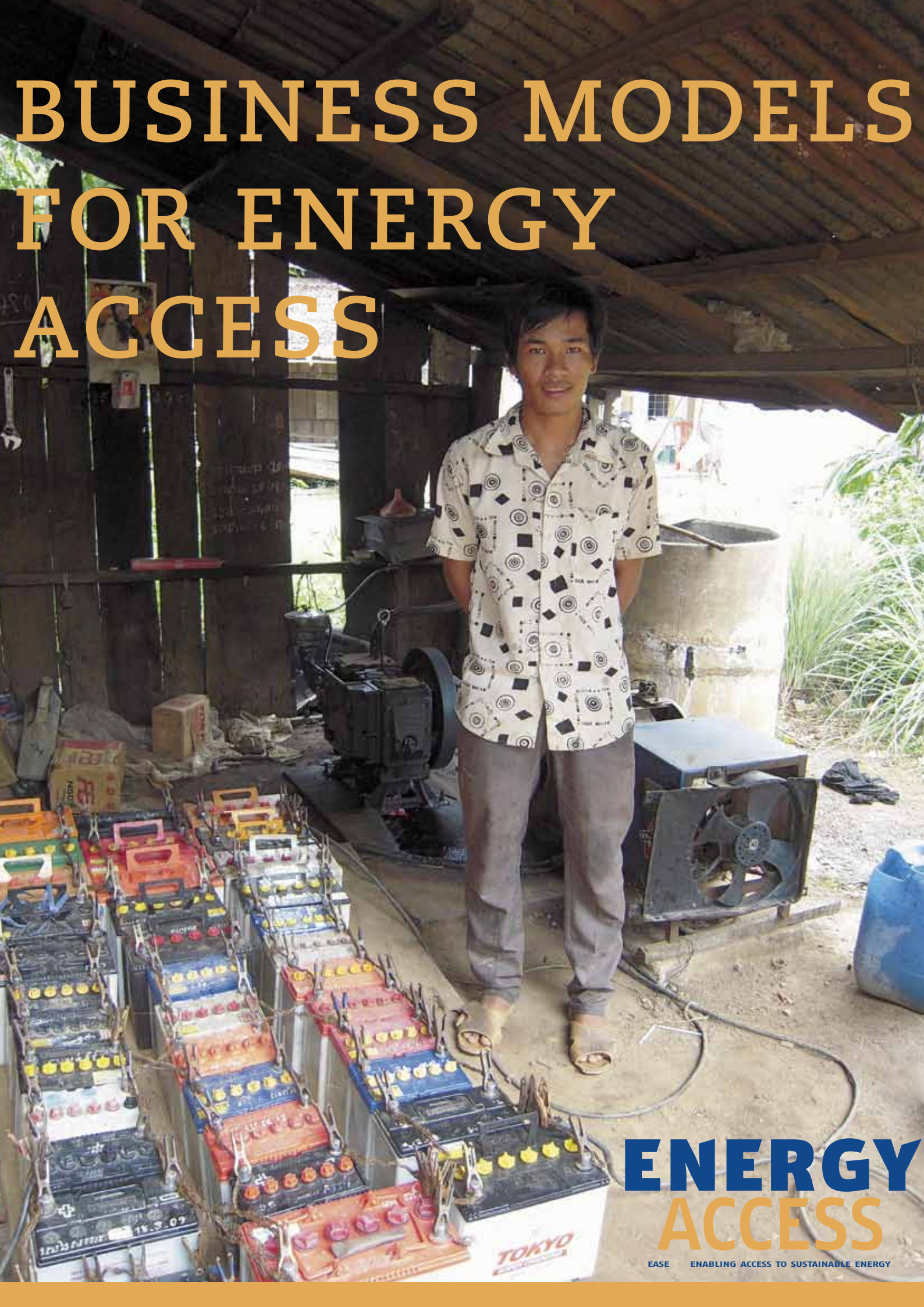
BUSINESS MODELS FOR ENERGY ACCESS



ENERGY ACCESS

EASE · ENABLING ACCESS TO SUSTAINABLE ENERGY

COLOPHON

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ENERGY ACCESS

EASE - ENABLING ACCESS TO SUSTAINABLE ENERGY

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
EASE 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.

