projects that aim to improve national vaccination programs. FDC is praised by the Ministry of Health and local authorities for involving government authorities in a better way than many other NGOs, and for being flexible. At the same time, however, we find lack of ownership of the project at the provincial level, and limited willingness or capacity to secure the sustainability of the project through a proper coordination with other donor funded projects in the health sector.

The FDC project has greatly improved the cold chain in the project period, but the energy source that was introduced through the project to secure the cold chain – gas - has proved very expensive, unreliable when organized by the province authorities, and with poor prospects for sustainability. Only two years after the gas fridges were donated by the project, they are in the process of being replaced with solar fridges. While the health administration at the provincial level argues that gas has been a good investment, health workers express a strong preference for solar equipment. In the process of assessing the project proposal from FDC, Norad and the embassy had very relevant reservations towards the use of gas and the role of the privately owned company VidaGás. FDC was asked to explain why gas was a better solution than solar energy, and their explanations were accepted. Considering FDC's great economic stake in gas (ownership of VidaGás), advice should have been solicited from other stakeholders as well, including independent experts, FUNAE, and other donors who support the province's health sector.

## 7. References

In addition to project documents, the following documents and web pages have been consulted:

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Republic of Mozambique, Ministry of Health

### *Web pages*

FUNAE:

[http://www.funae.co.mz/index.php?option=com\\_content&view=article&id=46&Itemid=27&lang=en](http://www.funae.co.mz/index.php?option=com_content&view=article&id=46&Itemid=27&lang=en)

Fundação para o Desenvolvimento da Comunidade:

<http://www.fdc.org.mz/>

Ogumaniha SCIP Zambezia (funded by USAID):

<http://www.ogumanihascip.org/>

<https://www.facebook.com/Ogumanihascip?fref=ts>

## 8. Appendices

### 8.1 In Interview schedules

#### Qualitative review: Siri Lange and Gaspar Sitefane

Day/date and activity/persons met	
<b>Monday 4.11</b>	<b>Lange and Sitefane</b>
<p><b>FDC</b> Adelino Xerinda, Programme Manager Jacinto Uqueio, Program Director Rosalina Mazoio, Accountant</p> <p><b>MoH</b> Dr. Benigna Matsinhe, PAV Manager, Department of Immunization</p> <p>Team meeting</p>	
<b>Tuesday 5.11</b>	<b>Lange and Sitefane</b>
<p><b>Royal Norwegian Embassy</b> José Capote Øyvind Udland Johansen</p> <p><i>Transfer to Quelimane (by air)</i></p> <p><b>DPS, Quelimane</b> José Pondeca, Chefe do PAV (Focal point for the review)</p>	
<b>Wednesday 6.11</b>	<b>Lange and Sitefane</b>
<p><b>DPS</b> Dr. Epifanio Mahanjage, Medico Chefe</p> <p><b>World Vision</b> Rudolfo Henriques, Chefe de Adjunto de Equipa (Deputy Chief of Party), Ogumaniha SCIP Zambézia</p> <p><b>UNICEF</b> (Maputo based staff attending meetings with DPSZ in Quelimane)</p> <p>Montse Renom, Pediatrician</p> <p>Luigi D'Aquino, Maternal and Child Health Specialist</p> <p>Massilimano Sani, Communication for Development (informal conversation on Knowledge attitude survey)</p>	



<b>Thursday 7.11</b>	<b>Lange and Sitefane</b>
<p><i>Transfer to Mocuba (156 kilometers)</i></p> <p><b>Mocuba District</b> Felizberto Manuel J. Mesa, Chefe de Repartição de Promoção e Controlo de Doenças e Saude Publica (Chief of the Department of Disease Control and Public Health)</p> <p>Directora Distrital de Saude (District Director of Health) Lurdes Luciano Braganca</p> <p>Visit to the former Poste Regional da Vaccinas (Regional Deposit for Vaccines) which was destroyed by fire in 2011)</p> <p>Visit to the new construction for Poste Regional da Vaccinas (constructed with money from the grant)</p> <p><b>VidaGás</b> Alberto Daniel, Regional Manager of Mocuba base</p>	
<b>Friday 8.11</b>	<b>Lange and Sitefane</b>
<p><b>DPS</b> Staff distributing vaccines and gas from Quelimane Ana Claudia Calace, Coordenadora do PAV (PAV coordinator)</p> <p><i>Transfer to Alto Benfica (95 kilometers)</i></p> <p><b>Centro de saude de Alto Benfica (Alto Benfica health centre)</b> Tour of the facility, observation of equipment Fernando Jacoba, Agente Medicina Geral (General Medicine Agent)</p> <p><b>Concelho de saude Alto Benfica (Health committee of Alto Benfica)</b> Benjamin Gile, Chefe de Concelho, Baroso) Miguel Pente Suliveiro, Chefe de conselho de saude (Raivoso) Maru José Maugune, Activista de HBC de Baroso, membro do Conselho de saude (Home based care activist, member of the health committee)</p> <p><i>Transfer to Namanjavira (approximately 40 km)</i></p> <p><b>Namanjavira Health Post</b> Tour of the facility, observation of equipment</p> <p>Caldino Vasconcelos, Tec. Med. Preventiva, responsável do PAV (Medical technician, responsible for PAV)</p> <p><i>Transfer back to Mocuba (approximately 50 km)</i></p> <p><b>VidaGás</b> João Rodrigues, General Director Transfer to Nicoadala (approximately 120 km)</p>	

