BUSINESS MODELS FOR ENERGY ACCESS
COLOPHON

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ETC/EASE and all EASE partners, Marieke van der Zon, Arda Riedijk

Index

EASE Knowledge Base

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EASE Knowledge Base

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All photos are ETC copyright unless otherwise specified.


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GENERAL INTRODUCTION

Background and purpose of this publication

Starting in 2009, ETC has been organising a systematic training and coaching trajectory in order to build capacity on private sector cooperation and business development services. Introductory training provided by the International Training Centre of the ILO (ITC/ILO) marked the first step in this trajectory.

Five EASE partners took part in the training – Energética from Bolivia, GERES from Cambodia, MFC Nyetaa from Mali, TISTEDO from Tanzania, and ENDA from Senegal. As a follow-up to the ITC/ILO training, each participant developed an action plan, identifying the challenges encountered in their private-sector-related work, and for which they would need expert coaching. Triodos FASET provided the necessary follow-up coaching for the partners.

The final phase of this trajectory consisted of three trainees, Marieke van der Zon, Arda Riedijk and Mayte de Vries, going to partner countries, Mali, Tanzania and Vietnam respectively, to research the business development services (BDS) within the projects and possible BDS providers that could be linked to the project in the future. Their research has been used as background information for this brochure.

This publication is the final product of the BDS trajectory to strengthen private-sector cooperation in the rural energy sectors. It aims to show the strategies and activities that EASE partners in Bolivia, Cambodia, Laos, Mali, Senegal, Tanzania, Uganda and Vietnam are implementing to stimulate commercial access to modern energy in the rural areas of their countries. These strategies and activities specifically aim to remove obstacles in rural energy value chains, and to improve the availability of business services.

Context of the EASE programme

EASE (Enabling Access to Sustainable Energy) is a network of 19 partners (10 key members and 9 project partners) in eight developing countries that aims to scale up energy access for the poor through sustainable local business models. The EASE partners believe that, in any rural area, people should be able to get the energy services they need on a commercial basis from a local supplier. Following this vision, the partners focus their activities on facilitating the growth of rural energy sectors and on improving business-enabling environments, including the availability of business development services.

In the EASE vision, development cooperation organisations should endeavour to contribute to overcoming obstacles in local markets through short-term interventions, but without becoming part of these markets. In addition, interventions should be based on a clear understanding of the realities of local energy markets. ETC-Energy, a department of the Netherlands-based ETC Foundation, facilitates the EASE network and the cooperation and communication among its partners. A part of the EASE vision is the focus on BDS.

What are BDS? Overview of types.

In any well-functioning business environment, a variety of formal, informal, government and non-profit sector providers offer business development services to entrepreneurs. Specialised companies in the formal sector are most visible. These include accounting bureaus, legal offices and printing companies. Many BDS providers also exist in the informal sector. Although these providers are less visible than the formal ones, their products are very important for the development of small enterprises. Their services range from equipment repairs to financial start-up assistance, and from promoting products to potential customers to providing small enterprises with ideas on new products they can sell.

In both the formal and informal sectors, embedded service operators also exist. These operate in the same value chain as the receiver and offer services in addition to their normal products. Examples of embedded services are design advice offered by a retailer to a producer and training received as part of equipment purchase. The figure below shows the role of BDS in a typical rural energy value chain.

Energy practitioners

This brochure will enhance your understanding of our projects and our approach, which has a strong focus on business development models.

Researchers

We offer you a wide range of examples of how access to energy can be created and enhanced in practice.

Donors

The results of your contributions are visible in this publication, and it highlights exactly which products have been developed.

Value of the EASE network and this publication for our stakeholders

Main partners

We offer our main partners the possibility to share knowledge and help them to achieve their goals of energy access for all.

Project partners

ETC offers a network, business-related tools and worldwide experiences for rural energy entrepreneurs.

Entrepreneurs / technicians

We offer training, manuals and other material for a range of management and technical aspects of your business.
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Legend to the product market combinations
- Activities or tools developed by project partners
- Permanent business development service providers that have added value for the project, or additional services that are offered by actors in the supply chain
- Actors that operate within the supply chain
- Secondary Market supply chain

Links project intervention to the recipient of the activity
- Links business development service providers to the relevant actor in the supply chain
- Shows the direction of product flow and how they reach the end-user
- Shows the point in the supply chain where embedded services are offered
- Shows the direction of product flow in the secondary supply chain and how they reach the end-user
**Country facts**

<table>
<thead>
<tr>
<th>Country name</th>
<th>Plurinational State of Bolivia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>1,098,581 sq km</td>
</tr>
<tr>
<td>Population</td>
<td>9.9 million</td>
</tr>
<tr>
<td>Rural population</td>
<td>6.6 million</td>
</tr>
<tr>
<td>Life expectancy</td>
<td>67 years</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>$ 4,600</td>
</tr>
<tr>
<td>Currency</td>
<td>Bolivianos (BOB), $ 1 = 6.82 BOB</td>
</tr>
</tbody>
</table>

**Energy facts**

- National electricity reach: 71.5%
- Rural electricity reach: 38%
- Modern cooking fuels: 68.7%
- Rural modern cooking fuels: 29.2%

In Bolivia, the EASE programme works with two partners: our main partner is Energética, and one project is implemented by Tecaltema. The project by Tecaltema is working on the standardisation of biogas installations and strengthening its promotion in rural Bolivia. Energética has projects on grid-densification, supporting small and medium enterprises in the solar sector, productive use of renewable energy and an evaluation of mini-grids.

Projects Bolivia:
1. Biogas installation promotion by Tecaltema
2. Grid-densification by Energética
3. Supporting micro-enterprises in solar system maintenance by Energética
4. Productive uses by Energética
5. Evaluation of mini-grids by Energética
**Biogas installations - Strengthening and promotion**

*By Tecaltema in Bolivia*

**Market chain actors**

Biogas digester parts are bought by Tecaltema in various hardware stores, and these are then installed by their technicians. In order to broaden their reach, Tecaltema decided to cooperate with SIE, a solar enterprise, to widen their range of customers. SIE had been one of the entrepreneurial partners in the MEM (supporting Micro Enterprises for solar system) project that Energética had implemented. Further, an explicit manual for their installation was developed in order to assure comparable quality of installation by different technicians. Tecaltema is now able to provide in-house training for new distributors and technicians. They have demonstration kits available for each category of model. The standardisation has contributed enormously to the speed of delivering an installation ready to use, and also to the quality of services rendered.

**Main market bottlenecks**

The main bottleneck within the biogas market for this specific project was the lack of a promotional and distributional channel for the Tecaltema products. Further, Tecaltema’s knowledge of promotion and enterprise development needed strengthening to reach additional potential customers. By reaching out to SIE, and also developing their capacity, the project was able to develop a second distribution channel and reach more customers. Further, there were no clear standards for the Tecaltema biogas digester, and the project interventions focused on supporting Tecaltema to develop these.

**Business development service provider**

Business development service provider

**Promotion of biodigesters**

Promotion of biodigesters

**Hardware stores**

Hardware stores

**Technical advice**

Technical advice

**Tecaltema**

Tecaltema

**AGRO BIOGAS**

AGRO BIOGAS

Promotes all sorts of agricultural products

**SIE: Solar Distribution Enterprise**

SIE: Solar Distribution Enterprise

**TECALTEMA**

TECALTEMA

Development of a range of manuals

**Project interventions**

Project interventions

**Energética: Coaching on standards for biogas digesters**

Energytica coached Tecaltema in developing standards for three categories of biodigesters: family, semi-industrial and industrial. Each of these categories was further subdivided into large, medium and small, and dimensional criteria were developed. Further, an explicit manual for their installation was developed in order to assure comparable quality of installation by different technicians. Tecaltema is now able to provide in-house training for new distributors and technicians. They have demonstration kits available for each category of model. The standardisation has contributed enormously to the speed of delivering an installation ready to use, and also to the quality of services rendered.

**Energética: Promotional training and campaigning**

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**Energética: Enterprise development training**

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**Ease interventions**

**Coaching on standards**

Energética coached Tecaltema in developing standards for three categories of biodigesters: family, semi-industrial and industrial. Each of these categories was further subdivided into large, medium and small, and dimensional criteria were developed. Further, an explicit manual for their installation was developed in order to assure comparable quality of installation by different technicians. Tecaltema is now able to provide in-house training for new distributors and technicians. They have demonstration kits available for each category of model. The standardisation has contributed enormously to the speed of delivering an installation ready to use, and also to the quality of services rendered.

**Manuals**

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**Promotional training**

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**Enterprise development training**

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For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/

**Short description of market background**

Biogas in Bolivia is becoming increasingly popular; various family-sized models have been introduced. Notably, GTZ has started a large programme that has wide support. Tecaltema is a small company that has entered this market and faces the challenge of meeting large demands for its products without the quality of the installations dropping.

**Project partner**

Tecaltema

**Project duration**

6 months

**Project status:**

Completed

**Costs**

Pilot phase: € 8,000

**Total Budget:** € 17,967

**Other contributions:** € 8,000

**Target**

46 biogas installations active

70 technicians trained and working

230 people having access to modern energy

For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/
**Electricity grid-densification**

*By Energética in Bolivia*

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**Market actors**

The electricity distributors, such as ELFEC, usually react to large tendering procedures issued by the various prefectures. They buy their supplies from a range of large-scale hardware suppliers. These utilities usually have their own technical staff that assure the continuance and quality of services. This project aims to include those end-users who live near the grid, that is within around 300 metres of the existing grid, but for some reason have not yet been connected. The intention is to include them as part of grid-densification and in extensions to the existing grid.

**BDS providers working in the market chain**

Here, the Prefectures of Cochabamba and Oruro are considered service providers. In the first phase of the project, the Prefecture of Cochabamba was included, and the second phase aimed for replication in Oruro. As service providers, the prefectures provide the needed funds and support plus a broad knowledge of electricity networks. They can finance extension or densification projects. Local consultants are specialised in electrical engineering, rural electrification planning, socioeconomic issues and geo-referenced maps.

**Explaining the main bottlenecks**

The government has increased its attention to grid extension or densification projects. Local consultants are involved in implementing grid extension and densification is of strategic importance. Energética will continue to invite them to the dissemination workshops in order to challenge them to follow the example of ELFEC.

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**Ease interventions**

**Training material for site selection**

External consultants, with support from Energética, have developed various training packages for the staff within the prefectures. These were used during workshops, and a final workshop was organised for the dissemination of training materials and the results of the different studies by the consultants. Participants consisted of other interested prefectures and electricity distributors. This dissemination of knowledge has led to integrating the identification approach into some of the strategies of electricity distributors such as ELFEC. During the first phase they were able to realise 2000 connections and they have 3000 connections planned for a second phase.

**Investment portfolios**

The main challenge of the prefectures in reaching the target group of unconnected end-users, living near the main grid, is the lack of knowledge on the numbers of potential users and the costs involved. Energética, with support from external consultants, has developed a strategy to reach these people, including calculations for the necessary investments and payback terms. Given that this ‘investment portfolio’ is not a blueprint for all prefectures, a second replication project has been undertaken in Oruro, taking up the lessons learnt in the first phase. Energética aims to upscale the approach to other interested prefectures.

