



**Norges  
Naturvernforbund**  
Friends of the Earth Norway

ADEL – Sofala / NNV

Final

# MID TERM PROJECT EVALUATION REPORT

## CLED – MARINGUE: PROMOTION OF SUSTAINABLE ENERGIES (Sofala, Mozambique, Africa)



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## Abbreviations

ADEL – Sofala	Local Economic Development Agency
LEDEC / CLED	Local Energy and Development Center
NRMC / CGRN	Natural Resources Management Committee
DANIDA	Danish International Cooperation Agency
NNV	Friend of Heart Norway
OVE	Danish Organization for Renewable energy
SEALAS	Sustainable Energy Activities in Local Areas of Sofala
SDAE	District Service of Economical Activities

## Executive Summary

This is a Project Evaluation Report on Promotion of Sustainable Energies which is being implemented by ADEL Sofala in Maringue district, province of Sofala, Mozambique, since 2008. The Project is being technically and financially supported by OVE through SEALAS Project (a Danish NGO) and by NNV (a Norwegian NGO), as part of decentralized cooperation.

The ADEL/NNV Project on Promotion of Renewable Energy in Maringue is based on the ongoing Project SEALAS that aim to strengthen the capacity of local communities and civil society organizations in promoting sustainable practices in the use of natural resources.

Five (5) administrative posts and localities of the district namely Maringue-village, Subue, Thundakulu, Canxixe, Macoco and Tucuta are benefiting from the project which comprises several components, such as: Promotion of Community Nurseries, Promotion of Improved Stoves, Shop of Energies/Solar systems, Promotion of Energy Fund, Support of Saving and Micro-credit Groups, improved granaries and improved goat and sheep houses, Promotion of campaigns against uncontrolled burnings, Promotion of improved kitchens, Promotion of environmental clubs and environmental education.

The evaluation was undertaken by an external consultant in December 2010. The methodology consisted of desk review on the basis of Project documents, progress reports, schemes of work and others. Then some field work was followed, whereby face to face interviews were conducted involving 72 people such as beneficiaries, community leaders, governmental authorities, members of Local Committee of Energy and Development, Management Committee of Natural Resources, teachers representing schools and members from peasants' Associations.

The evaluation found out that direct beneficiaries and other partners stand up for the innovation and relevance of the project taking into account that Maringue is a seriously affected district by wood exploration route and informal charcoal producers. On the other hand, lack of electric energy from the national public network gives great relevance to this project as it may allow training to people at the local level as schools benefiting from systems of solar panels have introduced night shift courses that help public servants and others continue their education and training which in the end will improve their qualifications.

Local communities in Maringue are now learning the need to use energetic alternatives, mainly those which are renewable and sustainable, as a way to protect the forest and the biomass, in order to make shore that the coming generation can get benefits of a good environment, provided by nature.

Finally the Project contributed a lot to improve the representation of the community as there were created a platform to provide voice to the most vulnerable people.

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# 1. Introduction

## 1.1 Evaluation Objectives

This is a Project Evaluation Report on Promotion of Sustainable Energies in Maringue District which is being financed by NORAD through NNV which also provides technical assistance and is implemented by the Sofala Local Agency of Economic Development (ADEL Sofala). The project is being implemented since 2008 and with the partnership of several actors in the field of energies and development like the district Government, local communities and SEALAS Project financed by DANIDA through OVE.

This project is an initiative which results from partnership between OVE, NNV and ADEL Sofala. OVE provides technical assistance aimed at empowering the institutional capacity of ADEL - Sofala and NNV is contributing for direct implementation of activities through CLED Maringue, on sustainable energies field; with perspective to target other new energy centre; ADEL is the local facilitator and support partner in the implementation.

The project covers the following components:

1. Promotion of Community Nurseries
2. Promotion of Improved Stoves
3. Shop of Energies/Solar system
4. Promotion of Energy Fund
5. Saving and Micro-credit Groups
6. Improved granaries and improved goat and sheep houses
7. Promotion of campaigns against uncontrolled burnings
8. Promotion of improved kitchens
9. Promotion of environmental clubs
10. Promotion of environmental education

All these components are part of SEALAS project which is being implemented by ADEL Sofala with technical and finance support from OVE since 2008. Due to its good results, a second phase of this project just started and it runs from 2011 to 2013.

The SEALAS Project intervened in Nhamatanda, Maringue, Beira, Mafambisse, Caia. The ADEL/NNV project is a branch of the SEALAS Project and it mainly deals with promotion of renewable energy directly on the energy centres.

The intermediate evaluation of this Project aims at determining: i) The progress, considering the objectives and outcomes; ii) strategy of implementation; and iii) recommendations for improvements in the future. The evaluation analyzed the program using an analytical framework covering the following subjects:

- Relevance and implementation strategy

- Progress, results and efficiency of Project
- Effectiveness in the use of resources
- Effectiveness of management mechanisms
- Sustainability and planning taking into account the impact of the project

The attached Reference Terms show more details about questions that the evaluation should take into account.

The main partners and beneficiaries who participated in the evaluation were as follows:

- ADEL technicians including the adviser of project, the head of Maringue CLED, and the ADEL Executive Director
- NNV technicians who provide technical support to the project based at Maringue district
- The District Administrator of Maringue representing the local Government
- Committee Members of Natural Resources Management
- Traditional Authority represented by a traditional leader
- Presidents and members of Peasants' associations beneficiaries of the project
- Focal points of benefiting schools
- Other beneficiaries

The major result of this evaluation is the production of an evaluation report which includes results of the project and practical suggestions on how it should be implemented in the future so that some strategic corrections may be performed.

## **1.2 Methodology of Evaluation**

### **1.2.1 Specific Methods used in data collection**

#### **a) Desk review**

Basically the documental and bibliographic research of the project and progress reports were consulted and provided a better understanding of the objectives and results that the Project intends to achieve. Other relevant documents which have to do with government strategies in the promotion of energies and sustainable use of natural resources have been taken into consideration.

#### **b) Discussions with Focal Groups**

The evaluation team interviewed a group whose sampling can be considered as representative. This method consisted on using semi-structured questions with focal groups of 10 elements amongst the 60 interviewees from 10 Associations, which meant the constitution of 6 groups who interacted with the evaluators. One fundamental question for concern for the evaluation was gender sensitive.