<b>Centro de saude de Nicoadala (Nicoadala Health Center)</b>	
Observations	
<b>Health committees of the Nicoadala district:</b>	
Antonio Dorito, carpenter and activist of home based care and literacy training	
Juliana Cebola, Leader of the Nicoudala Headquarters Health Committee	
Alberto Joao de Costa, farmer, Leader of the Domela Health Committee	
<b>OGUMANIHA project (World Vision/USAID)</b>	
Carlitos Sumal Salvado, Coordenador District (District Coordinator)	
<i>Transfer to Quelimane (approximately 31 kilometres)</i>	
<b>Saturday 9.11</b>	<b>Lange and Sitefane</b>
Team discussion and planning, report drafting	
Transfer to Maputo (flight at 15.10)	
Debrief meeting with José Capote (Lange)	
<b>Sunday 10.11</b>	<b>Sitefane</b>
Rest and report writing	
<b>Monday 11.10</b>	<b>Sitefane</b>
Transfer to Namacurra	
Visit to DDS, health facilities and health committees	
<b>Hospital Distrital de Namacurra (District Hospital of Namacurra)</b>	
<b>Observations</b>	
José Fernando – Responsável da Saúde Comunitária (Community Health Responsible - Namacurra)	
Suzete Candido – Agente de Medicina Preventiva - enfermeira (preventive medicine Agente – nurse)	
<i>Transfer to Malei (approximately 50 km)</i>	
<b>Malei Health Unit</b>	
Tour of the facility, observation of equipment	
Carlota Mavila Jo – Técnica de Medicina – Responsavel da Unidade Sanitária (Medicine Technician and Responsible for the Health Unit)	
Maiquene Alberto Simoes – Enfermeira SMI (Nurse - Infant and Mother health)	
<i>Transfer to Maciaia (approximately 20 km)</i>	
<b>Maciaia Health post</b>	
Tour of the facility, observation of equipment	

<p>Vasco Ernesto – Nurse; responsible for the Health post (Enfermeiro e responsável do Posto de Saude)</p> <p><i>Transfer to Quinta Girassol (approximately 40 km)</i></p> <p><b>Quinta Girassol Health post</b> Tour of the facility, observation of equipment</p> <p><i>Transfer to Quelimane (approximately 80 kilometres)</i></p>	
<b>Tuesday 12.11</b>	<b>Sitefane</b>
<p><b>PAV office, Quelimane</b></p> <p>Victor Brito – Técnico de Medicina Preventiva - Oficial de Campo (Preventive Medicine Technician – field officer) Paulino Nhambe – Responsável pela Manutenção (Responsible for the maintenance)</p> <p>Transfer to Maputo (flight at 15.10)</p>	
<b>Monday 25.11</b>	<b>Sitefane</b>
<p><b>DPSZ. Florindo Cuambe Albino, Logistic and field coordinator (telephone interview)</b></p>	
<b>Tuesday 26.11</b>	<b>Sitefane</b>
<p><b>FUNAE, Maputo office. Mr. Miguel Diogo, Electrical Engineer, Head of Solar and Wind System Division</b></p>	

#### Financial review: Eugenio Salvador Chimbutane

<b>Day/date and activity/persons met</b>
<b>Monday 4.11</b>
Team meeting
<b>Tuesday 7.11</b>
<p><b>Royal Norwegian Embassy</b> José Capote Øyvind Udland Johansen</p>
<b>Thursday 7.11</b>
<p><b>FDC</b> Adelino Xerinda, Programme Manager Rosalina Mazoio, Accountant</p>

<b>Friday 8.11</b>
<b>FDC</b> Eunica Adriano, Director of Administration and Finance
<b>Wednesday 13.11</b>
<b>FDC</b> Iva Eduardo, Controller

## 8.2 Budget Execution 2010-2013

Below a summary of budget execution per year and for the whole project is presented. The expenditures are compared to the main budget lines in order to evaluate the level of budget execution and the performance of implementation of the activities based in the budget agreed in the approved budget at the beginning of the project. In order to perform that evaluation below, we analysed the level of execution of the funds (source/ revenues) and expenditures (expenses) projected.