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.

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, TaTEDO 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 FACET 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.

INDEX OF PROJECTS BY COUNTRY

INDEX OF PROJECTS BY TECHNIQUE

MAP WITH PROJECT LOCATIONS

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

PARTNERS

BOLIVIA

Energética, Energy for Development,
www.energetica.org.bo

CAMBODIA

Geres, Center for Sustainable Modern Energy Initiatives,
www.geres-cambodia.org

LAOS

LIRE, The Lao Institute for Renewable Energy,
www.lao-ire.org

MALI

MFC Nyetaa, Mali Folkecenter
www.malifolkecenter.org

THE NETHERLANDS

ETC Energy, Energy Access program, part of ETC Foundation,
www.ease-web.org

SENEGAL

ENDA-TM, Environment and Development Action in the Third World,
www.enda.sn

TANZANIA

TaTEDO, Center for Sustainable Modern Energy Initiatives,
www.tatedo.org

UGANDA

Vedco, Volunteer Efforts for Development Concerns,
www.vedcouganda.org

VIETNAM

CCRD, The Center for Rural Communities Research & Development,
www.ccrd.com.vn

PED, Population, Environment and Development Center

RCEE, The Research Center for Energy and Environment,
www.rcee.org.vn

Bolivia

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:

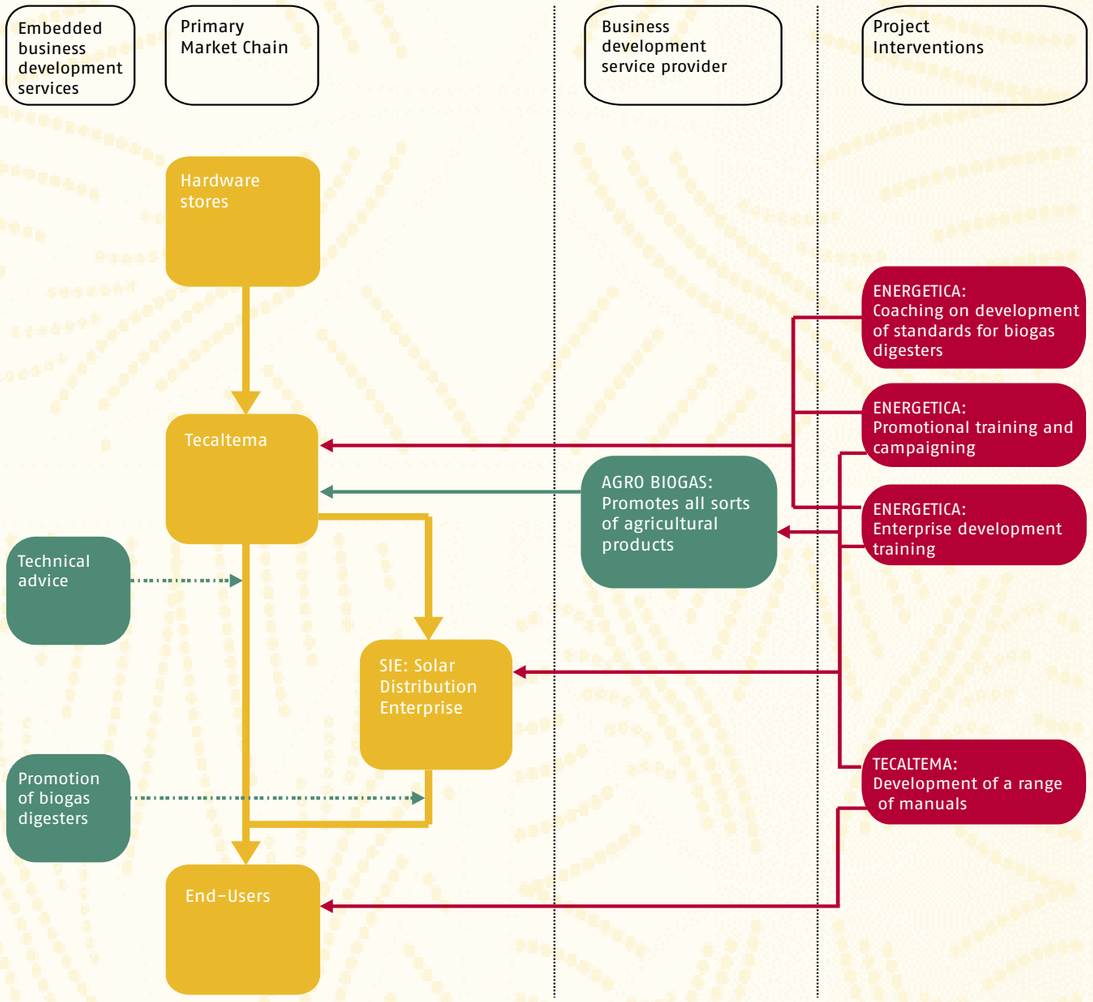
1. Biogas installation promotion by Tecaltema
2. Grid-densification by Energética
3. Supporting micro-enterprises in solar system maintenance by Energética
4. Productive uses by Energética
5. Evaluation of mini-grids by Energética