### **1.3. Interviews**

Semi-structured interviews and consultation to secondary data were performed. The administration of different questionnaires allowed collection of information on the impact of the project in the view of different people and entities. To facilitate collection of information different questionnaires were designed for each above mentioned group.

As a way to complement information on the Project of Promotion of Sustainable Energies and allow an evaluation of results, key informants were interviewed in seven schools, institutions and partner organizations in the Project, Maringue District Services of Economic Activities, District Government and community members.

The project adviser went together with the evaluator to the field work but his presence was not allowed in the administration of interviews so that interviewees could feel comfortable, with the objective of assuring quality of information with no influence.

## 2. Project Introduction

### Development goal, expected outcomes and indicators for 2009-2011

#### **Development goal:**

Improve accessibility of sustainable energy services to the poor and low-income communities in Sofala.

#### Expected outcome 1:

Involved local communities have a platform to discuss and raise local energy and development issues

#### Indicators:

- Three Local Energy and Development committees are established and operating in three districts of Sofala<sup>1</sup>
- Three Energy Centres are established and in use as meeting points for interested public<sup>2</sup>
- Three local energy and development plans, including baseline studies on energy consumption, are produced
- Local energy groups are established on sub administrative level, and are involved in disseminating of good practices, in coordination with the three energy centres
- Families, local community authorities, associations and other relevant stakeholders are reached by information and trainings

#### Expected outcome 2:

Sustainable energy technologies are available in the target area, and local sustainable energy projects are implemented

#### Indicators:

- Three Energy Shops are established and in function, providing or introducing at least 5 new energy products to the community
- The Energy Shops are able to revolve its stock of energy products from sales income
- Three Energy Funds are established and benefiting individuals and small associations
- Various sustainable energy technologies are promoted and are accessible to families and institutions through the centres

#### Expected outcomes 3:

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<sup>1</sup> This objective have been up dated to only one district (Maringue) due to budget reduction, and resistance to change, that request from the project more intervention on the field than expected.

<sup>2</sup> The centres are now: Maringue Sede, Subue and Canxixe (all in Maringue district)



Schools are actively involved in dissemination of sustainable energy solutions

Indicators:

- Five to ten schools from each district have participated in the project, and become important local stakeholders for sustainable energy promotion
- Adapted and targeted educational material is developed and dissemination outside the Energy Centres targeted district have started
- Teachers/school's personnel have attended activities and trainings organised in coordination with the energy centres
- Involved schools have formal groups to take action for energy efficiency and increased use of renewable energy

### 3. Findings

This section presents evaluation results which are organized according to principal elements of analyzes for this evaluation, as spelled out in the reference terms. The evaluation was necessary to analyze the program using an analytical structure which covers the next questions:

- Relevance and implementation strategy
- Progress, results and effectiveness of Project
- Effectiveness in the use of resources
- Accuracy of management mechanisms
- Sustainability and planning taking into account the impact of the project

#### 3.1 Relevance

In general terms the project is of great relevance as 90% of inquired beneficiaries responded that the initiative and the approach of the Project is "Very Relevant". The district Government is also of the opinion that the project is relevant taking into account that the district is one of the most pressurized by woodmen in the exploration of wood and also by charcoal producers who earn their living by producing coal.

Local authorities including the Government and traditional leaders agree that the project is in line with priorities and development strategies of Maringue district, considering that reforestation, protection of the environment with the involvement of schools where the Project operates, sensitization against uncontrolled burnings and the use of alternative sources of energy as a way to reduce aggression to biomass, are a priority.

The local development approach which is characterized by support in the reduction of vulnerability of populations through assistance to saving groups and the institutionalization of the Energy Fund make the Project still more relevant.

The involvement of 7 schools with 2.000 students is seen as very strategic regarding knowledge transference to children so that at very young age can acquire knowledge related to the environment and the need of managing natural resources including the utilization of sustainable energies and can serve as multipliers to pass on the message to their relatives.

The general strategy of concentrating actions in just one district like Maringue, may help to measure the impact of the project in the future and also for the construction of an ***intervention model*** concerning the promotion of local strategies for using renewable energies.

Although the Project has covered some communities in 5 localities, there are still others that have not gone through similar experience. Therefore the project should be continued so that other communities can have the opportunity of benefiting from the local strategy of promotion of community nurseries, production of improved stoves, improved granaries and improved goat and sheep houses, promotion of sensitization against uncontrolled burnings, promotion and use solar panels amongst other activities.

Based on SEALAS project data, the savings and micro-credit groups, which benefited 2030 people 905 man and 1728 women. This strategy should deeply be promoted in the project in other to reduce the lack of resources for local communities whose revenues depend from agricultural production.

## **3.2 Progress**

### **3.2.1 Key products**

This section presents progress achieved by the Project taking into account the materialization of its objectives. The Project started in 2008 when funds were allocated and technicians were mobilized.

### **3.2.2 Outcomes**

The table below is simply a record of main activities performed up to this moment and it does not show the kind of impact that the Project has generated. The evaluator assesses outcomes on the basis of examples from some communities and some kind of subprojects, where he/she was able to validate the impact in an independent way with external agents (the beneficiaries and community members). Other general aspects to consider are: the difficulty to establish a linkage of causality between the project and changes in the field, due to other many factors including interventions of other organizations, secondly that change at the base level takes time and it appears to be somehow early for this project to measure the impact.

### 3.2.3 General Remarks

An important contribution for the materialization of the objectives of the program is whenever the project operates properly. The interested parts (the target group) are thankful to the work of the project by stating that it is of immense value and indispensable. Outcomes from a brief quantitative research, performed during field work where all informants were asked to evaluate the program on a scale from 1-10 showed a high level of satisfaction. The majority of those inquired scored the project between 8/9 out of 10 implying that the project is operating successfully. For example, in the locality of Maringue village, 11 interviewees found that the project of improved stoves that they benefited from was at 100% which is very rewarding.

The district Government, local communities represented by Committees of Natural Resources Management and CLED members, including religious leaders involved with CLED support the initiative and the Project is seen as strategic and important for local communities.