SOURCE OF FUNDS	2010			2011			2012 and 2013			Total		
Opening Balance		62 964.36			202 545.37			128 866.54			62 964	
Transfers from Norway Embassy		1 065 519.52			691 192.87			858 786.86			2 615 499	
Exchange Gains/ Losses		-15 550.90			-			-			-15 551	
<b>Total Available</b>		<b>1 112 932.98</b>			<b>893 738.24</b>			<b>987 653.40</b>			<b>2 662 913</b>	
BUDGET AND EXPENDITURE	2010			2011			2012 and 2013			Total		
DESCRIPTION	BUDGET	EXPEND.	% EXEC.	BUDGET	EXPEND.	% EXEC.	BUDGET	EXPEND.	% EXEC.	BUDGET	EXPEND.	% EXEC.
<b>Goal 1</b>	<b>723 173</b>	<b>616 010</b>	<b>85%</b>	<b>225 925</b>	<b>368 726</b>	<b>163%</b>	<b>171 120</b>	<b>286 585</b>	<b>167%</b>	<b>1 120 218</b>	<b>1 271 321</b>	<b>113%</b>
Replacement of cold chain	552 053	385 198	70%	-	163 846	-	-	104 261	-	552 053	653 305	118%
Capacity building of health personnel for mgmt of cold chain	78 360	11 822	15%	78 360	44 578	57%	78 360	28 126	36%	235 080	84 527	36%
Monthly distribution of vaccines and medicines to all PFV	92 760	218 990	236%	92 760	110 175	119%	92 760	154 198	166%	278 280	483 362	174%
Installation of stoves and lamps for sterilization in M. hospitals	-	-	-	54 805	50 127	91%	-	-	-	54 805	50 127	91%
<b>Goal 2</b>	<b>400 000</b>	<b>150 000</b>	<b>38%</b>	<b>291 323</b>	<b>222 859</b>	<b>76%</b>	<b>-</b>	<b>376 771</b>	<b>-</b>	<b>691 323</b>	<b>749 630</b>	<b>108%</b>
Capacity building of the project to support gas	400 000	150 000	38%	291 323	222 859	76%	-	376 771	-	691 323	749 630	108%
<b>Goal 1 &amp; 2</b>	<b>10 250</b>	<b>1 168</b>	<b>11%</b>	<b>30 750</b>	<b>26 120</b>	<b>85%</b>	<b>20 500</b>	<b>24 008</b>	<b>117%</b>	<b>61 500</b>	<b>51 296</b>	<b>83%</b>
Community mobilization	10 250	1 168	11%	30 750	26 120	85%	20 500	24 008	117%	61 500	51 296	83%
<b>Monitoring and administration</b>	<b>153 383</b>	<b>143 209</b>	<b>93%</b>	<b>141 675</b>	<b>147 167</b>	<b>104%</b>	<b>134 548</b>	<b>299 483</b>	<b>223%</b>	<b>429 606</b>	<b>589 859</b>	<b>137%</b>
Monitoring & Evaluation	30 000	12 332	41%	30 000	44 034	147%	30 000	44 834	149%	90 000	101 200	112%
Evaluation	10 000	9 741	97%	10 000	-	0%	10 000	15 210	152%	-	-	-
Monitoring	20 000	2 591	13%	20 000	-	0%	20 000	29 624	148%	-	-	-
Administrative costs	98 152	115 179	117%	98 152	103 133	105%	98 152	254 649	259%	294 456	472 961	161%
Contingencies	25 231	15 698	62%	13 523	-	0%	6 395	-	0%	45 150	15 698	35%
<b>TOTAL</b>	<b>1 286 806</b>	<b>910 388</b>	<b>71%</b>	<b>689 674</b>	<b>764 872</b>	<b>111%</b>	<b>326 168</b>	<b>986 847</b>	<b>303%</b>	<b>2 302 648</b>	<b>2 662 106</b>	<b>116%</b>
<b>Balance</b>		<b>202 545</b>			<b>128 867</b>			<b>806</b>			<b>806</b>	

## 8.3 Budget Execution breakdown

SOURCE OF FUNDS	2010			2011			2012 and 2013			Total		
Opening Balance		62 964.36			202 545.37			128 866.54			62 964	
Transfers from Norway Embassy		1 065 519.52			691 192.87			858 786.86			2 615 499	
Exchange Gains/ Losses		-15 550.90			-			-			-15 551	
<b>Total Available</b>		<b>1 112 932.98</b>			<b>893 738.24</b>			<b>987 653.40</b>			<b>2 662 913</b>	
		0.00			0.00							
EXPENDITURE	2010			2011			2012 and 2013			Total		
DESCRIPTION	BUDGET	EXPEND.	% EXEC.	BUDGET	EXPEND.	% EXEC.	BUDGET	EXPEND.	% EXEC.	BUDGET	EXPEND.	% EXEC.
	(USD)	(USD)		(USD)	(USD)		(USD)	(USD)	(USD)	(USD)	(USD)	(USD)
<b>Goal 1</b>	<b>723 173</b>	<b>616 010</b>	<b>85%</b>	<b>225 925</b>	<b>368 726</b>	<b>163%</b>	<b>171 120</b>	<b>223 486</b>	<b>63 099</b>	<b>286 585</b>	<b>167%</b>	<b>1 120 218</b>
<b>Replacement of cold chain</b>	<b>552 053</b>	<b>385 198</b>	<b>70%</b>	<b>-</b>	<b>163 846</b>	<b>-</b>	<b>54 149</b>	<b>50 113</b>	<b>17 143</b>	<b>104 261</b>	<b>552 053</b>	<b>653 305</b>
Maintenance of refrigerators in the Health Units									17 143	17 143		
Purchase of gas operating refrigerators for the conservation of vaccinations		287 329									405 875	
Purchase of gas cylinders with 5,5kg capacity for the refrigerators, lamps and stoves											53 664	
Automatic reversers for the refrigerators											19 671	
Reducers of 30 mbar for the refrigerators and stoves											5 460	
Coated tyre/ refrigerators											3 607	
Taps/refrigerators and stoves											3 276	
Hose pipe for refrigerators and stoves											6 400	
Hoops for refrigerators and stoves											2 100	
Neoprene joining for the refrigerators											1 000	
Rehabilitation and upgrading of Province Warehouse		25 765									30 000	
Maintenance of Province's and regional Warehouse		72 104						54 149	32 969	87 118	21 000	
<b>Capacity building of health personnel for the management of the cold chain</b>	<b>78 360</b>	<b>11 822</b>	<b>15%</b>	<b>78 360</b>	<b>44 578</b>	<b>57%</b>	<b>78 360</b>	<b>15 140</b>	<b>12 986</b>	<b>28 126</b>	<b>235 080</b>	<b>84 527</b>
Reproduction of teaching aids		6 180									4 080	
Accommodation for participants		4 307									228 480	
Fuel		1 336									2 520	
Quarterly meetings								8 541	12 986	21 528		
PAV Provincial Annual Meeting								6 598	-	6 598		
Experience exchange in a province								-	-	-		