Country facts

Country name:	Plurinational State of Bolivia
Area:	1,098,581 sq km
Population:	9.9 million
Rural population:	6.6 million
Life expectancy:	67 years
GDP per capita:	$ 4,600
Currency:	Bolivianos (BOB), $ 1 = 6.82 BOB
Energy facts	
National electricity reach:	77.5%
Rural electricity reach:	38%
Modern cooking fuels:	68.7%
Rural modern cooking fuels:	29.2%

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 Maintenance) project that Energética had implemented. SIE buys biogas installations from Tecaltema and their solar technicians install these biogas digesters. They play a large role in the promotion of the digesters with their client-base.

BDS providers working within the market chain

AGRO Biogas is the only service provider in this market chain. They are an existing provider that promotes a range of agricultural products. In this they were trained by a governmental institution. Once the project was underway, they were trained in promoting biogas digesters as an additional product. Through their network, new customers were reached including small and medium sized ranchers, farmers and slaughterhouses.

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.

Ease interventions

Coaching on standards

Energética coached Tecaltema in developing standards for three categories of biodigestors: 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.

Enterprise development training

Enterprise development training was developed by Energética and used to train Tecaltema, Agro Biogas and SIE in all aspects relevant to enterprises. They focussed especially on training that would enable the actors to take on larger orders and work more efficiently.

Promotional training

Energética developed promotional training for Tecaltema, Agro Biogas and SIE. They also supported them with a promotional campaign to promote biogas, and developed demonstration sites to show the advantages. Various promotional folders were developed. The methodology developed could be replicated for other renewable energy technologies.

Manuals

Tecaltema developed various manuals for Agro Biogas, SIE and end-users. The focus was on installation, construction, operation and maintenance, and they were therefore meant mainly for technicians. Tecaltema disseminated these directly to all technicians, who then disseminated them to end-users so that they could maintain their systems.