The intervention of the project was crucial as it provided the beneficiaries and the local community the skills of valuing natural resources as well as the appropriation of various improved technologies and of low cost of production and alternative sources of renewable energy. 90% of the beneficiaries classified the results of the project as “very relevant” due to the following aspects: Consciousness of local populations on environment issues has increased; pressure on the biomass from the populations in general or by charcoal producers reduced to a large extent; people are gradually accepting to use the improved stove; cutting down of trees has decreased due to introduction of new techniques of coal production and others; community nurseries are income generating sources and reforestation and they help in the production of community forests; and uncontrolled burnings have fallen considerably in the last years.

CLED is very excellence room for discussion about best practices in the use of sustainable energy as it promote various production techniques. With support of SEALAS Project, similar CLED were set up in Nhamatanda, Mafambisse, Milha 8 and Maringue. They work in the same sense and aim to provide a tool to promote local knowledge on environment issues including the promotion of sustainable and renewable energy. It is in this space where communities prepare their participation in the debate about problems related to the environment in general and in particular to issues of promoting renewable energy. As result, CLED has been supporting in strengthening talks between CGRN and traditional leaders, with the aim of improving the application and use of resources allocated to communities through CGRN.

By their turn, schools have been a stage for the mainstreaming of environment issues in school activities as a way to give grounds to knowledge and the culture of environmental conservation, promotion of renewable energies and reforestation. This is a good practice that should be replicated in other schools at the provincial and national level.

On the other hand, beneficiaries have presented some constraints such as poor sales of plants in the community nurseries on the part of concessionaries for the reforestation; no return of credit by lenders; some resistance in the use of improved stoves allegedly because finding wood is much easier; schools have indicated that systems of solar panels fail constantly and that lamps do not last long and they are expensive. Public schools have difficulties to repair these problems because they have no budget for that purpose.

The development of community nurseries is done with the purpose to sell the plants to the concessionaries which should be used in the reforestation. As they do not purchase the plants the peasants are being less motivated in going on with this activity. Thus, in "Recommendation" section there are some activities that have to be carried on in order to solve this and other constraints.

The beneficiaries have difficulties to repay the loans obtained in through the Energy Fund because their income is very low and dependent on agricultural production.

As discussed in this report, the low production due to absence of rains slowed the ability of farmers' income. Thus, the purchase of energy equipment including improved stoves are not prioritized by the local communities that allocate their money for goods (food).

The stove use ends up being harmed because the populations in times of crisis save their money and has the advantage of getting much firewood near their dwellings. However, it is necessary to draw attention to communities about the importance of adopting the earliest possible strategies to use their resources in a very sustainable manner, even though apparently they are available in large quantities.

The concern of schools should be viewed from the standpoint that it is necessary to look for quality equipment that is acquired in order to avoid embarrassment of damage to systems and solar lamps.

### 3.2.4 Learned Lessons

This section shows some learned lessons with the implementation of the project:

- Active participation of beneficiaries and other stakeholders is supportive for the implementation of the project
- The involvement of district Government at the level of the administrator is essential as he provides all political support to the Project and to ADEL Sofala.
- Transference of improved technology is important for the establishment of a local technical capacity to allow continuity of production activities of stoves, coal or nurseries.
- Ownership from beneficiaries was obtained as the project did not collide with profound local community customs and habits.
- The energy project as tool for promotion of local development through improvement of living standard of the interveners and beneficiaries of the project through implementation of production activities of nurseries and reforestation, production of stoves, production of honey, promotion of saving and micro-credit is important as it allows income generation for local populations.
- Training of technicians, members of CGRN or other partners must follow some scheme of work, monitoring and additional support to ensure effectiveness.
- The involvement of religious authorities in the project helped in the reach and sensitization of local population to understand the importance of the project and boosted the involvement of CLED members in the project implementation.
- The promotion on ASCAS (the saving and micro-credit groups) is key to ensure that local communities can have alternative funds to achieve their needs.

### 3.3 Effectiveness

This section is about organizational and management issues that affect the performance of the project. The evaluation does not focus on specific problems in each sector but brings a general overview in a way to consider structural and organizational matters that did hindered the project in achieving a highest level of performance.

### 3.3.1 Structure of Management and Coordination

The backstopping of the project is done by NNV located in Norway with an advisor from ADEL resident in Beira who by his/her turn provides technical assistance to CLED technician in Maringue. Reports are forwarded to NNV and also to the Director of ADEL Sofala. The evaluation found out that there are difficulties of contact and communication as resources for missions on the part of NNV have no budget though a small number of visits have been made. The communication is most times done by internet but it is not extensive to the technician in Maringue.

Thus as a way to support the technical team, (project advisor and CLED technician) the involvement of the Executive Director will be important in the process of planning, implementation, monitoring and evaluation as a way to ensure quality (looking at indicators and outcomes and not only at undertaken activities) of information sent to partners at the due time.

It would be important to schedule periodic teleconferences between NNV, project advisor and CLED technicians with support of ADEL Director for planning and review of some matters inherent to the project.

The Project Committee is one of the most relevant mechanisms which support the Project implementation in Maringue. This represents a link between ADEL and the local communities. The committee represents the voice of the beneficiaries in the project management and this also serves as a tool to guarantee the accountability of the project. However, during the implementation of the project some difficulties were found, namely the one related to the vision and priorities of local development and the importance to get them involved on project activities. The management of resources from public investment and those from the Energy Fund brought some problems. The community leaders were being accused of mismanagement and misunderstanding of the objective of the energy fund by committee members.

Taking into consideration the importance of the committee to the project, ADEL did some efforts to bring them together and improve their participation in the project. Thus, some community leaders are being replaced in order to renew the structures.

### 3.3.2 Administration

The management of resources allocated to the project is done in a transparent way and according to acceptable administrative and financial procedures. The *procurement* respects adjudication rules of services or purchases for the project. Payments to third parts are made and justification notes are submitted to the treasury.

### **3.3.3 Budget**

The budget allocated to the project is consistent with the expectancy to realize activities and to achieve intended outcomes of the project.

The allocated money to the project, considering budget borderlines, is consistent with the level and degree of demand. ADEL has adequate support from NNV to operate the project as it supports in placing technicians at the local level as well as affording administrative costs.

In 2010, the level of budget execution was 90% which shows that most of the activities have been carried out at a good pace.