EXPENDITURE DESCRIPTION	2010			2011			2012 and 2013				Total			
	BUDGET	EXPEND.	% EXEC.	BUDGET	EXPEND.	% EXEC.	BUDGET	EXPEND. 12	EXPEND. 13	EXPEND.	% EXEC.	BUDGET	EXPEND.	% EXEC.
	(USD)	(USD)		(USD)	(USD)		(USD)	(USD)	(USD)	(USD)		(USD)	(USD)	
<b>Monthly distribution of vaccines and medicines to all PFV</b>	92 760	218 990	236%	92 760	110 175	119%	92 760	154 198	-	154 198	166%	278 280	483 362	174%
Fuel		2 219						78 740		78 740		30 240		
Perdiem		7 448						75 458		75 458		11 520		
Maintenance of vehicles												11 520		
Purchase of vehicles		209 323										225 000		
<b>Installation of stoves and lamps for sterilization in maternity hospitals</b>	-	-		54 805	50 127	91%	-	-	-	-		54 805	50 127	91%
Gas lamps for lighting												6 851		
Glass tubes for the lamps												5 712		
Glass globes for the lamps												2 340		
Wick for the lamp												2 502		
Stoves for sterilization												13 600		
Fire extinguisher of 9kg for the fire system at Vaccination Fixed Sites												23 800		
<b>Goal 2</b>	400 000	150 000	38%	291 323	222 859	76%	-	221 046	155 725	376 771		691 323	749 630	108%
<b>Capacity building of the project to support gas</b>	400 000	150 000	38%	291 323	222 859	76%	-	221 046	155 725	376 771		691 323	749 630	108%
Conclusion of filling station in Mocuba								221 046	155 725	376 771				
Conclusion of premises in Nampula/ Offices												50 000		
Purchase of a fixed tank to increase the storage capacity for GPL												37 500		
Purchase of a gas filling scale												10 500		
Purchase of gas cylinders with 5,5kg capacity for the promotion of basic stoves												54 613		
Purchase of 11kg capacity gas cylinders for domestic consumers												42 185		
Purchase of 45kg capacity gas cylinders for the kitchens at district hospitals												26 409		
Purchase of 12 ton trucks to transport gas - Zambia /Nampula		150 000										150 000		
Purchase of 3,50 ton trucks for internal distribution - Zambia												100 000		
Purchase of a truck with cistern to carry gas: Maputo/Nampula												150 000		
37 mbar reducer for stoves and refrigerators												5 796		
Accessories for the installation of kitchens in the hospitals												56 000		
Burner for the production of industrial / hospital stoves												8 320		
<b>EXPENDITURE</b>														
<b>DESCRIPTION</b>	<b>BUDGET</b>	<b>EXPEND.</b>	<b>% EXEC.</b>	<b>BUDGET</b>	<b>EXPEND.</b>	<b>% EXEC.</b>	<b>BUDGET</b>	<b>EXPEND. 12</b>	<b>EXPEND. 13</b>	<b>EXPEND.</b>	<b>% EXEC.</b>	<b>BUDGET</b>	<b>EXPEND.</b>	<b>% EXEC.</b>
	(USD)	(USD)		(USD)	(USD)		(USD)	(USD)	(USD)	(USD)		(USD)	(USD)	
<b>Goal 1 &amp; 2</b>	10 250	1 168	11%	30 750	26 120	85%	20 500	12 768	11 240	24 008	117%	61 500	51 296	83%
<b>Community mobilization</b>	10 250	1 168	11%	30 750	26 120	85%	20 500	12 768	11 240	24 008	117%	61 500	51 296	83%
Capacity building of HPD for community mobilization								12 768	11 240	24 008		4 500		
Establishment and capacity building of Health Committees		1 168										51 000		
Reproduction of IEC T teaching aids												6 000		
<b>Monitoring and administration</b>	153 383	143 209	93%	141 675	147 167	104%	134 548	226 929	72 554	299 483	223%	429 606	589 859	137%
<b>Monitoring &amp; Evaluation</b>	30 000	12 332	41%	30 000	44 034	147%	30 000	21 329	23 505	44 834	149%	90 000	101 200	112%
Evaluation	10 000	9 741	97%	10 000	-	0%	10 000	-	15 210	15 210	152%	30 000		
Initial evaluation	10 000	9 741	97%	-	-	-	-	-	-	-	-	10 000		
Final evaluation	-	-	-	-	-	-	10 000	-	-	-	0%	10 000		
Intermediate evaluation	-	-	-	10 000	-	-	-	-	-	-	-	10 000		
Audit									-	15 210				
Monitoring	20 000	2 591	13%	20 000	-	0%	20 000	21 329	8 295	29 624	148%	60 000		
Monthly field monitoring	12 000	2 591	22%	12 000	-	0%	12 000	12 000	1 224	13 224	110%	36 000		
Quarterly monitoring	8 000	-	0%	8 000	-	0%	8 000	9 329	7 071	16 400	205%	24 000		
<b>Administrative costs</b>	98 152	115 179	117%	98 152	103 133	105%	98 152	205 600	49 049	254 649	259%	294 456	472 961	161%
<b>Contingencies</b>	25 231	15 698	62%	13 523	-	0%	6 395	-	-	-	0%	45 150	15 698	35%
<b>TOTAL</b>	1 286 806	910 388	71%	689 674	764 872	111%	326 168	684 229	302 618	986 847	303%	2 302 648	2 662 106	116%
<b>Balance</b>		202 545			128 867					806			806	