**Future challenges**

An initial challenge that has been and will be encountered in each phase of the project is the signing of a convention with each specific prefecture. This lays down the foundations for future investments based on the results of the project.

In replication to other prefectures, Energética risks the challenge of changing personnel or changing responsibilities. In the case of Cochabamba, this has been encountered on several occasions and has led to a small delay in project implementation.

The main role in the first phase for Energética with the Prefecture of Cochabamba was to coordinate the entire project and this involved several external consultants. These consultants were giving advice to the various departments. One of the lessons learnt was that using external consultants is not a sustainable method. For the second phase, in Oruro, the decision was taken to explore the possibility of ‘buddying’ each consultant with someone in the department and directly sharing knowledge. Further, the consultants selected came from Oruro which should help ensure future sustainability.

In implementing the investment portfolios, a major challenge, especially important in the construction phase, will be to involve the electricity distributors. They will continue to play an important role in rural electrification projects and, therefore, involving them in implementing grid extension and densification is of strategic importance. Energética will continue to invite them to the dissemination workshops in order to challenge them to follow the example of ELFEC.

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**Short description of market background**

The national grid in Bolivia does not reach all provinces, and therefore they need support to extend the network to reach every household.

**Project partner**

Energética

**Project duration**

1.5 years

First province

Second province

**Costs**

<table>
<thead>
<tr>
<th>Total Budget:</th>
<th>€ 38,780</th>
</tr>
</thead>
<tbody>
<tr>
<td>First province</td>
<td>€ 36,310</td>
</tr>
</tbody>
</table>

**Target**

10,000 families are identified to be connected to the electricity grid through grid extension or densification in Oruro and Cochabamba.

60,000 People have access to modern energy

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For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/
Energética followed three phases in completing the project. In the first phase, a needs assessment was conducted to identify the specific training needs of the technicians. In this first phase, the training is mainly technical. In the second phase, it will focus more on customer relations and marketing skills. Energética staff have developed the material and are in charge of providing the training.

Main market bottlenecks

The main bottleneck was that technicians did not have any commercial skills to run a business by themselves. Primarily, they had technical skills, and they therefore needed to adopt a more competitive and marketing minded approach to providing their services.

During the first phase, the staff of Energética were trained to train technicians on entrepreneurial skills. The second phase consisted of implementing the training and supporting the technicians in the third phase. Energética developed a curriculum with the Juan 23 Technical School to maintain the quality of technicians, and continued to support them in becoming micro-enterprises.

Curriculum for technical school

Energética has developed a curriculum for the Juan 23 Technical School to maintain the quality of technicians. This also ensures the sustainability of the knowledge and training developed during the project.

Coaching on entrepreneurial skills

Technicians are coached by Energética staff to support them in moving towards operating independently. The coaching mainly focuses on developing a sound business model.

Entrepreneurial training material

In the first phase, a needs assessment was conducted to identify the specific training needs of the technicians. In this first phase, the training is mainly technical. In the second phase, it will focus more on customer relations and marketing skills. Energética staff have developed the material and are in charge of providing the training.

Definition of a business model

The technicians are contracted for a period of four years after which they need to find their own way. None of them have a strategy for this second phase. Energética focused on identifying the potential market for these technicians in turning into micro-enterprises. Another important aspect of the project is profiling the individual technicians to identify the ones with entrepreneurial potential. Based on this information, a business model for a solar system maintenance micro-enterprise was developed.

Test marketing new products

The awareness of technicians is raised as to the possibility of selling consumer goods such as DVD players, TVs and so on. This was first test-marketed by Energética.

Organisation of exchange meetings

A national network that organizes annual meetings, exchanges and the publication of a newsletter is of vital importance to the sustainability of the micro-enterprises. This will strengthen and continuously improve them. It will be a challenge to find funding for such a network.

Awarding certificates

Technicians that participate in the project are awarded a certificate if they have achieved satisfactory results. This certificate has been developed by Energética.

Future challenges

A challenge is that the technicians do not have sufficient capital to buy large amounts of stock, and therefore remain dependent on the distributors. As a result, they only get paid in the form of commission and therefore generate very little capital to re-invest in their business.

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**BOLIVIA**

**Productive uses – Identification of productive use of energy**

*By Energética in Bolivia*

**Market chain actors**

ELFEC is the electricity company that distributes electricity to all households in Cochabamba. They obtain their equipment from local hardware stores, and sell electricity directly to end-users. To encourage the productive use of electricity, the project cooperates with energy equipment enterprises, selling appliances such as solar fruit driers, to ensure that there are various options open to end-users.

**Embedded services**

ELFEC: electricity distributor

Promotional activities

End-Users: RURAL MICRO-CREDIT ORGANISATION: Provide loans for end-users

Energy equipment enterprises

Secondary Market Chain

Embedded business development services

Primary Market Chain

Business development service provider

Project Interventions

**Explaining the main market bottlenecks**

Many utilities in Bolivia encounter problems due to the limited consumption of energy in rural areas. Potential end-users cannot afford the connection fees or the electricity bills and therefore use very little electricity. Consumption could be increased if more energy was used for productive ends. The awareness of end-users therefore needs to be raised in using energy for productive goals. Demonstrating different options could increase energy consumption levels and also incomes.

**Capacity building on promotional activities**

Energética is supporting ELFEC with training on how to promote the productive use of electricity, and in developing the various possible options. This capacity building only involves the ELFEC field staff and is therefore very practical and directed at potential end-users. Energética has developed tool kits that could also be used by other utilities. The capacity building of ELFEC staff is achieved through several workshops. The ELFEC rural offices will be used for the dissemination of promotional materials.

**Design of a micro-credit programme**

To make it easier for end-users to start productive use of electricity, micro-credit is important. Therefore, Energética has developed a programme in cooperation with micro-credit organisations to provide this service to end-users.

**Promotion materials for productive use**

Energy equipment enterprises (selling products such as refrigerators, solar driers, sound systems etc.) have received support on identifying potential rural markets. Energética also supports them in meeting with sub-distributors in their respective regions. Distributors’ information will be made available to end-users through radio spots, newsletters, ELFEC staff and through materials at the rural ELFEC offices.

**Future challenges**

The first phase of this project intends to focus on identifying the obstacles and the factors that could accelerate access to productive use, and how productive use influences the sale of electricity. It takes up the challenge of generating a business model for the development of productive uses in rural areas that could be replicated in other areas.

For more information, visit our websites: [www.ease-web.org](http://www.ease-web.org) and [http://www.accesstoenergy.org/](http://www.accesstoenergy.org/).

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**Short description of market background**

Currently productive use of energy is not promoted by any of the electricity companies. ELFEC, one of these companies, has taken up the challenge to promote use of electricity of productive goals, which will probably increase electricity use and provide a more stable profit for the company.

**Project partner**

Energética

**Project duration**

8 months

**Project status:** Ongoing

**Costs**

Total Budget: € 79,180

Other sources: € 33,450

**Target**

40 types of productive use identified and 20 productive uses implemented

25 ELFEC staff trained and working

25,000 people have been part of the project
**Mini-grid – Evaluation**

*By Energética in Bolivia*

**Market chain actors**

In Bolivia there are formal and informal mini-grids operating. The project focuses on informal mini-grids, whose operators started up in response to the lack of coverage by the formal mini-grids. Families organise themselves and start up such operations, and most such mini-grids provide energy to around 200 to 300 end-users but some up to 1,000. The mini-grid operators get their supplies from local hardware stores and aim to provide end-users with constant electricity. When a problem arises, the end-users turn to the operators for repair.

**BDS providers working in the market chain**

The Prefecture of Oruro wants to play a role in supporting and advising the mini-grid operators on how to overcome obstacles in their path. They are part of the team that gathers technical, economic and administrative information about the mini-grid operations. When the project ends, they support the operators in the formalisation process and in improving the quality of services.

**Main market bottlenecks**

The mini-grid operators encounter several problems. They have limited technical knowledge and therefore cannot provide the expected quality of service. Some do not have the financial means to expand or maintain their system, and some encounter administrative limitations linked to calculating tariffs or periodical overviews. In the new electricity law, there is an option to formalise and recognise these operators but, for this to work, it is necessary to have a clear characterisation of these actors in order to identify ways to support them in this process.

**Evaluation interventions**

The evaluation of the mini-grid operators will mainly focus on ways to improve the quality of services to the final end-users. This means identifying criteria to measure the minimum expected quality of service, the competences of the operators, their capacity-building needs and also all relevant technical, economic and administrative data. All data gathered will be documented together with their assessment to get a better understanding of the challenges facing mini-grid operators. It will also contain recommendations for the Prefecture of Oruro, such as grouping the operators by region or strengthening only certain ones of them. All activities will be undertaken by a mixed team involving Energética staff and staff from the Prefecture.

**Improvement strategies**

Using the information gathered during the evaluation, this intervention intends to set a normative design for the mini-grid operators. A standardised set of criteria will be developed focusing on size categorization and an operation model. Having such a standardised set of criteria for this sector will strengthen the position of operators and improve their chances of becoming formal operators.

**Peer-to-peer training**

Energética will provide mini-grid operators with technical, economic and/or administrative training in such a way that they will learn from each other. A newsletter will also be produced to share experiences.

**Future challenges**

The project is still ongoing and it is too early to judge future challenges. The project intends to identify those factors that affect the sustainability of the mini-grids, the possibilities for increasing the income of operators and how to support the formalisation process for the mini-grid operators.

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**For more information, visit our websites: [www.ease-web.org](http://www.ease-web.org) and [http://www.accesstoenergy.org/](http://www.accesstoenergy.org/).**

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### Short description of market background

The more rural areas are often serviced by micro-businesses that operate outside any legal framework and serve a few hundred customers each. The project aims to evaluate these mini-grids to get a better understanding of that form of business and to ensure better support to these micro-businesses.

### Project partner

**Energética**

### Project duration

1 year

Evaluation

### Project status:

Ongoing

### Costs

**Total Budget:** € 17,779

**Other sources:** € 4,200

### Target

1 mini-grid evaluated

26,500 people have access to modern energy.
The partner in Cambodia, Geres, has implemented one project under the EASE programme. This project is focused on improved cookstoves for producing palm sugar using a model especially developed by Geres.

Projects Cambodia:
6. Improved palm sugar stoves by Geres

Country facts

<table>
<thead>
<tr>
<th>Country name:</th>
<th>Kingdom of Cambodia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area:</td>
<td>181,035 sq km</td>
</tr>
<tr>
<td>Population:</td>
<td>14.8 million</td>
</tr>
<tr>
<td>Rural population:</td>
<td>11.5 million</td>
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<td>Life expectancy:</td>
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<td>GDP per capita:</td>
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<tr>
<td>Currency:</td>
<td>Riel (KHR), 1 = 4,2000 KHR</td>
</tr>
</tbody>
</table>

Energy facts

| National electricity reach: | 24% |
| Rural electricity reach:    | 12.5% |
| Modern cooking fuels:       | 7.5% |
| Rural modern cooking fuels: | 3.5% |
Cookstoves - Improved palm sugar cookstoves

By Geres in Cambodia

Market chain actors
The ceramic production centre provides training to selected stove producers who may then continue their production within the centre after finalising their training. Some have started their own production facilities. They get their materials from hardware stores and the raw materials, such as clay, without charge, usually from a source near their production centre. The producers sometimes sell the stoves directly to end-users, but most sales are through stove installers. The latter have more direct contact with the end-users and place orders with the producers. End-users are producers of traditional stove but would prefer an improved Vattanak stove. They receive a small loan from Geres to help achieve this.