### **3.3.4 Monitoring and Evaluation**

The evaluator found out that the adviser and CLED technician paid monitoring visits to districts and to beneficiaries on regular systematic basis. Some beneficiaries appeared to be satisfied with technical support received from by the local technician as the adoption of new technologies needs close monitoring as the education level of beneficiaries is very low.

Technicians lack a (template) for information collection and documentation, something that might have some effect on the kind of information reported in progress reports.

It is necessary to adopt a simple instrument to collect information so that reporting on advancements of the project can be simple and materialization of objectives of taking into account its indicators. Technicians need to have appropriately filed and systematized information in the simplest form of data base.

### 3.4 Efficiency

In general terms, the performance of the project was good. The project executed 90% of the budget allocated in 2010 and the results of the project were satisfactorily achieved. However the project should be developed with less resources and get the same results as stated by ADELs collaborators. Therefore, the available resources should be used to consolidate the results achieved in the first phase and try to scale up small activities such as sensitization campaigns and transference of technology to new places in Maringue.

However, this could have been for the fact that at the initial stage, the project is more directed to sensitization; such objective was achieved and was extended to introduction of concrete products that directly benefitted the populations. So the achieved result was the constitution of discussion groups and of exchange of existing knowledge and experiences. The mobilization was well conducted and apart from it, units of production are being created a point which was not clear in the paper of the project, with the help of funds more than expected was done, despite difficulties for giving more support to field technicians with means of transport and other up to date technologies that might facilitate work (internet GPS).

Lack of clarity regarding objectives to be achieved, combined with the initial miss adjustment of intervention priorities of some components of the project and the readjustment of some activities which at the beginning were not in line with local priorities were determinants to obtain an acceptable and good level of performance. On the other hand, the technical quality at the local level also affects negatively the performance of the Project.

As a way to improve the efficiency of the Project, ADEL intends to increase the number of technicians at the implementation level as well as improve their level of technical skills as a way to improve and equip the team.

### 3.5 Sustainability

The transference of skills to beneficiaries and local communities, ownership of initiatives, respect to traditional know how and to local communities *modus vivendi*, the involvement of beneficiaries in the process of planning and in the creation of a joint platform of intervention through CLED and CGRN is crucial for sustainability of the Project. ADEL with support from NNV, has privileged transference of improved and user friendly technologies and appropriately directed to a class with a basic level of education and in some cases to illiterate individuals.

There is a technical team installed and residing in the Maringue which is carrying out with the production of stoves without assistance from ADEL or NNV in various administrative posts of the district.



Schools took possession to address the Project and with few resources can continue to develop various promoting activities for environment and sustainable energy. Teachers can be more and more involved in discussion forums at the local level to share their experiences and their critical view to processes of local development of CLEDs or CGRN.

The district Government accepted addressing the project which means that public sector supports the initiative and is in conditions to mobilize resources so that the Project may continue to be implemented when NNV and ADEL retire, if it is sensitized and pressurized by a civil society entity as CLED.

The kind of renewable energies promoted in the ambit of the project, with exception of systems of solar panels are of low cost, which allow their wide use.

## 4. Conclusions and recommendations

### 4.1 Conclusions

The Project of Promotion of Sustainable Energies in partnership between ADEL and NNV adopted an integrated approach as apart from realizing primary objectives of the Project as it included other relevant questions and inherent to local economic development. Despite their constraints, the introduction of a component connected to energy fund and saving and micro-credit groups was fundamental for promotion of, for example, improved stoves and to stimulate local entrepreneurship.

The introduction of techniques of building improved granaries and improved goat and sheep houses are important to attract interest from communities to participate in a project with a “new” and recent approach for Maringue district. In other hand, the Project contributed a lot to improve the representation of the community as there were created a platform to provide voice to the most vulnerable people.

The principal objective of the project was to increase access to services of sustainable energies for people with low level income, as well as for poor communities.

The evaluation found out that there are difficulties in promoting in a strong way purchase of products of sustainable energy at the level of Maringue, as populations depend on the level of income from their farms to get money for their expenses, obviously that the use of energy is relegated to second position, despite its importance, after satisfaction of basic necessities.

However, the great constrain was shortage of rain or drought which made farmers decrease their production and productivity, in such a way that budgeting difficulties also got worse. The majority of people who received the credit did not return their instalments for the motives mentioned above.

Even so, the project presents various results since the beginning of its implementation in 2008, where the following ones can be found:

1. Strengthening of Organizations of Community Based Networks, Associations of Peasants, Committees of Natural Resources Management on issues of advocacy and dialogue capacity, which allowed that these organizations improved their participation in processes of decision making and diagnosis of problems and local priorities that should be resolved with some resources from tax collection of 20% of forest exploration.
2. The intervention of the project was also taken to be of great value to the extent that for several times it assisted in the mediation and conflict resolution among several actors at the local level.
3. Transference of “know how” in improved or appropriate technology for promotion of alternative production sources of energy as well as for

reduction of pressure on the biomass at the local level resulting from production of wood and coal; There is local capacity for production of stoves and techniques of production of coal, granaries and improved goat and sheep houses and others.

4. Partnerships with the public sector were promoted with the public sector, private sector (though there is still need for improvement) and the community concerning the responsibility of each part in the promotion of natural resources, reforestation need of devastated areas and the implementation of corresponding legislation.
5. Use of schools as key for the maintenance of knowledge about the importance of environment conservation which also goes together with use of sustainable energies.

On the other hand, it was noticed that the established monitoring and evaluation system by the project is so simple that sometimes it cannot cover other relevant activities for the project like the type of established partnerships, mobilization of resources, contribution in achieving objectives of district development etc.

It is also worth mentioning the marketing and publicity services that ADEL provided for the project at the national level something that advanced this experience which is taken to be good practice by the Government as well as by other partners. Several reports were produced on top national newspapers and televisions, thus creating an opportunity for easy replication of the initiative at the level of Sofala province or other regions in the country.