## 8.4 Purchased items

Items to be purchased / built	Quantity as per Procurement Plan	Actual quantity	Expected Amount in USD	Difference	Execution (%)
Bivalent gas refrigerators	170	116	-54	68 %	170
Gas ovens	170	100	-70	59 %	170
Gas lamps	170	100	-70	59 %	170
9 kg fire extinguishers	170	100	-70	59 %	170
Pick up Vehicles	5	5	0	100 %	5
Fixed tank (Nampula gas storage facilities)	1	1	0	100 %	1
12 ton trucks (gas distribution from Nampula to Zambezia)	2	2	0	100 %	2
3.5 ton trucks (gas distribution in Zambezia)	2	1	-1	50 %	2
Tanker to transport gas from Maputo to Nampula	1	1	0	100 %	1
Refurbishment of provincial storage facility	1	1	0	100 %	1
Nampula premises / offices	1	1	0	100 %	1
Fixed tank in Nampula	1	1	0	100 %	1
Gas filling scale	1	1	0	100 %	1
11 kg gas cylinders for domestic consumers	1 260	2 646	1 386	210 %	1 260
45 kg gas cylinders for district hospitals	324	357	33	110 %	324
5.5 kg gas cylinders for refrigerators, lamps and ovens	2 600	2 646	46	102 %	2 600

## 8.5 Analysis of randomly selected transactions

<b>File # 1 - Code</b>	<b>DCT10</b>	
Date	February 8 <sup>th</sup> 2010	
Purpose	Payment for PAV Support Project meeting expenses	
Amount	MZM 139,900	
Additional information	N/A	
Staff position in the transaction	Name of staff	Role in the transaction
Employee requesting funds	Adelino Xerinda	Filling in funding request form, providing all transaction details: project code, budget line, purpose of funds, currency and date.
Controller	Mário João	Checking budget forecast to trace the activity; comparing forecast vs actual amount; checking availability of funds.
Treasurer	Madalena Amós	Identifying means of payment and bank account
Accountant	(Only signature – scarcely legible)	Collecting and verifying source documents; journalizing the transaction; posting the transaction to the general ledger.
<b>File # 2 - Code</b>	<b>DCT2</b>	
Date	February 18 <sup>th</sup> 2010	
Purpose	Payment for 3 days car rental	
Amount	USD 411.84	
Additional information	This request has been submitted following a tender, where the following firms bid: Imperial (USD 411.84), Luambala Car Rental e Serviços (USD 699.9) e Luambala Car Rental e Serviços ou Transcity Rent a Car (USD 1,053.0)	
Staff position in the transaction	Name of staff	Role in the transaction
Employee requesting funds	Justina Martins	Filling in funding request form, providing all transaction details: project code, budget line, purpose of funds, currency and date.