BDS providers working in the market chain
The ceramic production centre supports the stove producers in setting up their own facility and becoming entrepreneurs that can profit from a commercial business. Icoprodac is the Improved Cookstoves Producers and Distributors Association of Cambodia, and producers can become members and profit from quality assurance and fixed price agreements. Ecobiss helps palm sugar producers cover their initial investments in the stoves, which they can pay back with sugar that is then sold by Ecobiss.

Main market bottlenecks
A traditional market chain already existed for palm sugar stoves. However, Geres was able to make the technology much more efficient and produce a better quality of sugar. As a result, the current market chain had to be strengthened and actors trained in the new technology. This meant that all parts of the supply chain had to be supported in order for the stoves to become successful. Installers receive entrepreneurial training to make it possible for them to make a business out of installing the stoves, and to make the market sustainable.

Ease interventions

Stove installation and production training material
The training material is disseminated by Geres to the ceramic production centre which, in turn, trains the stove producers on how to make the Vattanak stoves. A Geres trainer supports the production centre in the training sessions.

Support integration into the stoves association
Geres set up Icoprodac for traditional household cookstoves. They supported its members in incorporating producers and installers of the Vattanak stoves into the association.

Entrepreneurial training material
For those installers that have shown entrepreneurial spirit or potential, Geres has organised training to support them in becoming true entrepreneurs and starting their own facility. They receive a small loan from Geres to help achieve this.

Training-of-trainers material on operation and maintenance
End-users need training on how to operate the stoves. The stoves are complex relative to traditional ones and need additional maintenance. Geres developed a training manual in Khmer with a lot of pictorial information.

End-user survey
Over the entire project period, Geres is undertaking an end-user survey. This helps them improve the current prototype of the Vattanak stove and allows them to improve the training. It also helps them to better support the palm sugar producers in not abandoning their traditional means of income and to diversify their income sources.

Future challenges
The project is still ongoing but several challenges have been tackled. One difficulty in the project has been to identify entrepreneurial installers. Most have limited education and are illiterate. The Vattanak stove had some problems with the clogging of the ventilation system. Fortunately, the R&D unit of Geres has improved the model. A final challenge is the availability of new materials. There have been discussions with the government to find solutions for this.

For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/.

Short description of market background
The palm sugar tree and the artisan production of palm sugar is part of Cambodia’s heritage. Currently, there are 20,000 families nationwide who are engaged in this activity, which involves climbing the palm tree to collect the sap which is then evaporated to extract the sugar. It is usually the poorest in rural areas who are engaged in this activity. Geres has developed a stove that allows this target group to improve their income by using less wood.

Project partner
Geres

Project duration
15 months

First province

Project status:
Ongoing

Costs

Total Budget:
€ 22,905

First province

Target

590 improved palm sugar stoves produced
26 installers and stove producers trained and working
29,500 people have an improved form of productive energy
Laos

Country name: Lao People’s Democratic Republic
Area: 236,800 sq km
Population: 6.9 million
Rural population: 4.8 million
Life expectancy: 57 years
GDP per capita: $ 2,100
Currency: Kip (LAK), $ 1 = 8,000 LAK

Energy facts
National electricity reach: 59%
Rural electricity reach: 44%
Modern cooking fuels: 2.6%
Rural modern cooking fuels: 0.2%

In Laos, our partner is LIRE, and they implement one project under the EASE programme. The project focuses on pico-hydro systems that can be used to generate electricity for households.

Projects Laos:
7. Innovation and capacity building in the pico-hydro sector
Market chain actors
Provincial and district town shops obtain their products from Vietnamese or Chinese suppliers who transport the goods across the borders without registration, making the pico-hydro sector an informal one. The products are then sold on, on demand, to village shops that eventually sell them to end-users. Various spare parts and additional products that can be attached to the hydro system can be found in district towns and occasionally in village shops. Newly introduced within the project is an electronic load controller that helps to provide electricity of better quality and more safely.

Embedded services
In each district, shopkeepers have their own network of technicians that provide repair and maintenance services. However, they only repair hardware and do not give advice on the installations. LIRE has therefore trained several government employees to become technical advisors that can give paid advice to households on the installation of such systems.

Main market bottlenecks
The main difficulty with the pico-hydro market is the fact that it is an informal market. Safety, quality and after-sales services are therefore virtually nonexistent. In response, the project is trying to educate shop owners on providing advice and also works with government advisors to reach end-users. They have also introduced new side products, such as the electronic load controller, to ensure a more constant energy supply.

Testing an electronic load controller (ELC)
An ELC was tested in some households to assess the advantages and see if it needed improvements. This was done by LIRE in cooperation with the university based in Vientiane.

Technical training material for shopkeepers
Shopkeepers, mainly from the larger district shops, received training from LIRE to develop their knowledge on the technical aspects of pico-hydro systems and related products. As a result, they are now able to recognise better quality and to give better advice to their clients.

Installation manual
An installation manual has been prepared by LIRE to give district shopkeepers and government technical advisors greater knowledge on how to improve installations of pico-hydro systems. The manual has also been disseminated to some village advisors to ensure that knowledge reaches the end-users.

Future challenges
One of the main challenges facing the project is the sustainability of the technical advisors. In Laos, it is very hard to build up trust and therefore it will be a long time before villagers are willing to trust the advisors and pay for their services. LIRE is now working on promotional packages for advisors so that they can demonstrate a certain quality.

For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/.

Short description of market background
Small and very small hydropower operations have received very little attention from the government, multilateral organisations and NGOs. Yet, pico-hydro (<5 kW) is very common in remote rural areas, fully market-driven and provides many people with electricity.

Project partner
LIRE

Project duration
2 years

Costs
First province
Additional districts
€ 13,850
€ 75,600

Total Budget:
€ 89,450

Target
350 pico-hydro installations sold, 3,000 installations improved
45 shop owners and 12 technicians trained and working
27,000 people have access to improved energy

Project status:
Completed

Additional districts

Total Budget:
Country facts

<table>
<thead>
<tr>
<th>Country name:</th>
<th>Republic of Mali</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area:</td>
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<td>GDP per capita:</td>
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<tr>
<td>Currency:</td>
<td>West African CFA francs (XOF), $1 = 510 XOF</td>
</tr>
</tbody>
</table>

Energy facts

| National electricity reach: | 17.4% |
| Rural electricity reach:   | 3.7%  |
| Modern cooking fuels:      | 0.2%  |
| Rural modern cooking fuels:| 0.2%  |

Projects Mali:
8. SMEs energy access
9. PCASER rural electrification
10. Kerosene cookstoves
11. Improved cookstoves
12. Multifunctional platforms
13. Mainstreaming energy
Electricity – Supporting small and medium enterprises

By MFC in Mali

Market chain actors

The market chain in which this project operates is extensive. On the national level, the Multifunctional Platform and generators are sold by distributors to hardware stores that then work with retailers in the district towns. They sell the products to entrepreneurs who have, or are starting, a business for battery and/or phone charging and mini-grids. The equipment is often installed by independent technicians linked to the retailers, or by a technician known to the entrepreneur. Services are offered to end-users who want to use electricity in their homes or to clients that want to charge their phone.

BDS providers working in the market chain

In addition to technicians who are linked to the retailers and therefore part of the value chain, there are also local village technicians that offer installation, repair and maintenance services for a broad range of products. The small entrepreneurs offering charging or electricity services sometimes use print shops for the production of promotional material (business cards) in order to expand their client base.

Main market bottlenecks

The main challenges in this value chain are the limited marketing capabilities at the top of the chain, and the lack of technical and business skills lower down the chain. The project has developed a practical guide involving technicians and entrepreneurs to combine business and practical knowledge.

Ease interventions

Profiles of energy operators

As the first step in the project, MFC developed profiles of a number of energy entrepreneurs to gain an understanding of the challenges they face and to learn from their experiences. Materials have been developed on safety issues, business administration and promoting productive use of electricity.

Training for technicians and entrepreneurs

MFC organized training sessions for technicians and entrepreneurs where they worked with them on safety issues and business planning (financial and additional activities). These sessions were used to share the tools developed based on the profiles and to develop the initial version of a practical guide for operators of the MFP and associated generators.

Practical guide

The practical guide was the result of the first training period. Throughout the various phases of the project, the practical guide has been improved and complemented with forms that can be used by entrepreneurs for administration purposes as an annex. The guide has been appreciated by the technicians and the entrepreneurs, and is used by them in their everyday business practices.

Support to retailers

MFC worked together with equipment retailers as the suppliers to small energy entrepreneurs. The developed practical guide was shared with them, so that they could offer an additional product to their customers. As part of the interaction with retailers, MFC informed them of the potential for energy enterprises in rural areas, and the services they could offer.

End-users

For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/

Profiles on market actors, service providers and project interventions can also be found there.

Market chain

Market chain

Project interventions

Profile of energy operators

Profiles of energy operators

Future challenges

The main challenge of the project is to find a channel that can take over the distribution of the practical knowledge to the energy operators in a sustainable way. This is not easy as the operators are difficult to reach. They work in remote rural areas and, as they operate mostly in the informal sector, there are no official professional associations.

The retailers that were involved in the project were often open to cooperation, but experience has shown that they do not sustain their efforts. This can probably be explained by the fact that only a small part of their income comes from selling equipment for energy installations. They are not sufficiently convinced about the potential market for energy equipment to invest time and money in building up this market.

Through its network in the energy sector, MFC has identified a retailer who specializes in supplying equipment for energy enterprises. This company works with trained technicians, and can also offer training to entrepreneurs. Through his work, the retailer has developed a network of technicians and operators.

In the next phase of the project, MFC will work with him to improve and distribute the practical guide. An exchange with other retailers will be part of the project. This exchange will be an opportunity for them to see that there is a potential market for energy entrepreneurs, and what type of services they can offer alongside the supply of equipment in order to build a satisfied client base.

Short description of market background

The energy situation in rural Mali is characterized by the weak quantity and quality of its energy services. Households mainly use wood, charcoal and petroleum to meet their consumption needs. The market is slowly developing with small informal businesses offering energy services such as phone charging, battery rentals and battery sales.

Project partner

MFC

Project duration

2 years

Pilot

First phase

Completed

Completed

Costs

Total Budget:

€20,211

€23,620

Target

156 multifunctional platforms sold

5 distributors and supplier plus 14 technicians trained and working

4,380 people have access to energy

4,380 people have access to energy

End-users

End-users

For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/
Electricity – Support to formal rural power companies

By MFC in Mali

Market chain actors

The rural power companies who receive subsidies under the PCASER programme coordinated by AMADER, the Malian Agency for Household Energy and Rural Electrification, buy their gensets from foreign suppliers. Once the generator and the grid are installed, households can get connected. Often, people are responsible for the in-house installation themselves, and this work is mostly carried out by village technicians. Maintenance and repair of the electricity network is carried out by technicians of the PCASER operator. Connected end-users can call the technicians if problems occur.

BDS providers working in the market chain

The PCASER operators receive considerable support from BDS providers. One of the most successful products developed under the EASE intervention is a software system tailored to PCASER companies. This system enables companies to establish a client database, run a billing system, monitor payments and educate clients on electricity use. After training by Intersoft, the administrators were soon able to use the system independently.