## 4.2 Recommendations

In the second stage, the Project must focus on a certain type of activities as a way to extensively respond to the objectives of its implementation. Technicians should not pay much attention on activities outside the Project to avoid wasting time and resources. Components like granaries and improved goat and sheep houses are not of great relevance for the project, although when necessary to stimulate some groups or partners it's proven as a very good strategy. Due to weak technical capacity at the local level, the Project should make use of CLED and CGRN members as lobbyists on the project. ADEL and the project enjoy sympathy with the district Government, in such a way that it is necessary to use this partnership to strength the promotion of use and access of sustainable energies through local public resources.

ADEL needs to continue to advocate for fair and transparent management of CGRN and the committee Project in other to ensure that the communities are well represented in these forums and guarantee that their voice is heard.

### 1. Solar Panels

1. There is the need of giving more focus to the project by reducing intervention areas as a way to pay more attention on components that are important for Maringue district, such as:
  - i) Promotion of solar panels as this district does not have electric energy yet from the national electricity system, and considering that the project has just benefitted so far 109 families. However there are many people to be covered by the program or initiative yet.
  - ii) Reinforcement of Energy Shops to sell solar panels and their accessories. To give more strength to the undertaking ADEL should promote local small enterprisers to manage the shop in terms of rent contract, as CLED technician is simultaneously the shop manager which gives little possibility of moving about in search and acquisition of material in city markets of Beira or Chimoio or in the neighbouring country of Zimbabwe.
  - iii) It is necessary to increase availability of solar panels at the level of Maringue District. Lamps (that frequently burn) must be available in great quantity and those with high quality must be searched but having in mind purchase power at the local level.

### 2. Promotion of Improved Stoves

This is allied to the system of solar panels, the strong and the quickest result that may be achieved due to low cost technology for its production and facility to spread about. However, for the fact that some communities still being located in territories

where forest exploration is low, they have not felt yet “the necessity of looking for wood very far away and with great transport sacrifice”, something that makes them somehow resistant to adoption of improved stoves.

At a first stage, as a way to sensitize more and more numbers of users, the acquisition of these stoves should be subsidized to a large number of families. Community and religious leaders and local authorities should frequently make use of this approach as a way to sensitize communities to keep their forests green for longer.

The project should support the spread of stove production through training of more producers so that the number of users can be increased.

Entrepreneurs who have benefited from the credit presented good results, to the extent of generating income from these stoves and they employ a considerable number of workers. This practice shows that promotion of improved stoves as well as of solar panels should also be done in small enterprise moulds.

Associated to stoves, there is the activity of promoting of improved kitchens, where it was noticed that quality concerning pottery works, is very low when compared to the level at any other neighbour country. This weakness has some influence in the final quality of stoves and other pottery products or the ones made of clay. At this stage an option should be made between bringing experienced people from neighbour country to share their experience on how to work with clay or take key partners to such countries, but the first is the ideal option.

### **3. Community Nurseries**

Due to difficulties in terms of productivity which is sometimes noticed on peasants' fields, nurseries are important alternative sources of people's income generation that can be used for the purchase of stoves or solar panels.

It will be important establishing community contracts between associations and private concessionaries with support from district Government and CGRN, for purchase of plants in community nurseries for reforestation.

It is also important to increase the number of nurseries, but in preference of those wood producing plants.

### **4. Saving Groups and Energy Fund**

The Energy Fund must support saving groups in terms of responsibility of credit. Experience shows that collectivization of credit or its concession to Associations generates more profitability and higher return levels in relation to individualization of it.

Thus, 50% of the value from Energy Fund should be allocated to a number of Associations so that they can rotate funds. It means that the Energy Fund should

empower existing saving groups. This will in the end allow considerable ownership and responsibility of beneficiaries and will also help to reduce activities and responsibilities of CLED technician.

## 5. Energy Centres

Energy centres are important for the continuing promotion of sustainable energies where solar panels and improved stoves can be found. These are appropriately tuned with CLED which favours more technical support from CLED, to beneficiaries and CGRN. CLEDs should not be energy shops. There is a need to part CLED from the shop, which is going to be managed privately. This approach would increase ADEL's role of catalyst of local economy and promoter of small enterprising at the community level.

## 5. Monitory and evaluation

### Monitoring of Reports

The Project advisor must produce Progress Reports in a succinct way comparing or matching indicators or outcomes of a certain activity which is being implemented or which has been implemented, so that understanding and monitoring of the advancement of the project can be facilitated.

To put to use an instrument of information collection and documentation, a template should be designed which can be filled in on a monthly or quarterly basis, including the following information:

- Include a list of sub-indicators in a way to capture realizations which are not achieved with current indicators
- Open a space to have qualitative and quantitative information (although indicators already foresee such information it will help extending them to sub-indicators, for example: Total No. of trained people: no. Of women, no. of men; Total No. of benefited people with improved stoves: no. Women; no. Men)
- Should show progress in relation to planned activities
- Should establish a clear connection between the objectives and activities to avoid implementing marginal activities to the project at the expense of the objectives of the program

**However, there are some areas where the project needs to be improved:**

- There is a need to involve big private concessionaries as partners in the project, so that populations can benefit from their intervention in the community, besides the 20% of forest exploration tax. Lobbying and advocacy cannot be done by one side only, but by promoting public/private

partnership and the community, in a way that the Government may convince the private sector comply with their obligations.

- Work with local authorities so that they can support sensitization activities to local communities on various subjects related to the Project such as adherence to the use of improved stoves, the need to return the credit money so that other people can benefit from it and other issues.
- At the internal level (project management) articulation of technical level is important so that technical support can be provided to beneficiaries, to local Government, and other existing forums at the district and province level. There will be necessary to create a medium of communication Maringue and ADEL and influence and decision making to the province level as well as using civil society forums to share the experience of the project and document existing constraints so that the resolution can be supported at the province level.
- Improve the negotiation capacity of Natural Resources Management Committees towards operators and wood explorers to enforce the legislation in force with the aim of benefiting local communities. The purchase of plants from community nurseries would thus be mandatory; this would motivate peasants and associations in investing time in creation of community nurseries as they would have a guaranteed alternative income source.
- Although capacitating Natural Resources Management Committees has been undertaken for some areas it is still important on what concerns to territorial diagnosis and design of projects so that resources allocated to CGRN may exactly be used to benefit communities they represent. Therefore it will be necessary that Energy Centres, through their members, take persuasion roles so that part of the available resources at local level may be allocated for issues of promotion of sustainable energies.
- CLED technician must support CGRN in designing project proposals with the objective of submitting them to funding application at the District Development Fund or search for other sources for resources mobilization at the local level, as to respond to lack of cash and capacity to pay beneficiaries.