Controller	Mário João	Checking budget forecast to trace the activity; comparing forecast vs actual amount; checking availability of funds.
Treasurer	Julai	Identifying means of payment and bank account
Approving entities		Executive Director, Programmes Director and Administration and Finance Director
Accountant	(Only signature – scarcely legible)	Collecting and verifying source documents; journalizing the transaction; posting the transaction to the general ledger.
<b>File # 3 - Code</b>	<b>DCT1</b>	
Date	<b>January 13<sup>th</sup> 2011</b>	
Purpose	<b>Payment for 4 refrigerators for PAV Nampula Province</b>	
Amount	<b>USD 19,980</b>	
Additional information	<b>An explanatory note is attached to the transaction states that following a recommendation to provide Nampula PAV Support Project with additional cold chain units, the embassy agreed that project funds could be used to purchase 4 refrigerators and place them in Nampula Districts located near Zambézia Province.</b>	
Staff position in the transaction	Name of staff	Role in the transaction
Employee requesting funds	Adelino Xerinda	Filling in funding request form, providing all transaction details: project code, budget line, purpose of funds, currency and date.
Controller	Iva Carla	Checking budget forecast to trace the activity; comparing forecast vs actual amount; checking availability of funds.
Treasurer	Saustina	Identifying means of payment and bank account
Approving entities		Executive Director, Programmes Director and Administration and Finance Director
Accountant	(Only signature – scarcely legible)	Collecting and verifying source documents; journalizing the transaction; posting the transaction to the general ledger.
<b>File # 4 - Code</b>	<b>18</b>	
Date	<b>July 16<sup>th</sup> 2012</b>	
Purpose	<b>3<sup>rd</sup> disbursement of Memorandum of Understanding between FDC and VidaGas regarding procurement of Mocuba Regional Gas Filling Station</b>	

Amount	USD 190,987	
Additional info.	N/A	
Staff position in the transaction	Name of staff	Role in the transaction
Employee requesting funds	Adelino Xerinda	Filling in funding request form, providing all transaction details: project code, budget line, purpose of funds, currency and date.
Controller	Iva Carla	Checking budget forecast to trace the activity; comparing forecast vs actual amount; checking availability of funds.
Treasurer	Orlanda Isaias	Identifying means of payment and bank account
Approving entities		Executive Director, Programmes Director and Administration and Finance Director
Accountant	(Only signature – scarcely legible)	Collecting and verifying source documents; journalizing the transaction; posting the transaction to the general ledger.
<b>File # 5 - Code</b>	<b>21</b>	
Date	<b>August 8<sup>th</sup> 2012</b>	
Purpose	<b>July 2012 USD salaries payment</b>	
Amount	USD 5,200	
Additional information	N/A	
Staff position in the transaction	Name of staff	Role in the transaction
Employee requesting funds	Rosalina Armando Mazoio	Filling in funding request form, providing all transaction details: project code, budget line, purpose of funds, currency and date.
Controller	Iva Carla	Checking budget forecast to trace the activity; comparing forecast vs actual amount; checking availability of funds.
Treasurer	S Quechela	Identifying means of payment and bank account
Approving entities		Executive Director, Programmes Director and Administration and Finance Director

Accountant	(Only signature – scarcely legible)	Collecting and verifying source documents; journalizing the transaction; posting the transaction to the general ledger.
<b>File # 6 - Code</b>	<b>33</b>	
Date	<b>September 3<sup>rd</sup> 2012</b>	
Purpose	<b>Shortlist tender for Mocuba regional vaccine storage works</b>	
Amount	<b>MZM 1,239,090.13</b>	
Additional information	<b>Leisegang &amp; MC Construtora Limitada (MZM 1,239,090.13), Conor Consultoria &amp; Engenharia de Construção Civil e Obras Públicas (MZM 1,281,440.77), Construção Civil e Comércio Geral Francisco Cardoso Bagão (MZM 1,309,102.30).</b>	
Staff position in the transaction	Name of staff	Role in the transaction
Employee requesting funds	Adelino Xerinda	Filling in funding request form, providing all transaction details: project code, budget line, purpose of funds, currency and date.
Controller	Iva Carla	Checking budget forecast to trace the activity; comparing forecast vs actual amount; checking availability of funds.
Treasurer	S Quechela	Identifying means of payment and bank account
Approving entities		Executive Director, Programmes Director and Administration and Finance Director
Accountant	(Only signature – scarcely legible)	Collecting and verifying source documents; journalizing the transaction; posting the transaction to the general ledger.
<b>File # 7 - Code</b>	<b>DCT34</b>	
Date	<b>July 31<sup>st</sup> 2013</b>	
Purpose	<b>Purchase of a truck for gas transport</b>	
Amount	<b>MZM 3,102,388.94</b>	
Additional information	<b>Tendering firms: Motocare, Lda (MZM 3,102,388.94; capacity 9.53 ton), Motocare (MZM 3,537,541.76; capacity 10.393 ton), Técnica Industrial (MZM 2,912,881.00; capacity de 8.9 ton); Toyota de Moçambique (MZM 3,752,190; capacity 7 ton) and Tata Moçambique (MZM 1,523,340; capacity 8 ton).</b>	
Staff position in the transaction	Name of staff	Role in the transaction

Employee requesting funds	Adelino Xerinda	Filling in funding request form, providing all transaction details: project code, budget line, purpose of funds, currency and date.
Controller	Orlanda Isaias	Checking budget forecast to trace the activity; comparing forecast vs actual amount; checking availability of funds.
Treasurer	Julai	Identifying means of payment and bank account
Approving entities		Executive Director, Programmes Director and Administration and Finance Director
Accountant	(Only signature – scarcely legible)	Collecting and verifying source documents; journalizing the transaction; posting the transaction to the general ledger.