Innovative solutions

"Facilitate training on simple computer use, and software for administration and client management was developed, as were business management manuals. Based on the visits to pioneering PCASER operators and the problems discovered, small business manuals were made by MFC for PCASER operators with peer-to-peer information about how to run their business."

"Because the first on-the-job training to technicians proved to be very effective, a new training session was organised for a larger number of employers from PCASER entrepreneurs. A first step was made towards the development of a technical and administrative training module to be able to reach the maximum number of PCASER operators."

"The challenge for the fourth phase is to reach many more operators with the successful approach, and to develop a curriculum to accomplish this."

Profiles of PCASERs

The objective of the profiling exercise was to identify the companies’ specific problems, and also ways to address them. Field visits to three pioneering PCASER operators showed that, as well as technical difficulties, the most urgent challenges were problems with client management and client education.

Small business manuals

Based on the visits to pioneering PCASER operators and the problems developed, small business manuals were made by MFC to provide PCASER operators with peer-to-peer information about how to run their business.

"On-the-job training"

Under supervision of a technical expert, training was organised for technicians employed by PCASER operators. They were able to exchange experiences and the tricks of their trade. The training focused on (i) the working principle, maintenance and repair of the generator, (ii) connecting new clients and in-house installations, and (iii) collecting information for billing clients.

Radio spots for client education

Interviews with potential and existing clients showed that many people were either ignorant about the electricity service, or otherwise suspicious of it. A spot in the national language, Bambara, was developed by a communication and marketing agency. This commercial was broadcast during the evening when most people are at home with their families.

Invoicing system

"Without the use of a computerised system, many PCASER operators discovered that it is difficult to prepare and administer the monthly bills for their clients. The Malian company Intersoft developed a professional accounting system tailored to PCASER companies. This system enables companies to establish a client database, run a billing system, monitor payments and educate clients on electricity use. After training by Intersoft, the administrators were soon able to use the system independently."

"Local radio: commercials"

Profiles on market actors, service providers and project interventions can also be found there.

For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/

Profiles on market actors, service providers and project interventions can also be found there.

Short description of market background

Rural electrification serves only 2% of the rural population in Mali. Since 2002, much effort has been made by the government, NGOs and local authorities to enhance access to energy. The creation of AMADER, the Malian Agency for Domestic Energy and Rural Electrification, has established formal electricity providers.

Project partner

MFC

Project duration

4 years
First phase: Completed
Second phase: Completed
Third phase: Completed
Fourth phase: Ongoing

Costs

Total Budget: € 37,772
First phase: € 22,895
Second phase: € 37,772
Third phase: € 27,602
Fourth phase: € 37,772

Target

3,926 households connected to electricity, 358 households connected for productive purposes.
15 PCASER operators, 6 technicians and 6 administrators trained and working
34,272 people have access to energy.
**Cookstoves – Building a sales network for kerosene stoves**

*By Tissina in Mali*

**Market chain actors**
A foreign supplier sells kerosene stoves to Tissina, located in Bamako, the capital city in Mali. Tissina is working on the development of a distribution network by developing cooperation with sales points in other areas of Mali. These sales points buy products from Tissina and sell them directly to customers.

**BDS providers working in the market chain**
TV and radio stations are used by Tissina to promote the kerosene stoves, and to inform a large number of people about them. The radio and TV spots were developed by a specialised communication agency. Tissina also worked with a professional to design the product package. The designer ensured that the package was adapted to the Malian context and is attractive to the potential customers.

**Main market bottlenecks**
The main challenge was that Tissina was only present in the capital, and needed support to develop a sustainable sales channel in rural areas. To overcome this, sales points were identified and training was given to prepare retailers to sell the products, to adequately inform customers and to provide after-sales service. During the project, MFC provided coaching to Tissina.

**Project partner**
Tissina

**Project duration**
1 year

**Project status:**
Completed

**Costs**

<table>
<thead>
<tr>
<th>Pilot</th>
<th>Total Budget:</th>
<th>Own contribution:</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>€883</td>
</tr>
</tbody>
</table>

**Target**
1,400 kerosene stoves sold
45 sales points and sales agents plus 7 technicians trained and working
11,200 people have access to energy

**Ease interventions**

**Organisation of a roadshow**
A roadshow was organised by Tissina, firstly to bring the kerosene stove to the attention of rural customers and to train them in its use and, secondly, to identify and develop cooperation with rural sales points for the stove.

**Basic sales instruction tools**
Tissina developed basic sales instruction tools for their sales points. This tool can be used by the sales points to explain to their clients the benefits and the use of the stove.

**Marketing and after-sales training**
Tissina developed tools for their sales points on sales techniques and after-sales service.

**For more information, visit our websites:**
[www.ease-web.org](http://www.ease-web.org) and [http://www.accesstoenergy.org/](http://www.accesstoenergy.org/)

Profiles on market actors, service providers and project interventions can also be found there.
Market chain actors
Freelance blacksmiths produce metal parts for Katene Kadji. Katene Kadji produces the ceramic parts and assembles the complete product at its factory in Bamako. The project aimed to establish a Katene Kadji dealer in rural Mali who would also assemble the cookstoves and sell them to end-users. In a later stage, the metal parts should also be produced locally by rural blacksmiths.

BDS providers working in the market chain
AMADER has supported Katene Kadji with funds for a truck to transport their cookstoves from the capital to rural clients. Katene Kadji uses a print shop to produce promotional material to increase awareness of the benefits of the product.

Main market bottlenecks
The main problem facing Katene Kadji was that the company did not have any sales points in rural areas. Clients and retailers had to go to Bamako to buy the stoves, leading to high transport costs, and therefore higher stove prices in rural areas. As such, the project focused on identifying rural dealers and supporting them with training on technical, management and monitoring issues.

Market chain

Primary Market Chain

Freelance blacksmiths

Katene Kadji

AMADER: Co-financing for a truck for transport

Identification and cooperation agreement on sales points

Development of a promotional flyer

Provide technical training

End-Users

Project Interventions

Business development service provider

Identification of local Katene Kadji agents

Identification and cooperation agreement on local blacksmiths

Identification and cooperation agreement on sales points

Development of sales training

Development of monitoring tools

LOCAL PRINT SHOP: Provides printing services

Identification of local Katene Kadji agents

AMADER: Co-financing for a truck for transport

Promotion Material

Promotional flyer

Technical training material

Monitoring tools

Ease interventions

Cooperation agreement for sales points
Katene Kadji has developed a standard cooperation agreement for use with rural dealers to regulate the relationship.

Cooperation agreement with local blacksmiths
Katene Kadji developed a standard cooperation agreement with blacksmiths for use at a later stage when the metal parts will also be produced in rural areas. First of all, however, local qualified technicians have to be identified and trained.

Promotional flyer
Katene Kadji has developed a promotional flyer to raise awareness and interest in rural households of the SEWA cookstove.

Technical and sales training material
This training material was disseminated by Katene Kadji in cooperation with MFC, who provided coaching support during the project to the rural dealers, in order to enhance their technical knowledge regarding the cookstove.

Monitoring tools
Katene Kadji developed monitoring tools for their dealers, so as to have insights into the numbers and types of stoves sold.

Future challenges
Important lessons have been learnt in the project. Rather than setting-up a Katene Kadji dealer, Katene Kadji has concluded that it is more effective to develop cooperation with blacksmiths and/or stove sellers that are already present. Further, the lack of visibility of the sales points proved a weakness, with not many people knowing the sales point had been set up. Based on these experiences, Katene Kadji will now focus on developing and strengthening cooperation with a cooperative of local blacksmiths that produce and sell cookstoves.

For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/
Profiles on market actors, service providers and project interventions can also be found there.

Short description of market background
Katene Kadji is a company that has been working with cookstoves for a number of years and sells a lot of products, albeit mainly in Bamako. Since many rural households could also be interested, extending their market is an interesting new line of business.

Project partner
Katene Kadji

Project duration
1 year

Project status:
Completed

Costs
Pilot

Total Budget:
€ 10,644

Other funds:
€ 5,680

Target
800 SEWA cookstoves sold
1 shop owner, 3 dealers and 3 technicians trained and working
6,400 people have access to this form of energy
MFPs - Business models for energy access services through Jatropha

By Mali Biocarburant SA in Mali

Market chain actors
The Malian National Multifunctional Platform is supported by UNDP which funded the installation of MFPs in the area where Mali Biocarburant SA (MBSA) operates. Gensets come from a foreign supplier. MFP management committees are in charge of running the MFPs which are used by the end-users for a wide range of services including battery charging, cereal and maize milling, and rice dehusking. The secondary market chain depicted above shows the chain for Jatropha production. Once harvested, it is bought by the MFPs and other end-users as fuel.

Main market bottlenecks
The main challenge facing MBSA was to further test business models for Jatropha-powered MFPs as energy access services. Various studies and activities were developed by MBSA to research this area and then develop some recommendations. For example, it was concluded that the MFP management committees needed training in operation, maintenance and management. Then, through a participative process, work-plans were developed to ensure the satisfactory functioning of the MFPs.

Economic baseline study
This baseline study was developed by MBSA and used to gain an understanding of the current situation (including services on offer and prices) and ways for the MFPs to increase their income.

Analysis of MFP models
In a market study, various MFP business models, linked to different services and the demand for them, were analysed by MBSA.

Cost-benefit analysis
Based on the different business models identified, MBSA performed a cost-benefit analysis to determine the profitability of energy access services from MFPs.

Training for MFP management committees
Following the baseline study and focus group interviews, the major obstacle found was the lack of information, tools and training for MFP management committees. Forty people were trained on simple agroforestry techniques for Jatropha cultivation, MFP management and technologies and on the corresponding services associated with the MFP.

Coaching MFP management committees
The MFP management committees (often all-women groups) were supported in obtaining legal registration in order to have more involvement with their local council, and so aid integration and harmonisation with other projects and acquire greater visibility for future activities in the region. Finally, MBSA assisted in selecting income-generating activities and designing work-plans for 2010 through participatory workshops.

Future challenges
The current challenge for MBSA is how to upscale the models developed to other areas. Further, it will be a challenge to integrate Jatropha cultivation within smaller production systems. Currently, there are large production centres that cultivate the Jatropha but, since the rural population is spread over a wide area, more and smaller systems should be more effective.

For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/.

Profiles on market actors, service providers and project interventions can also be found there.

<table>
<thead>
<tr>
<th>Market chain actors</th>
<th>Jatropha, as a fuel for the Multifunctional Platforms, is becoming increasingly popular in Mali. The Jatropha is used as fuel in a diesel engine that drives a series of tools including cereal mills and threshers and a battery charger.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project partner</td>
<td>Mali Biocarburant SA</td>
</tr>
<tr>
<td>Project duration</td>
<td>1 year First phase Project status: Completed</td>
</tr>
<tr>
<td>Costs</td>
<td>First phase Total Budget: € 101,625 Other funds: € 47,256</td>
</tr>
<tr>
<td>Target</td>
<td>9 Multifunctional platforms supported 27 technicians trained and working 2,862 people have access to energy through household, social or productive uses</td>
</tr>
</tbody>
</table>

Short description of market background
Jatropha, as a fuel for the Multifunctional Platforms, is becoming increasingly popular in Mali. The Jatropha is used as fuel in a diesel engine that drives a series of tools including cereal mills and threshers and a battery charger.