## Annex 1: Table 1 about Products

Outcomes	Indicators	Status
<p>Involved local communities have a platform to discuss and raise local energy and development issues</p>	<p>Three Local Energy and Development committees are established and operating in three districts of Sofala</p> <p>Three Energy Centres are established and in use as meeting points for interested public</p> <p>Three local energy and development plans, including baseline studies on energy consumption, are produced</p> <p>Local energy groups are established on sub administrative level, and are involved in disseminating of good practices, in coordination with the three energy centres</p> <p>Families, local community authorities, associations and other relevant stakeholders are reached by information and trainings</p>	<p>There is 1 established and operational CLED while other 2 are in the process of establishment in Subue and Canxixe. CLED are being used as energy centres where members meet to discuss various issues connected to energy and to sustainable use of natural resources amongst other issues connected to local development.</p> <p>10 women have been producing stoves. A group of 15 students who produce and promote stoves in the community have been formed and other 5 activists of solar panels, including 10 CLED members</p> <p>Training in apiculture, improved granaries and improved goat and sheep houses for 25 people in partnership with local government</p> <p>Construction of 10 improved granaries to help in keeping exceeding products</p> <p>Construction of 10 improved kitchens</p> <p>There were some demonstration of ovens for the production of pottery goods, pottery table and institutional stoves in communities of</p>



		Thundankulo, Macoco, Tucuta and Subue.
Sustainable energy technologies are available in the target area, and local sustainable energy projects are implemented	<p>Three Energy Shops are established and in function, providing or introducing at least 5 new energy products to the community</p> <p>The Energy Shops are able to revolve its stock of energy products from sales income</p> <p>Three Energy Funds are established and benefiting individuals and small associations</p> <p>Various sustainable energy technologies are promoted and are accessible to families and institutions through the centres</p>	<p>1 shop in operation. 2 others are in the process of establishment.</p> <p>Sales depend on agricultural outcomes. Agriculturalists who received products in the form of credit are not yet able to return the loan, due to weak production outcomes. Peasants depend on the level of harvest to cope with extra expenses.</p> <p>The Thundakulu Post has a good experience on community development with projects of nurseries, animal breeding and production of improved stoves</p> <p>In Subue a woman has an energy shops which is the outcome of Energy Fund where the sale of improved stoves is promoted</p> <p>There is a local production Group of improved stoves which as two working places one at Maringue Sede and the other at Nhamapaza.</p> <p>The rural Hospital was awarded an institutional stove which is used to cook meals for the interned patients. This award has considerably reduced public expenses. ADEL through CLED supply moringa plants and leaves to be used as food for the patients, thus improving their diet due to</p>

		<p>valuable proteins that this plant possesses</p> <p>A system of solar panel has been offered to a school which for that reason introduced night shift courses</p> <p>Training for CGRN on reforestation, association set up, development of small businesses amongst other training courses.</p>
<p>Schools are actively involved in dissemination of sustainable energy solutions</p>	<p>Five to ten schools from each district have participated in the project, and become important local stakeholders for sustainable energy promotion</p> <p>Adapted and targeted educational material is developed and dissemination outside the Energy Centres targeted district have started</p> <p>Teachers/school's personnel have attended activities and trainings organised in coordination with the energy centres</p>	<p>7 schools promote the production of improved stoves, activities of seeds and paper recycling, nurseries for fruit trees and school vegetable gardens and sanitation in partnership with SEDES.</p> <p>Training of teachers, focal points, on issues of environmental education and sustainable energy and development in partnership with extension agents from SDAE</p>

## Annex 2: Table 2 about Outcomes

What was done	What changed
Promotion of community nurseries	Associations' members and peasants in general have an income source as the production of plants is sold to concessionaries who explore wood so that they can replant them.  Community forests were produced at the local level as a way of reforestation
Introduction of casa mansa technique for coal production	30 charcoal producers are benefiting from this technique. More quantity of coal is produced with less trees.
Use of solar panels in replacement of solar panels in replacement of wood and petroleum	Local schools introduced night shift classes and 350 people had access to education, mainly workers.
Organization and support to saving groups	240 people are part of groups and have access to micro-credits and undertake activities of income generation and they have improved their living conditions
The production technique of improved stoves was introduced	Currently there are about 60 people who can make 3 new models of improved stoves at the local level
Promoted and constructed improved stoves	There were built more than 300 improved fix, fire wood saving stoves, 80 mobile wood saver and 120 Mbaulas - charcoal saver.
Energy Fund promoted	The Fund has a number of 89 beneficiaries, where 53 are males and 36 females
Promotion of improved and improved goat and sheep houses	The group started with 30 animals but currently the number has doubled and the activity of animal raising is linked with sustainable energy as animal excrements are used for reforestation and agriculture activities
Promotion of bee-keepers	Local forests are being protected as local populations no longer perform burnings because of bee-keep Those populations who produce honey have improved their incomes and diet.

## Annex 3: Terms of Reference

### Terms of reference for the evaluation of ADEL's project "Local Sustainable Energy Centre in Sofala"

#### Evaluation purpose

The evaluation shall help the project committee, ADEL and NNV to make sure that the project is able to reach its objectives and indicators for the three-years period. The findings, conclusions, lessons learned and recommendations of the evaluation should therefore be useful during the planning and implementation of the activities in 2011.

Even if the main purpose of the evaluation is learning, it may also serve accountability purposes (for NNV and Norad) (more emphasis on performance accountability than on financial accountability?)

#### Project background

##### The project's idea and rationale *(taken from the application to Norad)*

Being poor not only entails immediate poverty but also low possibilities to escape poverty, due to obstacles such as lacking access to energy resources and efficient technologies to produce affordable energy services. WHO has estimated that more than 80% of the population in Mozambique depends almost exclusively on burning biomass (wood, charcoal, and dung). The primary energy consumption in a typical family is high, but most of the energy is lost in inefficient transformation to charcoal and by cooking on open fires and traditional stoves. The poor families have few alternatives but to pay for the huge energy losses. The current lack of end-user efficiency is also resulting in unnecessary environmental and social health problems.