## 8.6 Terms of reference

### Terms of reference for assessment

Project support to the expanded program on immunization (pav) in zambézia province, mozambique.

### Introduction

The “Fundação Para o Desenvolvimento da Comunidade” (FDC) signed a contract with the Ministry of Foreign Affairs (MFA) on 30<sup>th</sup> September 2009 to implement the above project for a period 2009-2011, having a frame of NOK 15.5 million.

The overall goal of the project is to improve the health status and environment of target communities. The aim was three-fold, (i) to improve the system of distribution and conservation of vaccines in the Health Units, (ii) to promote the use of LPG (gas) as an alternative to Kerosene and firewood, and (iii) to improve access to sources of environmentally friendly energy, by communities-.

The main actions of the Project include:

- Reinforcing the National health system through the improvement of the cold chain and of the vaccines control system;
- Capacity building of vaccination agents to improve the quality of services rendered to communities, improving trust between health services providers / beneficiaries;
- Improvement of community access to PAV and Mother Infant Health (SMI) services through the improvement of planning of Mobile Vaccination Brigades;
- Capacity building of local CBO/NGOs to mobilize community education for health (women and child);
- Improvement of the linkage between SUs and communities through the creation, capacity building and operationalization of community health committees;
- Conservation of the environment through the use of environment- friendly energies (domestic gas); and
- Improvement of the life of Women in the community through the reduction of distances between households and SUs, to enable women to dedicate more time to productive activities.

The following results/indicators were expected at the end of the project period:

- 100% of gas refrigerators in all fixed posts working correctly every single week of the year;
- 100% of PAV workers in the Health Units with fixed posts performing routine stock control of vaccines and using refrigerators correctly;
- Vaccination Coverage Rates higher than 80% in the first year at province level, and higher than 80% in all districts by the end of the second year for BCG, VAS, DPTHB3, Polio3 e VAT shots;
- Vaccine Drop Out Rates (DPTHB1/ DPTHB3; BCG/VAS; Polio1/Polio3; DPTHB1/VAS) less than 15% at province level by the end of the first year, and less than 10% by the end of the second year at district level;
- Vaccine Wastage Rates (BCG<50%; VAS<25%; DPTHB, POLIO, VAT<15%) at the end of the first year reduced to half by the end of the third year;
- Percentage of Vaccination and gas stock out in the Vaccination Fixed Sites;
- Percentage of Vaccination coverage rate in all Project target districts;
- Percentage of gas used by health centres, community and industry attributable to the Project;

- Number of sensitization sessions targeted at woodcutters, coal makers and community in general for rational use of forest resources;
- Degree in percentage of reduction of deforestation attributable to the project;
- Percentage of stock out of vaccine and gas;
- Vaccination coverage;
- Rate of vaccination wastage;
- Percentage of Vaccination Fixed Sites visited monthly;
- Percentage of refrigerators with problems at Vaccination Fixed Sites;
- Schedule of deliveries / visits / clinic

According to the contract signed between FDC and MFA, an end review focusing on progress to date and effectiveness of the Project, i.e. the extent to which the Purpose is being/have been achieved, shall be carried by June 2012 (the project was delayed hence new time table set)

### **Project scope**

The Project was implemented in the 17 districts of Zambezia Province, including the city of Quelimane. The Project has adopted an approach comprised of interventions aimed at reinforcing the capacities of DPS – Zambézia and awareness actions for promoting and adopting healthy behaviours within the community.

### **General Objective**

The purpose of the review is to assess the results obtained during the 4 years implementation phase, identify positive and negative aspects, constraints and challenges that influenced its implementation as well as lessons learned. The end review shall assess the achievements of objectives as reflected in project document in order to provide conclusions and recommendations for the future. Particular attention shall be paid to: efficiency, effectiveness, cost-efficiency and effectiveness, relevance and sustainability of the Project. Some reflections on the value for money shall also be considered.

### **Specific objectives**

- Assess the level of organization and coordination of FDC in Zambézia, namely at the level of coordination mechanisms with DPS and other local partners;
- Collect evidence of program actions at local level that are capable of using the lessons learnt and good practices;
- Propose an exit strategy in such manner to ensure that activities remain upon Project termination;
- Propose means for monitoring activities upon exiting of FDC.

### **Assessment criteria**

Considering the objectives, the consultant shall be able to answer the following questions:

#### Project Relevance

- To what extent the Project activities have been relevant to improve the general well-being of children?
- To what extent actions /activities contributed for the objective of protection infancy and the right of the child?
- To what extent is the project aligned with government of Mozambique's sector policies, guidelines and plans?

### Effectiveness of development actions

- What is the effectiveness of actions developed with relation to the proposed objectives?
- What successes and constrains were found by FDC and its partners in implementing activities?
- To what extent the monitoring system setup by FDC, and the monitoring sessions undertaken by the headquarters were pertinent and relevant?
- What's the pertinence and relevance of services rendered by the locally established community structures?
- To what extent the Project objectives are coherent within the local context (reality of actors, institutional and technical capacities of partners)?