For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/.
Mainstreaming – Linking local development to value chains

By MFC in Mali

Market chain actors
The value chain in this project is somewhat different from the other projects. Since the project focuses on any energy value chain that could be supported by the local authorities’ development plans, the value chain depicted above is merely an example. All sorts of value chains related to agricultural products can be selected in the project. The most important aspects in choosing which value chains to work with is that they need to have a profound impact on the community and that the use of modern energy services should greatly improve the transformation of agricultural products.

BDS providers working in the market chain
This value chain is supported by various local actors. Their involvement starts with making local development plans for each community. These plans are made in cooperation with local entrepreneurs, cooperatives, NGOs, and CBOs. They support the actors in the value chains with expertise and funds, and become part of the project through involving their members and the local communities.

Main market bottlenecks
The main issue facing the value chains was that there was no attention given to energy needs and climate change in the local development plans. Through awareness-raising and training, MFC tries to make local authorities understand the importance of these issues for communities and to incorporate them in their local development plans. To ensure that the actual needs of the communities are addressed, dialogue between all parties is enhanced since this ensures that the real energy needs are addressed in these plans and are then implemented by all the involved actors.

Ease interventions

Workshop for local authorities, consultants, CBOs
Local communities are supported with the elaboration of local development plans by consultancy firms. Together with other NGOs, MFC organised a training for the consultancy firms as well as the local authorities and CBOs to inform them about development issues related to energy for development, economic growth, health and education.

Selection of energy solutions
In cooperation with all the local actors involved, MFC selected those energy solutions that were best suited to the value chains that are important for each community.

Business development coaching
To support SMEs and cooperatives in the execution of their day-to-day activities and to improve their business knowledge, MFC organises business development workshops.

Thematic workshops
MFC will invite all actors related to a certain value from different zones to exchange on their experiences and to define a common agenda.

Mainstreaming tools
MFC developed tools for local authorities to support them in including energy, gender, and climate change in local development plans.

Workshop on energy, gender and climate change
A workshop was organised and facilitated by MFC for all local energy actors to learn more about energy, gender and climate change, and how they can incorporate these in their own work.

Selection of energy solutions
In cooperation with all the local actors involved, MFC selected those energy solutions that were best suited to the value chains that are important for each community.

Future challenges
This project is ongoing, and the main challenge remains how to go from mainstreaming energy, gender, and climate change, to implementing real projects on the ground that have an impact on the development of community.
In Senegal, our EASE partner is ENDA, who is implementing three projects within the programme: fish-smoking, bakeries and mainstreaming. In the fish-smoking and bakeries projects, an improved oven is introduced to increase effectiveness and create better conditions for the producers. In the mainstreaming project, energy is embedded in the local development plans and value chains are supported.

Projects Senegal:
7. Fish-smoking ovens
8. Improved ovens for bakeries
9. Mainstreaming of energy

Country facts

<table>
<thead>
<tr>
<th>Country name:</th>
<th>Republic of Senegal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area:</td>
<td>196,722 sq km</td>
</tr>
<tr>
<td>Population:</td>
<td>14.1 million</td>
</tr>
<tr>
<td>Rural population:</td>
<td>8.2 million</td>
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<tr>
<td>Life expectancy:</td>
<td>59 years</td>
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<td>GDP per capita:</td>
<td>$1,600</td>
</tr>
<tr>
<td>Currency:</td>
<td>West African CFA francs (XOF), $1 = 510 XOF</td>
</tr>
</tbody>
</table>

Energy facts

| National electricity reach: | 41% |
| Rural electricity reach: | 18% |
| Modern cooking fuels: | 41.7% |
| Rural modern cooking fuels: | 12.7% |
Ovens – Dissemination of improved ovens for fish-smoking

By ENDA in Senegal

**Market chain actors**
The producers of improved ovens get their supplies from hardware stores, which can be found locally close to the producers. They do not only produce the ovens, but also sell them to the end-users. End-users are private companies and women groups that are organised for fish-smoking activities. They are also supported in the actual process of fish-smoking.

**BDS providers working in the market chain**
There are only a few BDS providers active in this market chain because it is a very local one and the procedures are not very complicated. The local government however does play a role in providing an enabling environment for production, trade and transport which is helpful to the producers of improved ovens. End-users have the possibility to use micro-credit if they are unable to pay for the ovens directly.

**Main market bottlenecks**
The project interventions focus on three areas: promoting access to improved ovens for fish-smoking, a better understanding and control by producers and end-users of the market for fish-smoking and, thirdly, the interventions contribute to a better strategy for smoked fish production. This resulted in the activities shown in the above representation of the project’s interventions.

**Market and best practices study**
ENDA has carried out two studies; one to assess the market for improved ovens and one to uncover best practices. This information is disseminated to producers of improved ovens.

**Promotional movie**
In order to support improved-oven producers in the promotion of their products, ENDA is developing a short film on fish smoking.

**Stakeholder exchange meetings**
Given that some women groups and producers are more advanced in their internal organisation and the organisation of their activities than others, exchanges are an effective way to transfer these experiences. The exchanges are facilitated by ENDA, and organised by the women groups and producers themselves.

**Technical assistance**
Since it is important to ensure the quality of the products, both the producers and the end-users receive technical assistance from ENDA.

**Financial development products**
ENDA cooperates with a micro-finance institution in order to be able to provide micro-credit to end-users. Together they develop relevant financial products.

**Future challenges**
The project is still being implemented, but now that more than half the time has passed, it has become clear that there is a large number of areas in which the project could be implemented. The project currently operates on a very local scale and therefore ENDA is developing an upscaling strategy.

For more information, visit our websites: [www.ease-web.org](http://www.ease-web.org) and [http://www.accesstoenergy.org/](http://www.accesstoenergy.org/).

**Short description of market background**
All along the coast, and on the islands, fish-smoking is a regular activity. Most of the people involved in it are women who work together in groups to save costs. They mostly use traditional ovens, but the improved ovens are starting to gain market share.

**Project partner**
ENDA

**Project duration**
1 year
First province

**Project status:**
Ongoing

**Costs**
First province

**Total Budget:**
€ 38,000

**Other funds:**
€ 3,000

**Target**

- 30 Improved ovens sold
- 150 women groups supported
- 375,000 people have access to improved energy
Ovens – Promotion of metal ovens for bakeries

By ENDA in Senegal

Market chain actors

Hardware stores provide the materials for a metal oven producer who is already working in the metal oven business. This producer is interested and capable to produce a new sort of oven. The producer is cooperating with GIPS/War, an umbrella women’s group organisation that retails the ovens to end-users. End-users are generally women groups, private companies and institutions. They are also supported in the use of the ovens, their construction and how to market the metal ovens. Management consultants support the end-users in developing their own bakery businesses.

Main market bottlenecks

There were no commercial producers of ovens yet working with this improved metal oven and therefore, first of all, training on how to construct the oven is necessary. After this, users need information on how to use it. Another important aspect is marketing since the product is not very well known, and promotion and awareness-raising are essential for the success of the project. An additional effect of the project is that, at the same time, end-users are also supported with their bakery businesses, and will thus also be able to improve.

Ease interventions

Construction manual

The production process for improved ovens is only known by a limited number of producers in Senegal. To promote dissemination of the technology and ensure quality production, a construction manual has been developed. This work was undertaken by specialised technical consultants.

User manual

A manual for oven users on the use of the oven was also developed by specialised technical consultants. The practical manual can be used in the day-to-day operation of the oven, and informs the user about hygiene issues, product diversification, maintenance etc.

Marketing manual

How to create a profitable oven baking business? Advice on selling the final products, baked in the oven, is described in a marketing manual. This manuals include advice on investments, bookkeeping, stock, packaging, information to be provided by clients, sales points etc.

Awareness-raising material

The improved ovens are only known in some regions of Senegal. Therefore, awareness-raising with, for instance, local authorities, MFIs and potential producers and operators is important. To address this issue, ENDA has developed awareness-raising material in cooperation with a marketing agency.

Financing options

Some operators may require a loan to acquire an improved oven. ENDA is working with MFIs that offer credit facilities to develop financing schemes adapted to oven operators.

Business training for oven operators

The operators that acquire an improved oven receive training on management and organisational dynamics, as well as technical assistance with production. Ideally, this training should be given by the retailer and, therefore, this intervention is designed in such a way that the role can later by taken over by the retailer.

Future challenges

The major challenge was identifying an oven producer who was willing to play a leading role in building the market for the improved ovens. Progress was delayed as the operator was reluctant to share technical specifications of the technology. To speed progress under the project, ENDA has decided to work with more than one producer, which was the original intention. The next challenge in the project is to find sustainable financing solutions for the acquisition of the improved stoves by end-users.

For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/.

Short description of market background

Traditional bakeries use wood for heating their ovens, but it was identified during the Caravane, organised by EASE, that there is also interest in metal stoves. These stoves can be used for baking bread, pastries and for roasted products.

Project partner

ENDA

Project duration

14 months

First province

Project status:

Ongoing

Costs

First province

Total Budget: € 59,878

Other funds: € 8,000

Target

100 ovens of various types

50 bakeries or individuals provided with metal ovens

350 people have access to energy
Mainstreaming - Linking local development to value chains

By ENDA in Senegal

Market chain actors
The value chain in this project is somewhat different to many of the other projects. Since the project focuses on any energy value chain that can be supported by the local development plans, the value chain depicted is merely an example. All sorts of value chains related to agricultural products can be selected in the project. The most important aspects in choosing a value chain to work with is that it should have a profound impact on the community and the use of modern energy services should greatly improve the transformation of agricultural products.

BDS providers working in the market chain
This value chain is supported by various local actors. Their involvement starts with the making of a local development plan for each community. These plans are made in cooperation with local entrepreneurs, cooperatives, NGOs and CBOs. They support the actors in the value chains with their expertise and funds, and are part of the project through the involvement of their members and the local communities.

Main market bottlenecks
The main issue facing the value chains is that no attention was paid to energy needs, gender and climate change in the local development plans. Through awareness-raising and training, ENDA encourages local authorities to understand the importance of these issues for communities and to incorporate these plans in the local development plans. To make sure that the actual needs of the communities are addressed, dialogue between all the parties is enhanced since this ensures that the real energy needs are addressed by these plans and then later implemented by all the actors involved.

BDS providers working in the market chain

End-users

Project interventions

Energy solution distributor

Identification and description of priority value chains

Tools to mainstream energy, gender and climate change in local development plans

Training of local actors to develop local development plans

Facilitation of local policy dialogue on local development priorities

Support in the elaboration of their local development plans

Guide on business models on energy for local development

Development of local partnerships around priority value chains for increased access to energy

Coaching of local partnerships

Short description of market background
In Senegal, municipalities (local government) have the power to guide decision-making processes and establish development strategies within their municipality. Each municipality develops a local development plan (PLD) which serves as a basis and guidelines for dialogue between donors and the community. Each plan is in place for five years. The subjects of modern energy services, rural entrepreneurship, protection of the environment and climate change are generally ignored in these plans and, therefore, ENDA has started working with local authorities to address these gaps.