Unsustainable consumption of firewood and other biomass resources results in erosion, desertification, and reduction of resources, as well as effecting the local and global environment. The reduction of biomass furthermore worsens poor people's access to energy sources. Women spend a considerable amount of time collecting, processing, and using traditional fuel for cooking. This time could be used more productively for education or income generating activities. The use of biomass fuels also result in substantial human health problems which the Mozambican healthcare system is often unable to address or mitigate. Biomass fuels burned in traditional indoor stoves generate pollution which can cause severe health problems. Common problems include acute respiratory infections (particularly in children), chronic obstructive lung diseases (including asthma and chronic bronchitis), lung cancer, and pregnancy-related problems. Indoor air pollution is also associated with blindness and changes in the immune system.

There exists healthier, more sustainable energy solutions for the poor, but a lack of knowledge and access to technologies is prohibitive. An absence of effective

information networks, prevent local populations from exploring their energy options. Without appropriate financing or a sizeable local energy market, prices for sustainable energy equipment will remain high.

ADEL-Sofala regards improved energy supply as a very important tool for poverty reduction. In Sofala, access to energy is generally limited to firewood and charcoal. Electricity is non-existent in most areas and access to alternative energy sources is rare. Families, especially women, use daily several hours for collecting fuel wood. Further it is an increasing conflict over access to diminishing wood resources, between household use and production of charcoal for sale out of the community. New innovative systems therefore have to be piloted.

#### Development goal, expected outcomes and indicators for 2009-2011

Development goal:

Improve accessibility of sustainable energy services to the poor and low-income communities in Sofala.

Expected outcome 1:

Involved local communities have a platform to discuss and raise local energy and development issues

Indicators:

- 1 Three Local Energy and Development committees are established and operating in three districts of Sofala
- 2 Three Energy Centres are established and in use as meeting points for interested public
- 3 Three local energy and development plans, including baseline studies on energy consumption, are produced
- 4 Local energy groups are established on sub administrative level, and are involved in disseminating of good practices, in coordination with the three energy centres
- 5 Families, local community authorities, associations and other relevant stakeholders are reached by information and trainings

Expected outcome 2:

Sustainable energy technologies are available in the target area, and local sustainable energy projects are implemented

Indicators:

- 1 Three Energy Shops are established and in function, providing or introducing at least 5 new energy products to the community
- 2 The Energy Shops are able to revolve its stock of energy products from sales income
- 3 Three Energy Funds are established and benefiting individuals and small associations
- 4 Various sustainable energy technologies are promoted and are accessible to families and institutions through the centres

Expected outcome 3:  
Schools are actively involved in dissemination of sustainable energy solutions

Indicators:

- 1 Five to ten schools from each district have participated in the project, and become important local stakeholders for sustainable energy promotion
- 2 Adapted and targeted educational material is developed and dissemination outside the Energy Centres targeted district have started
- 3 Teachers/school's personnel have attended activities and trainings organised in coordination with the energy centres
- 4 Involved schools have formal groups to take action for energy efficiency and increased use of renewable energy

#### Time period for scrutiny

Even if the project document is for 2009-2011, we also include 2008, as that was the first year of the project. This will give us a more complete picture.

#### Components/ aspects in focus for the evaluation

Strengths and weaknesses of systems, structures and forms of organization related to the project.

Cooperation and communication between the various stakeholders of the project.

The selection of technology solutions presented by the project.

### **Stakeholder involvement**

Those who will be involved in the evaluation as respondents, informants or participants (the project committee, beneficiaries, district and local government officials, ADEL staff) must be informed by the Evaluation Manager in due time about the evaluation, its purposes and possible consequences, when it will take place, and how they will be involved in the various stages of the evaluation. The Evaluation Manager (or the evaluation team?) must agree with them when it is most appropriate for them to contribute.

The evaluators should respect human dignity and worth in their interaction with all persons encountered during the evaluation, and do all in their power to ensure that they are not wronged.

### **Evaluation questions**

#### Effectiveness

Has the project achieved its objectives or will it do so in the future?

To what extent have the identified changes been caused by the project rather than by factors outside the project?

What are the reasons for the achievement or non-achievement of objectives?

What can be done to make the project more effective?

#### Impact

What are the overall effects of the project (intended and unintended, long term and short term, positive and negative) on people, institutions and the physical environment?

What do beneficiaries and other stakeholders affected by the project perceive to be the effects of the project on themselves?

To what extent does the project contribute to capacity development and the strengthening of institutions?

To what extent can identified changes be attributed to the project? What would have occurred without the project?

### Relevance

Is the project consistent with the livelihood strategies, needs and priorities of its target group?

Is the project well in tune with the development policies and administrative systems of the Mozambican government at national, regional and local levels?

Is the project a technically adequate solution to the development problem at hand?

Does it eliminate the main causes of the problem?

Do proposed innovations have a potential for replication?

Is the project consistent and complementary with activities supported by OVE/SEALAS?

### Sustainability

Will the benefits produced by the project be maintained when support from NNV is withdrawn?

Is the project supported by local institutions and well integrated with social and cultural conditions locally?

Are requirements of local ownership satisfied? Have the stakeholders participated in the planning and implementation of the project?

Are relevant institutions characterized by good governance, including effective management and organization?

Is the technology utilized in the project appropriate to the economic, educational and cultural conditions in the project area?

Is the project compatible with a sustainable use of natural resources?

### Efficiency

Can the costs of the project be justified by the results?

What measures have been taken during planning and implementation to ensure that resources are efficiently used?

Could the project have been implemented with fewer resources without reducing the quality and quantity of the results?

Could more of the same result have been produced with the same resources?

Can improvement of the cooperation and communication between the various stakeholders result in higher efficiency?

## **Recommendations and lessons**

How to improve weaknesses of systems, structures and forms of organization related to the project.

How to improve cooperation and communication between the various stakeholders of the project.

Which technology solutions to select for presentation in the project.

## Methodology

The evaluation must be carried out systematically and with due concern for factual accuracy and impartiality, and must use sound and transparent methods of observation and analysis. Methods and resources for data collection and analysis must be regarded as appropriate. Specifically, the evaluation team must take into account the gender aspect wherever relevant in their work and in their reporting.