### Efficiency applied to the implementation of the project

- Up to what point the funds used has been adequate to achieve the expected results?
- Evaluate in a critical way the management of the project: human resources, modalities of capitalizing the on-going experiences, internal communication, perception of the local choice and thematic, level of partners professionalism (the implementation of the project involves several partners such as social work, health, the CBOs, NGOs and association ) and present corrective proposals for the future;
- Evaluate project's financial management systems and practices and risks

### Sustainability

- What measures are being taken by FDC and the local partners to address continuity of the operation after finishing the program?
- Have the partners aimed or considered sustainability solutions after 3 years of implementation?
- What measures have (are being) been taken to ensure sustainability and continuity of the programme in relation to Government as well as health and energy systems

### Results on the beneficiaries and target group

- What is the result of the project viz-a-viz the target group as identified in the project document, and the direct beneficiaries?
- What is your assessment of the degree of satisfaction of the institutional partners in relation to the results obtained?

### **Recommended methodology**

The methodology to adapt to the evaluation should include:

- Review the programmatic and strategic documents of the Project and of the health sector on PVA Zambézia, and other national documents relevant to the study area.
- Interviews with Embassy management and relevant staff handling the cooperation with FDC as well as key staff of FDC at national, provincial and local levels.
- Interviews with government health authorities and selected communities/beneficiaries.
- Travel to Zambezia province and selected three districts to be agreed with FDC and Embassy.

## Tasks and responsibilities

Responsibilities of the DPS:

- Provide all the documentation relevant to carry out the end review;
- Facilitate the contact with the PAV technical team;
- Facilitate visits to the PFV, CS,SDSMAS and Hospitals whenever necessary;

Responsibilities of the FDC:

- Coordinate logistics to carry out the study;
- Facilitate access to all documentation related to the project;
- Put available for consultation all the reports produced within the project;

Tasks and Responsibilities of the consultant:

- Production of the draft report of not more than 10 pages in English and Portuguese (two weeks after field work, which must contain the main findings and conclusions. Written comments to the draft shall be provided by the Embassy and FDC to the team within two weeks);
- A final report with the Executive Summary of not more than 25 pages (one week after receiving comments from FDC and Embassy) in both paper format and electronically;
- Present the results of the study in a separate technical meeting with FDC and Embassy.

## Profile of the consultant(s)

**The review shall be conducted by a team of international and national consultants. The former shall act as team leader.**

- Postgraduate degree in public health, community health and other areas;
- Experience in the analysis of quantitative and qualitative data;
- Relevant experience conducting evaluation/review exercises;
- Fluency in English and some Portuguese knowledge.

The International consultant shall be overall responsible for the review and lead the team. He or she shall:

- Author the report
- Steer the whole process of the review, including the drafting of a detailed work plan and chronogram, coordination of personnel, logistics related to field work, report drafting and presentation in the technical meetings with FDC and the Embassy as well as the final report;
- Any other tasks deemed relevant for successful completion of the assignment.

The local consultant procured by FDC and funded by the grant provided shall provide necessary input to the assignment as defined by and in collaboration with the team leader. He or she shall:

- Contribute in analysing the local context;



- Translate and interpretation of consulted documentation, reports, interviews wherever required;
- Make local arrangements transport and communication-wise, set up meetings, interviews, etc;
- Write relevant sections of the report as required and requested by the team leader;
- Act with high integrity, diligence and professionalism to ensure successful completion of the assignment;
- Undertake any other tasks and responsibilities as deemed necessary for the assignment.

### **Deadlines**

The end review is expected to be carried out in the second quarter of 2013. Contracting shall be done in the first quarter of 2013.

### ***Addendum to the ToR:***

Upon the contracting of CMI, it was agreed that an inception report should be part of the deliverables.

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This report is an end review of Fundação para o Desenvolvimento da Comunidade (FDC)'s project to support the implementation of the Expanded Programme on Immunization (EPI) in the Zambézia province. The purposes of the project were the following:

- to improve the system of distribution and conservation of vaccines in health units
- to promote the use of gas as an alternative to kerosene and firewood
- to improve access to sources of environmentally friendly energy by communities

The Royal Norwegian Embassy in Maputo (RNE) funded the project, which had total budget of NOK 15.5 million (approximately USD 2.7 million), and the project was implemented in the period 2010 to 2013. Overlapping with this project period, other donors have funded (and are funding) the province's health sector with more than USD 77 million, but there has been no or limited coordination between the projects. The team concludes that while the reviewed project has greatly contributed to improving the cold chain in the province, the energy source that was introduced through the project to secure the cold chain - gas - has proved very expensive, unreliable when organized by the province authorities, and with poor prospects for sustainability. Only two years after the gas fridges were donated by the project, they are in the process of being replaced with solar fridges by another donor. Health workers express a strong preference for solar equipment. Approximately one third of the FDC project funds were spent on infrastructure for the privately owned company VidaGas to enable this company to supply gas to the gas fridges and lamps introduced by the project and to the local population. Since the gas fridges are now being replaced, and since the local population has not adopted gas for cooking, there is the danger that this investment has long term benefits for the company only, and not for the health sector. FDC owns one third of the gas company and was therefore biased in the choice of technology to secure the cold chain.