Review of existing planification tools
At the start of the project ENDA evaluated the old local development plans as well as the tools used to develop them. This provided insight in how the tools that are used by consultants supporting the local authorities can be improved.

Baseline study
ENDA, together with local consultants, undertook a baseline study in the targeted area to establish the ‘energy profile’ of each rural community.

Description of value chains
ENDA, together with the local actors, identified and described those value chains that are essential for each community and that require modern energy for proper development.

Mainstreaming tools
ENDA developed practical tools for local authorities that would support them in including energy, gender and climate change in local development plans. ENDA also developed a more elaborate manual for the consultancy firms helping communities all over the country.

Training on developing local development plans
ENDA developed a training programme for local actors to support them in the development of local development plans and explain the concepts of energy, gender and climate change.

Support on elaboration of local development plans
ENDA provides extensive support to local actors in elaborating their local development plans to ensure that energy, gender and climate change were included.

Guide on business models for energy
A guide including all the business models that are used for energy solutions will be produced by ENDA to provide users with the possibilities from which to choose their preferred option.

Development of local partnerships
In order to support the use of modern energy in the selected value chains, ENDA facilitates the development of local partnerships for the successful implementation of these energy solutions. Round table meeting will be organised to facilitate dialogue between the local partners.

Coaching of local partnerships
Once local partnerships were formed, ENDA continues to support them with coaching in order to ensure that the energy solutions will be successful in improving the value chain.

Future challenges
This project is still being implemented, but it is clear that the main challenge remains how to go from mainstreaming energy, gender and climate change into development plans, to implementing real projects on the ground that have an impact on the development of community.

For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/.
Country name: United Republic of Tanzania
Area: 947,300 sq km
Population: 41.9 million
Rural population: 31.4 million
Life expectancy: 52 years
GDP per capita: $1,400
Currency: Tanzanian shilling (TZS), $1 = 1,466 TZS

Energy facts
National electricity reach: 11.5%
Rural electricity reach: 2%
Modern cooking fuels: 2.8%
Rural modern cooking fuels: 0.4%

Under the EASE programme, the portfolio in Tanzania consists of the following projects implemented by our partners: a project in which an improved cookstove, made by Philips, was promoted by Pumps International & Solar (17); Umeme Jua was supported in the introduction of LED systems to the market (18); The blacksmiths from Kisangani have developed a sawdust cookstove, and received business development training (19); and finally TaTEDO was supported with training and coaching so as to be better able to support energy entrepreneurs (20).

Projects Tanzania:
17. Pumps International & Solar
18. Umeme Jua
19. Kisangani
20. TaTEDO capacity building on private sector cooperation
Cookstoves - Testing a business model for Philips woodstoves

By Pumps International & Solar in Tanzania

Market chain actors

As the Philips woodstove was new to the Tanzanian market there was no existing market chain. The objective of the pilot was to determine which market chains could be used to reach the targeted customers. The Tanzanian importer Pumps International & Solar bought fifty woodstoves from Philips. It was expected that the stoves would be exempt from import taxes and VAT at the time of their official market introduction, and the stoves were sold at a forward market price. Pumps International & Solar identified civil servants, the working-class, company employees, sub-contract farmers and those receiving stove remittances as the most interesting target groups, and researched market chains for each of them.

BDS providers working in the market chain

Pumps International & Solar received support from a business coach to analyse the test phase results and, based on the final report and further discussions, to identify critical factors, issues and preconditions for continuation into a pilot phase (so as to ensure a commercially viable product line). Related questions such as the role of Pumps International & Solar (distributor, retailer, service/repair), organisational challenges and entering the market with other stoves were also discussed. To promote the woodstove, basic PR material was developed and sent to a print shop for printing.

Main market bottlenecks

The main problem was the price of the test product which was perceived as too high by the target groups, even though the product was very much appreciated (fast-cooking and fuel-efficient). The testing also showed that an after-service service was essential.

Identifying market segments

Based on its knowledge of the market and the characteristics of the product, Pumps International & Solar identified five potential market segments.

Customer perception and satisfaction survey

An in-depth survey was developed by EASE trainee Laura Smeets in cooperation with Pumps International & Solar. Several test regions were selected for undertaking demonstration sessions and focus group discussions.

Identifying distribution channels

Based on the identified market segments, Pumps International & Solar identified distribution channels to reach the customers in those segments.

Training materials

Pumps International & Solar observed that the potential dealers and sales agents in the identified distribution channels needed additional information to be able to market the product to the customers, and to explain to the customers how to use and maintain the product. Therefore, basic sales tools and a practical user-manual were developed.

After-sales model

Efficient follow-up of technical failures and customer complaints about the woodstove is very important for the introduction of the product to the market. Therefore, together with the business coach, Pumps International & Solar reflected on what the after-sales model should look like.

Promotional material

Basic promotional material was developed by Pumps International & Solar to raise awareness about the product and its benefits.

Tax and VAT exemption

To decide on whether to continue, and move from a pilot to a testing phase, Pumps International & Solar investigated whether it would be possible to get the woodstove exempted from import tax and VAT as this would lead to a significant reduction in price.

Future challenges

Before the product can officially be launched on the Tanzanian market, a final version of the woodstove has to be ready for sale. Once the product is ready, Pumps International & Solar has to elaborate the business model that has been developed, including promotion and after-sales services that need to be more rurally-based to better reach the targeted customers.

For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/. Profiles on market actors, service providers and project interventions can also be found there.

### Market chain actors

<table>
<thead>
<tr>
<th>Primary Market Chain</th>
<th>Business development service provider</th>
<th>Project Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philips</td>
<td>Pumps International &amp; Solar Ltd.</td>
<td></td>
</tr>
<tr>
<td>End-users</td>
<td>PRINT SHOP: Design and print posters and flyers</td>
<td>BUSINESS COACH: Focuses on assessing feasibility and requirements for moving on to next phase</td>
</tr>
</tbody>
</table>

### Profiles on market actors

<table>
<thead>
<tr>
<th>Project partner</th>
<th>Project status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pumps International &amp; Solar</td>
<td>Completed</td>
</tr>
</tbody>
</table>

### Project duration

- First phase: 6 months

### Costs

- First phase: €11,000

### Total Budget

- €11,000

### Target

- 50 Philips woodstoves sold
- 300 people have access to energy
Solar – Testing a franchise package for solar LED systems
By Umeme Jua in Tanzania

Market chain actors
Umeme Jua imported its ‘Taa Jua’ LED solar lantern from a Chinese manufacturer. Umeme Jua has developed an extensive network of 65 dealers spread across the country through which its products are sold. Each of these dealers serve their own local network of shops and kiosks. End-users are both households and small and medium enterprises. During this pilot, 1000 solar lanterns were air freighted to Dar-es-Salaam and supplied by Umeme Jua to dealers in the pilot region.

Embedded services
Umeme Jua aims to provide affordable and reliable access to electricity for rural households and SMEs. To further promote such access to solar products in order to improve the livelihoods of rural people, Umeme Jua sees the introduction of low-cost solar lanterns based on LED technology for rural households as a priority, along with building further the capacity of its dealers. During the pilot, they provided their dealers with training on two aspects. The first part focused on the technical specification of the product and the benefits it offers to the user. The second part focused on how to promote and explain the product to local shops and kiosks and to clients. Although both need to be convinced of the benefits of the product, different strategies are required for the shopkeepers and for the clients.

Main market bottlenecks
Through this pilot, Umeme Jua wanted to find out which specific market segments would be interested in the LED solar lantern, and how the lantern could best be promoted to these end-users. Therefore, the pilot included monitoring and evaluation of customer feedback to see whether the customers were satisfied, or if improvements are necessary.

Ease interventions

Sales instruction tools
Kigoma region was selected for a pilot trial of 1000 solar lanterns, sold through three or four dealers each targeting around 20 retailers. The dealers were supported in how to introduce the product to the market and how to promote the product to shopkeepers in their network.

Identification of market segments
Umeme Jua has been successfully supplying solar products on cash, hire purchase and lease bases, and through SACCOS, in rural areas. It has been seen that some people in rural areas cannot afford solar systems and, therefore, Umeme Jua wants to introduce the solar LED lantern. Identifying the size and the feasibility of the potential market segments, and their characteristics, was a major objective of the pilot.

Complete business package
As a result of the pilot, Umeme Jua wanted to have developed a complete business package for their dealers including:

- Financial profiles and business development
- Product information and promotional material
- Sales instruction tools
- Marketing campaign
- Design of complete business package

For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/. Profiles on market actors, service providers and project interventions can also be found there.

### Market background

- **Short description of market background**: The market for small and medium size solar home systems has grown into a large one in Tanzania, one in which private-sector players can earn a sustainable income. Umeme Jua, established in 2002, has become a leading private-sector player in developing the market for solar products in Tanzania.

- **Project partner**: Umeme Jua

- **Project duration**: 1 year - Pilot

- **Costs**
  - **First phase**: € 20,200
  - **Total Budget**: € 20,200

- **Target**: 1,000 solar LED lanterns sold
  - 3 market developers and 4 dealers trained and working
  - 6,000 people have access to energy
Cookstoves - Distribution channels for sawdust cookstoves

By Kisangani in Tanzania, supported by Triodos Facet

Market chain actors
The Kisangani Blacksmith Group (KSG), based in Njombe, trains and employs disadvantaged young people in three workshops in the Njombe region, enabling them to market and sell their products. Existing sales show a growth in the market potential for KSG’s products and tools, enabling them to attract more customers. Existing sales show a growth in the market potential for KSG’s products and tools, enabling them to attract more customers. Training on blacksmith skills

End-Users

Kisangani Blacksmith Group (KSG) workshop

TECHNICAL SCHOOL: Training on production technology

TRADE FAIR: Sales of KSG products

MARKETING AGENCY: Development of KSG brand and promotion material

PHOTOGRAPHER: Photo material of products

MARKETING CONSULTANT: Training on marketing skills

IT CONSULTANT: Training on computer skills

Kisangani Blacksmith Group (KSG)

Primary Market Chain

Business development service provider

Project interventions

Identification and prioritisation of key challenges

Coaching visit 1: Support on developing overall business plan


Ease interventions

Identification of key challenges

In late 2009 / early 2010, Triodos Facet provided business skills coaching to KSG during two visits. The content of these coaching visits was decided upon after a coaching assessment undertaken by Triodos Facet with KSG.

First coaching visit

The key focus area during the first coaching period was the participative development of an overall business plan for KSG, with the sawdust stove as one of the projects. A business plan for the coming years, including an income and expenditure projection, was included.

Second coaching visit

The second coaching period supported KSG in developing its marketing strategy and refining its business plan 2010. The main focus was on defining an organisational structure for KSG by incorporating and creating links with the new company that has been formed to take over the commercial functions. Besides the business plan, a marketing strategy and a draft agreement for (franchisee) sales agents were also developed.

Future challenges

Previously, KSG had combined business activities with charity work. To create greater transparency, management decided to create a new company to house the commercial activities. A key challenge for KSG was to develop its markets in order to become profitable. A draft project proposal is in the pipeline to support KSG in its efforts to expand the markets for two popular new technologies: sawdust stoves and rope pumps. In addition, continued coaching support will be needed to strengthen the financial management of the company. In 2010, KSG will focus on entering the nearby market of the Iringa region. In addition, KSG will introduce an improved sawdust stove and add new products to its existing line, and these will be branded as ‘KSG distinct’.