## Work plan and schedule

The evaluation team is to start their work on 20 October and end their work on 30 November.

The total assignment is assessed to be 4 days in field. An indication of how to distribute the available time is as follows:

Preparation phase (reading of documentation, planning the whole evaluation process, making appointments)	20%
Implementation phase (stay in Maringue, interviews with all stakeholders)	60%
Winding-up phase (writing, presentation of draft report to stakeholders (seminar))	20%

## Budget

DESCRIPTION	Total
Evaluators' fee	16.363.63 NOK
Transport, accommodation and other direct costs for the evaluators	6.945.45 NOK
Transport, accommodation and other direct costs for ADEL	10.100.00 NOK
<b>TOTAL</b>	<b>33.409.08 NOK</b>



## Annex 4: List of Documents

1. Project Document
2. Project Agreement ADEL/NNV
3. CLED Maríngue Activity Report 2009
4. Progress Report 2010
5. SEALAS Project Report
6. Energy Service
7. Other information material

<b>Description</b>	<b>Place</b>	<b>Participantes</b>
<p>1. Workshop – Involved partners (OVE / ADEL / NNV and Mozambican Government discuss about charcoal)</p> <p><i>Presentation:</i></p> <ul style="list-style-type: none"> <li>- Dag Harns</li> <li>- Bjarke Ramboel</li> <li>- Rodolfo Assane</li> <li>- Ndabanga Mauricio</li> <li>- Amaral Seva – Stoves</li> <li>- Silvestre dos Santos –</li> </ul>	<p>ADEL Sofala Office</p> <p><i>Organization</i></p> <p>NNV</p> <p>OVE</p> <p>ADEL Sofala</p> <p>DPCA - Environmental provincial Directorate</p> <p>Energy and Mineral Resources Directorate</p> <p>Forest and wild life</p>	<p>ADEL Staff, OVE project advisor, NNV partners, Government representatives.</p> <p><i>Subject</i></p> <p>Energy Services</p> <p>Is Charcoal the future?</p> <p>Contribution of ADEL Sofala on Natural Resource management</p> <p>Experience of natural Resources Managements</p> <p>Natural resources managements tools</p>
2. Meringue Energy Diagnostic	Maringue	SEALAS
3. Base line study	Maringue	GTZ / AMES
4. Sustainable Energy inquiry	Maringue	SEALAS

## Annex 5: Questionnaire

### QUESTIONARIO

#### Beneficiários Directos do Projecto

1. Como mede a contribuição do Projecto para o aumento do conhecimento sobre a promoção do meio ambiente ao nível local?

Muito Relevante	Relevante	Não relevante

Porquê \_\_\_\_\_  
\_\_\_\_\_

2. Qual é a contribuição do Centro de Energia para a preservação e uso sustentável dos recursos naturais (uso da biomassa) ao nível comunitário?

Muito Relevante	Relevante	Não relevante

Porquê \_\_\_\_\_

3. Que acha do apoio técnico que recebe do Centro e do CLED para a promoção de fogões, viveiros comunitários, ou outros meios de energia disponibilizados no âmbito do Projecto?

Muito Relevante	Relevante	Não relevante

Porquê \_\_\_\_\_  
\_\_\_\_\_

6. 4. Qual é o contributo do Projecto para a melhoria da sua vida como beneficiário do mesmo?

Muito Relevante	Relevante	Não relevante

Porquê \_\_\_\_\_

7. Após o início da implementação do projecto o que é que mudou na sua vida e da sua família?

Como beneficiário directo o que é que gostou do Projecto? \_\_\_\_\_

- a) O que não gostou? \_\_\_\_\_

8. Acha que o Projecto deveria continuar mesmo sem apoio da ADEL e NNV? \_\_\_\_\_

9. O Projecto foi importante para si? Porque? \_\_\_\_\_

10. Gosta dos Resultados do Projecto? \_\_\_\_\_

11. Antes do início do projecto foram claramente explicados sobre a sua natureza, objectivos e os resultados que deveria obter?

12. Como é que recebeu o Projecto? Concorda com os critérios de selecção das pessoas que beneficiaram dele? \_\_\_\_\_

13. Os beneficiários participam com alguma contribuição no Projecto? Qual é? \_\_\_\_\_

14. Após o início da implementação do projecto o que é que mudou na sua comunidade? \_\_\_\_\_

15. Sentiu algum choque social ou cultural entre o projecto e a comunidade? \_\_\_\_\_

### Administração Local

1. Como é que o Governo Distrital avalia a criação de Centros de Energia olhando para os benefícios que a população local teve ou podia ter?

2. Que percepção o Gov. Local tem sobre a importância de promoção de meios alternativos de uso de energia para além da tradicional biomassa (lenha e carvão)

3. Que tipo de apoio o Gov. Local da(eu) ao projecto?

4. Como avalia o apoio do Projecto em termos de transferência de tecnologia quer para a comunidade e especificamente para os funcionários públicos ao nível do Distrito?

Muito Relevante	Relevante	Não relevante

Porquê \_\_\_\_\_

5. Nos contactos que a administração tem com as populações ou líderes tradicionais qual é o feedback que recebe deles sobre a iniciativa da criação de centros de energia sustentável?

Muito Relevante	Relevante	Não relevante

Porquê \_\_\_\_\_

6. Se o Projecto tivesse que ser expandido e até mesmo consolidado nesta região quais são as mudanças de abordagem que gostaria de ver?

7. Como mede a contribuição do Projecto para o aumento do conhecimento sobre a promoção do meio ambiente ao nível das populações locais?

Muito Relevante	Relevante	Não relevante

Porquê \_\_\_\_\_

8. Acha que o Projecto constitui um instrumento para apoio na materialização dos objectivos da agenda distrital ou provincial na área de energias renováveis e na promoção do meio ambiente de uma forma geral?

Muito Relevante	Relevante	Não relevante

Porquê \_\_\_\_\_

9. Qual foi o contributo do Projecto para a redução do problema de uso não sustentável dos recursos naturais?

<b>Muito Relevante</b>	<b>Relevante</b>	<b>Não relevante</b>

Porquê \_\_\_\_\_



Office of one of the NRMCs (Samater)



Community of Ntundankulo



Project Beneficiary (Ntundankulo)