Market chain actors

The Kisangani Blacksmith Group (KSG), based in Njombe, trains and employs disadvantaged young people in three workshops in the Njombe region, enabling them to market and sell their products. Existing sales show a growth in the market potential for KSG’s products and tools. KSG produces a wide range of products: from cookstoves to agricultural tools and rope pumps. KSG workshops purchase the raw materials needed for production and assembly of cookstoves, as well as their other products. Many trainees continue to work for KSG on a freelance basis.

BDS providers working on the market chain

Trade fairs are used by Kisangani to promote their products beyond the Njombe region. Kisangani is also working on developing a brand and promotional material to professionalise the company. The support of a marketing agency will be sought for this. A professional photographer will be hired to produce high-quality pictures of all KSG products.

Main market bottlenecks

KSG sales are expanding beyond Njombe through, for instance, participation in trade fairs. In further expanding the sales of its good quality products, a major challenge is the lack of outreach through professional (franchisee) sales points and capable staff to strengthen the KSG marketing and sales strategy. If operations are to be expanded, financial management systems and procedures have to be improved.

The following identified problems could then be resolved:
- Inadequate follow-up to customer requests
- Late delivery of products
- Lack of personnel focused on marketing
- KSG workshops are not professional sales points

For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/
Profiles on market actors, service providers and project interventions can also be found there.

Profile on market actors, service providers and project interventions can also be found there.
Ease interventions

Phase 1
The first phase in the capacity building programme had the following objectives:
- Assess the needs and opportunities for BDS as well as the current knowledge of BDS within TaTEDO
- Increase the understanding of what BDS mean in practice and how an organisation can integrate such activities
- Support the organisation with BDS strategy development and in the recruitment of BDS experts.

Field assessment
A field assessment was conducted with the aim of creating an overview of the need for business support services among rural energy entrepreneurs and to assess the opportunities for TaTEDO to offer such services.

TaTEDO and BDS
A BDS awareness-raising seminar was held to increase understanding and basic knowledge about BDS among key TaTEDO staff. The seminar ended with a discussion on TaTEDO’s current position and its strategic opportunities.

Recruitment of BDOs
The last activity was the recruitment of Business Development Officers (BDOs) who will be stationed in various districts in the northern zone. Coaching was provided in all phases of the recruitment process: job description (ToR), adverts, CV evaluation, shortlisting and the decision-making process.

Phase 2
As a result of Phase 1, TaTEDO made the strategic choice to develop BDS in order to expand the market for sustainable energy technologies. The provision of quality training to builders, sellers and users of energy technologies is a key element in TaTEDO’s strategic plan. Through an ETC consultant on technical training, the TaTEDO training strategy and the manuals were reviewed.

Future challenges
When Phase 2 ends, the results should be evaluated by TaTEDO staff and management. Based on the outcome, the strategy may be modified and/or replicated in other zones.

For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/.

Profiles on market actors, service providers and project interventions can also be found there.

Market chain actors
TaTEDO aims to enhance and improve its in-house capacity to deliver BDS in order to expand the market for sustainable energy technologies. The TaTEDO head office in Dar-es-Salaam sets the general direction for TaTEDO activities but delegates actual implementation to the zone offices. The zone offices work with ‘district energy teams’ and Business Development Officers (BDOs), trained and hired under this project, to realise their goals. The district energy team consists of the BDOs, village leaders and district officers. Within the TaTEDO zone office, the BDOs provide training and coaching to energy entrepreneurs.

TaTEDO uses all sorts of standard business development services, such as the print shop depicted in the above diagram.

Main market bottlenecks
TaTEDO recognises the necessity of cooperation with the private sector to ensure sustainable access to energy for the rural population. Their experience is that rural entrepreneurs and technicians express a need for support on business aspects such as customer care, pricing and cash flow management. However, the current practical experience with coaching energy entrepreneurs was weak and needed to be developed.

BDS providers working in the market chain
The objective of the assessment was to produce specific information on the training and/or development requirements of TaTEDO staff directly involved in BDS.

Training of BDOs
The first activity focused on entrepreneurial skills. BDS training and the development of workplans and assignments for the BDOs and their supporting for the first three months.

Field coaching of BDOs
The main focus of a coaching mission was to enhance the BDOs’ skills and effectiveness in their fieldwork by implementing the workplans developed during the first BDS training. The coaching team strengthened their capacities to coordinate their own work jointly with involved TaTEDO staff.

Develop BDS toolkit
To support the TaTEDO staff and BDOs in their work, TaTEDO worked on the development of a BDS toolkit with support from Triodos Facet. The resulting BDS strategy and methodology were presented during a one-day BDS seminar.

Exchange on biogas and solar training technology
Alongside capacity building on BDS, TaTEDO also organised technical exchanges with OGRE on WACVINA biogas technology and with Energética on solar drying technology.

Training strategy and manual review
The provision of quality training to builders, sellers and users of energy technologies is a key element in TaTEDO’s strategic plan. Through an ETC consultant on technical training, the TaTEDO training strategy and the manuals were reviewed.

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Future challenges
When Phase 2 ends, the results should be evaluated by TaTEDO staff and management. Based on the outcome, the strategy may be modified and/or replicated in other zones.

For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/.

Profiles on market actors, service providers and project interventions can also be found there.

Short description of market background
At the organisational level, there is a weakness in providing the required entrepreneurial skills and coaching to energy entrepreneurs that would enable them to successfully run their energy businesses. This requires an intervention so as to ensure energy access to the majority of rural households.

Project partner
Triodos Facet

Project duration
1 year
- First phase
- Second phase

Costs
- First and second phase

Total Budget: €115,461

Target
- 12 TaTEDO staff have had business coaching
- 18 staff from district energy teams have been trained
- 4 Business Development Officers have been hired, trained and are working
Uganda

The EASE portfolio in Uganda consists of two projects. Partner Vedco is working on transforming maize and rice mills into multifunctional platforms. Project partner Send-a-Cow is working on access to solar lighting for farmer groups.

Projects Uganda:
21. Multifunctional platforms
22. Solar lighting

Country facts

Country name: Republic of Uganda
Area: 241,038 sq km
Population: 32.4 million
Rural population: 28.2 million
Life expectancy: 52.7 years
GDP per capita: $ 1,200
Currency: Ugandan shillings (UGX), $ 1 = 2,220 UGX

Energy facts
National electricity reach: 9%
Rural electricity reach: 4%
Modern cooking fuels: 0.4%
Rural modern cooking fuels: 0.1%
Market chain actors

The importer of engines and appliances obtains his products from international markets, and sells them on to dealers in the more rural areas. Machine operators, often farmer groups, buy and use the engines and appliances to offer rice and maize milling as a paid service to end-users. Within the project, their services will be extended to include other energy services such as phone charging, electricity and communication. This means they will evolve into multifunctional platform operators able to offer the end-users a greater range of services.

BDS providers working in the market chain

There are technicians that are able to support the operators of the multifunctional platforms with the installation, repair and maintenance of their engines and appliances. If the operators do not have sufficient funds to buy the necessary materials, micro-finance could be an option. This will be in the form of a short-term loan that is specifically adapted for the operators of multifunctional platforms.

Main market bottlenecks

The main market bottleneck is that there are only a few multifunctional platforms in this region of Uganda, and the business model for operating the platform remains new and unknown, especially to farmer groups. Therefore, much attention has to be given to raising the awareness of the operators of rice and maize milling facilities. Besides this, the cooperation with micro-finance needs to develop. Finally, the operators need support on how to run a multifunctional platform, especially in terms of the business model.

Ease interventions

Promotional material

Vedco is developing various promotional materials, such as flyers and posters for dealers, to promote their products.

Support with business plans

The operators are supported by Vedco in drawing up a viable business plan for the running of the multifunctional platform.

Support with awareness raising

Since MFPs are not very common, Vedco is supporting the operators with activities to raise the awareness of the benefits, including visits to similar installations and similar businesses in the country.

User manual

The operators have not yet worked with MFPs and therefore need a manual to explain the operation and maintenance of the product.

Training on business activities

Besides offering support on plan making, Vedco also gives training and coaching to the operators to ensure they have a thorough understanding of doing business.

Supporting cooperation between MFIs and operators

As the programmes of most micro-finance institutes are not adapted to MFP operators, Vedco promotes this cooperation by interesting them in MFPs and facilitating their cooperation with farmer groups.

Future challenges

The MFP project is ongoing. However, the general attitude in the communities is already positive towards the MFPs - people see the benefits that could result. The importers and dealers of engines do not, however, seem that interested or inclined to actively support this rural market segment.

To ensure the project is really successful, the farmer groups and operators need to get accelerated access to similar business experiences in the country, preferably through exchange visits and peer-to-peer coaching.

For more information, visit our websites: www.ease-web.org and http://www.accesoenergy.org/.
Solar – Group access to solar lighting
By Send a Cow in Uganda

Market chain actors
The distributors of solar lighting products are all located in Kampala, and in order for them to reach rural areas they need to use locally-based solar vendors that can serve users in these areas. The solar vendors are introduced to farmer groups supported by Send a Cow Uganda and can then introduce and offer their solar lighting products in a group-sales setting. The end-users are the households that form part of the farmer groups or that are related to the same community.

BDS providers working in the market chain
The solar vendors have made a bundled promotion offer in order to make it more attractive for farmer groups to buy products from them. Through bundled promotion to group, rural solar marketing becomes feasible for the solar vendor and accessible to remote farmers.

The promotion includes an attractive price offering and additional information and knowledge that places farmers in an informed position with sufficient trust to adopt this new technology.

Main market bottlenecks
The idea of introducing farmer groups that have previously been supported in livelihood development to solar products to further improve their quality of life is relatively new. Both the facilitating NGO (Send a Cow) and the solar distributors and vendors have to find a new way of working together that fits the specific roles of both type of organisations. Exchanges between farmers and vendors are a necessary element in raising awareness.

Selection of vendors
The distributor is supported by Send a Cow in selecting solar vendors that are interested in this project, and Send a Cow developed a MoU for this task.

Organise group project teams
Send a Cow supported the farmer groups in making teams within the farmer groups that could liaise between the solar vendors and the farmers themselves.

Organise meetings between groups and vendors
To facilitate contact and communication between the project teams and the vendors, Send a Cow organised meetings in which they could discuss their ideas and needs.

Leaflets and samples
In order to promote the solar lighting products, Send a Cow worked through extension workers. They disseminate leaflets and samples to the farmer groups.

Ease interventions
The extension workers are trained by Send a Cow on the technical aspects of solar lighting so as to be able to provide farmers with independent and accurate information.

Financial support
The extension workers are financially supported by Send a Cow, and this enables them to provide technical advice to farmer groups for a certain period of time.

Future challenges
The project has only started recently but initial results are positive although more information is necessary for a complete picture. There is a tendency for solar distributors to try to sell directly to Send a Cow, which confuses the facilitating mandate of the NGO. It is important to create direct links between farmer groups and nearby solar vendors. Upon proving the model, the future challenge will be how to scale the level of operation from the two pilot groups to the hundreds, maybe thousands, of farmer groups present in Uganda.
In Vietnam, EASE works with three partner organisations that implement activities based on three different technologies: RCEE has projects on biogas and biogas generators with two private companies; CCRD works with the Gardening Association, VACVINA, on biogas installations; and PED has a project on improved cookstoves in cooperation with the Women Union.

Projects Vietnam:
23. Biogas market development project by CCRD
24. Promoting private biogas enterprises by RCEE
25. Biogas generator market development by RCEE
26. Marketing of improved cookstoves by PED

Country facts

<table>
<thead>
<tr>
<th>Country name</th>
<th>Socialist Republic of Vietnam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>331,210 sq km</td>
</tr>
<tr>
<td>Population</td>
<td>88.5 million</td>
</tr>
<tr>
<td>Rural population</td>
<td>63.7 million</td>
</tr>
<tr>
<td>Life expectancy</td>
<td>72 years</td>
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<tr>
<td>GDP per capita</td>
<td>$1,900</td>
</tr>
<tr>
<td>Currency</td>
<td>Vietnamese Dong (VND), $1 = 18.83 VND</td>
</tr>
</tbody>
</table>

Energy facts

| National electricity reach   | 94.5%                       |
| Rural electricity reach      | 91%                         |
| Modern cooking fuels         | 34%                         |
| Rural modern cooking fuels   | 20.4%                       |
Biogas installations – The VACVINA model

By CCRD in Vietnam

Market chain actors
Basic building materials come from local markets and are available in every village, and end-users have the option of ordering the materials directly or through technicians. The technicians are responsible for building the biogas installations. Biogas cookstoves are ordered by CCRD and produced by a SME that delivers them to CCRD. VACVINA at the commune level, and provide information on all types of biogas installations.

Main market bottlenecks
Bottlenecks in the biogas supply chain were that builders did not have the technical know-how to build this system and were not able to sell the biogas installations and their services. Therefore technical and marketing training was developed. Promotion of this type of biogas installation was not being done effectively, and hence the support was necessary. Given that there are different types of biogas installations. It is hard for households to have an overview of the pros and cons of models, and therefore information shops were established.

Promotional material
For promotional purposes, early-bird discounts, flyers, posters, radio shows and a TV documentary were developed, and these are disseminated through the VACVINA organisation at the commune level.

Technical training material
The technical training is for biogas plant builders and has theoretical and practical components. It is provided by VACVINA or CCRD and the builders of the best-performing biogas plants.

Marketing training material
Marketing training covers sales techniques and marketing strategies and, because the training has a lot of practical exercises, it is very effective for builders. The training is disseminated by CCRD and/or VACVINA.

Information and distribution shops
Information and distribution shops are coordinated by VACVINA at the commune level, and provide information on all types of biogas installations.

For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/.
Profiles on market actors, service providers and project interventions can also be found there.
Biogas installations - The Composite model

By RCEE in Vietnam

Market chain actors
The Hung Vuong company orders the parts for a composite biogas installation and their other products from suppliers. They then assemble all the parts of the product themselves in their factory. The final products are then sent to their distributors, to small shops or directly to end-users, the latter only in the case of large orders. Distributors operate in all provinces in northern Vietnam and have their own network of small shops and end-users to whom they sell. Besides biogas installations, they also sell generators, cookstoves and other products that work on biogas.

Embedded services
Hung Vuong Company offers a number of embedded services to their customers and distributors. In some cases, when they know the customer well, it is possible to buy on credit.

End-users get an extensive manual on how to maintain and operate their biogas installation. The company organizes awareness-raising meetings with government, potential clients and current clients in each district in which a distributor is active. This ensures the cooperation of local authorities and brings biogas products to everyone’s attention.

Main market bottlenecks
Bottlenecks found in this supply chain were that Hung Vuong did not know how to expand their distribution network and how to offer incentives to their customers and distributors to sell more products. The support from RCEE focused on how to develop the network and reach more end-users while, at the same time, offering more services to distinguish themselves from the other actors in this field.

Promotional material
For promotional purposes, leaflets were developed, and these are disseminated by distributors to small shops and end-users.

Technical training material
Technical training focuses on distributors and provides them with technical knowledge on repair and maintenance. The training is given by RCEE.

Marketing training material
Marketing training covers sales techniques and marketing strategy. This training is also disseminated by RCEE.

Future challenges
Hung Vuong does not have any experts on marketing and market development, and they need more knowledge in this area. RCEE also has limited expertise in this and, therefore, the challenge is to find BDS providers in this field with whom they can cooperate.

Ease interventions

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Market chain actors

The company D&D obtains components from national and international actors, and then assembles them into a biogas generator. They sell their products directly to end-users, or through a dealer network. The dealers do not buy products from D&D but do get a commission for each product they sell. They do not work exclusively for D&D, and also sell other products.

Embedded services

D&D trains its technicians to maintain and repair biogas generators, and these technicians are sent to farmers when a problem occurs with their products during the warranty period. After the warranty period expires customers can go to the mechanic in town for repairs. The technicians from D&D also provide farmers with training on how to operate their biogas digester and the advantages that can be gained. Demonstrations help to show people the benefits of the product and make them more interested in buying.

Main market bottlenecks

D&D has largely focused on the technical quality of their products, and therefore has had a lot of difficulty in developing their marketing and other services that have an added value. That is why the project interventions by RCEE support them in these areas and more generally in extending their business.

Promotional material

For promotional purposes, leaflets have been developed, and these are disseminated by distributors to small shops and end-users.

Technical training material

Technical training focuses on distributors and provides them with technical knowledge on repair and maintenance. The training is given by RCEE.

Marketing training material

Marketing training covers sales techniques and marketing strategy. This training is again disseminated by RCEE.

Demonstration models

In each new district, demonstration models have been built to familiarise potential clients with biogas products. D&D was responsible for building and maintaining these models.

User manual

RCEE developed a DVD with guidelines on how to operate and maintain the product. This was disseminated by D&D to its dealers and end-users.

Future challenges

For D&D, the current challenges lay in market assessment and developing a distribution channel. They are not sufficiently large to conduct their own market assessment but it is very important to get a good overview of the demand for their products. Their distribution network is small and they need to broaden their reach if they are to become more successful.

Biogas installations - Biogas electricity generator

By RCEE in Vietnam

For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/. Profiles on market actors, service providers and project interventions can also be found there.
**Cookstoves – Commercialisation of improved cookstoves**

*By PED in Vietnam*

**Market chain actors**

Three sorts of improved cookstoves (ICS) are supported by this project: fixed ICS, portable ICS and tea-drying ICS. The primary market chain includes the portable cookstoves, and the secondary chain the fixed and tea-drying variants. The workshop that produces portable stoves sells them directly to end-users, and also to small shops and to the Women Union who sell them on to end-users.

**BDS providers working in the market chain**

The main service provider is the Women Union. On the provincial level, they select builders and communes for the project. Most activities take place on the commune level. The Women Union promotes ICS, and has demonstration models, they also link households to builders and they organise the training for builders.

**Main market bottlenecks**

Bottlenecks in this supply chain were that the company Hung Vuong did not know how to expand their distribution network or how to offer incentives to their customers and distributors so that they would sell more products. The support by PED focused on how to develop the network and reach more end-users while, at the same time, offering more services to distinguish themselves from other actors in this field.

**Ease interventions**

**Promotional material**

Poster and flyers are made to promote ICS, and these include the phone numbers of builders to enable easy contact. The promotional material is disseminated through the Women Union.

**Technical training material**

Technical training provides builders with specific knowledge on building ICS. The training is given by PED.

**Marketing training material**

Marketing training covers sales techniques and marketing strategies, with specific exercises to practice relevant skills.

**Future challenges**

The project is functioning well in its first province, but the challenge is to replicate it in other provinces. Much depends on the expertise and attitudes of the people involved. The workshop also faces a challenge because they will have to build a distribution network if they want to increase sales.

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**Short description of market background**

Many Vietnamese still use traditional cookstoves for preparing their meals. The market for improved cookstoves is potentially very large, but people take a long time to change their ways.

**Project partner**

PED

**Project duration**

3 years

**Project status:**

Completed

**Costs**

<table>
<thead>
<tr>
<th>First phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>€ 47,589</td>
</tr>
</tbody>
</table>

**Target**

- 2,626 improved cookstoves installed
- 66 builders trained and working
- 13,130 people have access to modern energy

For more information, visit our websites: [www.ease-web.org](http://www.ease-web.org) and [http://www.accesstoenergy.org/](http://www.accesstoenergy.org/).

Profiles on market actors, service providers and project interventions can also be found there.
### ACRONYMS AND ABBREVIATIONS

#### General
- BDS  Business Development Services
- CBO  Community Based Organisation
- EASE  Enabling Access to Sustainable Energy
- GDP  Gross Domestic Product
- GTZ  Deutsche Gesellschaft für Technische Zusammenarbeit
- HDI  Human Development Index
- ILO  International Labour Organization
- LPG  Liquefied Petroleum Gas
- MFI  Micro-Finance Institution
- MFP  Multifunctional Platform
- MSME  Micro, Small and Medium Enterprises
- NGO  Non-Governmental Organisation
- PPP  Public-Private Partnership
- PV  Photovoltaic
- SME  Small and Medium Enterprise
- SNV  Netherlands Development Organization
- UNDP  United Nations Development Program

#### Bolivia
- AP LITEC Solar System Distribution Enterprise
- ELFEC  Empresa de Luz y Fuerza Electrica
- Energética  Energy for development
- MPM  Micro-Enterprises for solar system Maintenance
- SERVITEC SOL Solar System Distribution Enterprise
- SIE  Solar System Distribution Enterprise
- TECALTEMA Biogas Enterprise

#### Cambodia
- ECOBISS  Social Enterprise
- Geres  Centre for Sustainable Modern Energy Initiatives
- IMPROCEDAC  Improved Cookstoves Producers and Distributors Association
- VATTANAK  Improved stove design for the production of palm sugar developed by Geres

#### Laos
- ELC  Electronic Load Controller
- LIE  The Lao Institute for Renewable Energy

#### Mali
- AMADER  The Malian Agency for Domestic Energy and Rural Electrification
- AREED  African Rural Energy Enterprise Development
- EDM  Electricité du Mali
- MBSA  Mali Biocarburant SA
- MFC  Mali FolkCenter
- PCASER  Spontaneous private initiative for Rural Electrification
- PDSEC  Social Economic and Cultural Development Plan
- PME  Petites et Moyennes Entreprises
- SEWA  Improved (wood)stove brand in Mali

#### Senegal
- ENDA  Environment and Development Action in the Third World
- GIPS/WAR  Community group for Social Progress
- PLD  Local Development Plan

#### Tanzania
- BDO  Business Development Officer
- KSG  Kisangani Blacksmith Group
- LED  Light Emitting Diode
- SACCOS  Savings and Credit Cooperatives
- TKEEDO  Tanzania Traditional Energy Development and Environment Organization (or: Center for Sustainable Modern Energy Initiatives)
- VICOBA  Village Community Bank

#### Uganda
- VEDCO  Volunteer Efforts for Development Concerns
- MoU  Memorandum of Understanding

#### Vietnam
- CCRD  The Centre for Rural Communities Research & Development
- ICS  Improved CookStoves
- PED  People, Environment and Development Centre
- RCEE  Research Centre for Energy and Environment Gardening Association of Vietnam
- WU  Women Union of Vietnam