Future challenges

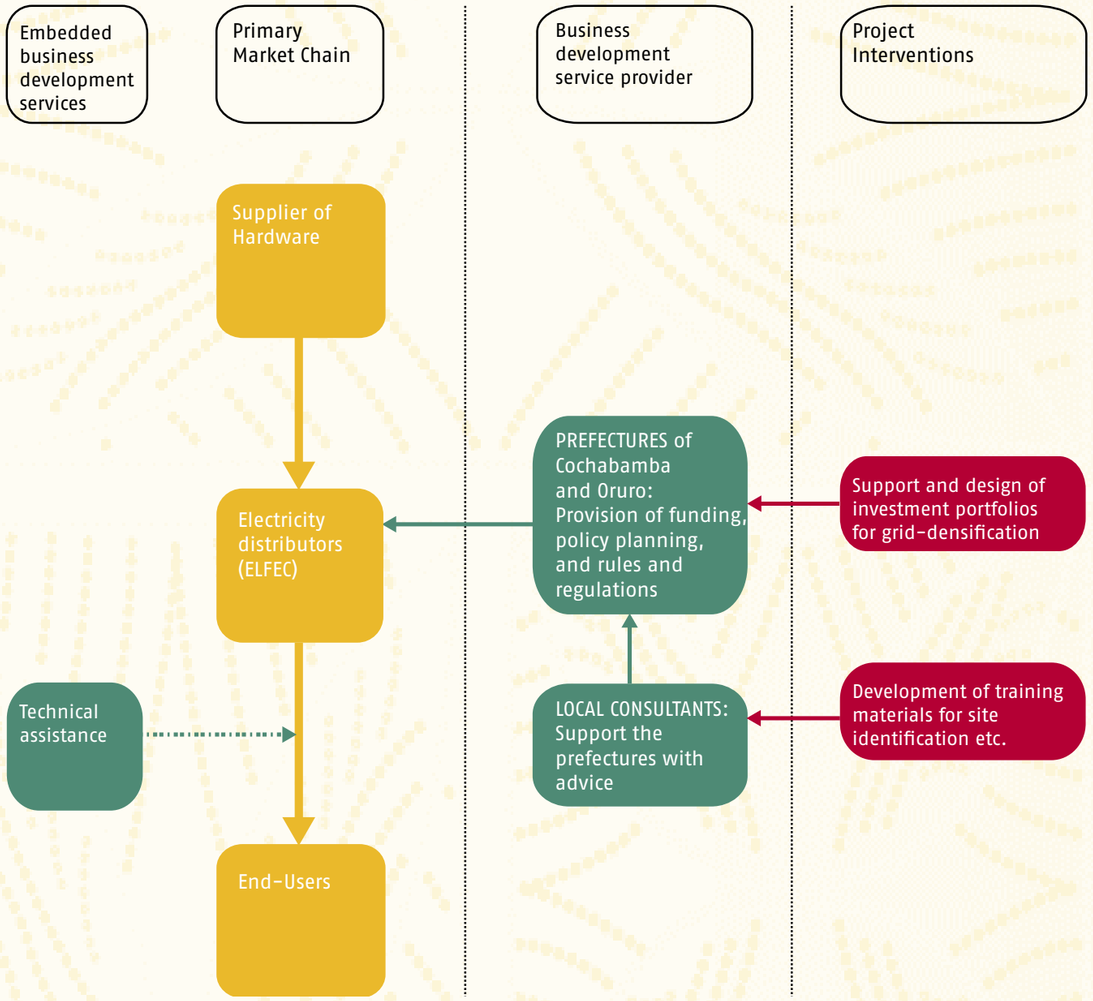
The model that is used for the implementation of biogas digesters in this project can be replicated in new areas. The current model used with Tecaltema could be upscaled by adding new actors active in other markets, in a similar way to the distribution channel developed with SIE. The methodology is especially suited for decentralised systems. For Tecaltema, the challenge is to find new project partners in Bolivia willing to finance the upscaling of the project and to satisfy the enormous demands from various programmes without losing the ability to provide quality assurance.

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 Pilot phase	**Project status:** Completed
Costs Pilot phase	**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	

Electricity grid-densification

By Energética in Bolivia



Market chain 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 market bottlenecks

The government has increased its attention to grid extension but has had difficulties in developing a strategy to reach those close to the existing grid. These end-users are unable to connect to off-grid systems as they are too close to the main grid, while connecting to the grid is too costly for them and utilities are unwilling to invest. The project therefore aims to develop a strategy to include this target group in the investment plans of the prefectures. The prefectures have expressed their willingness to invest provided the design of the project is satisfactory.

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.

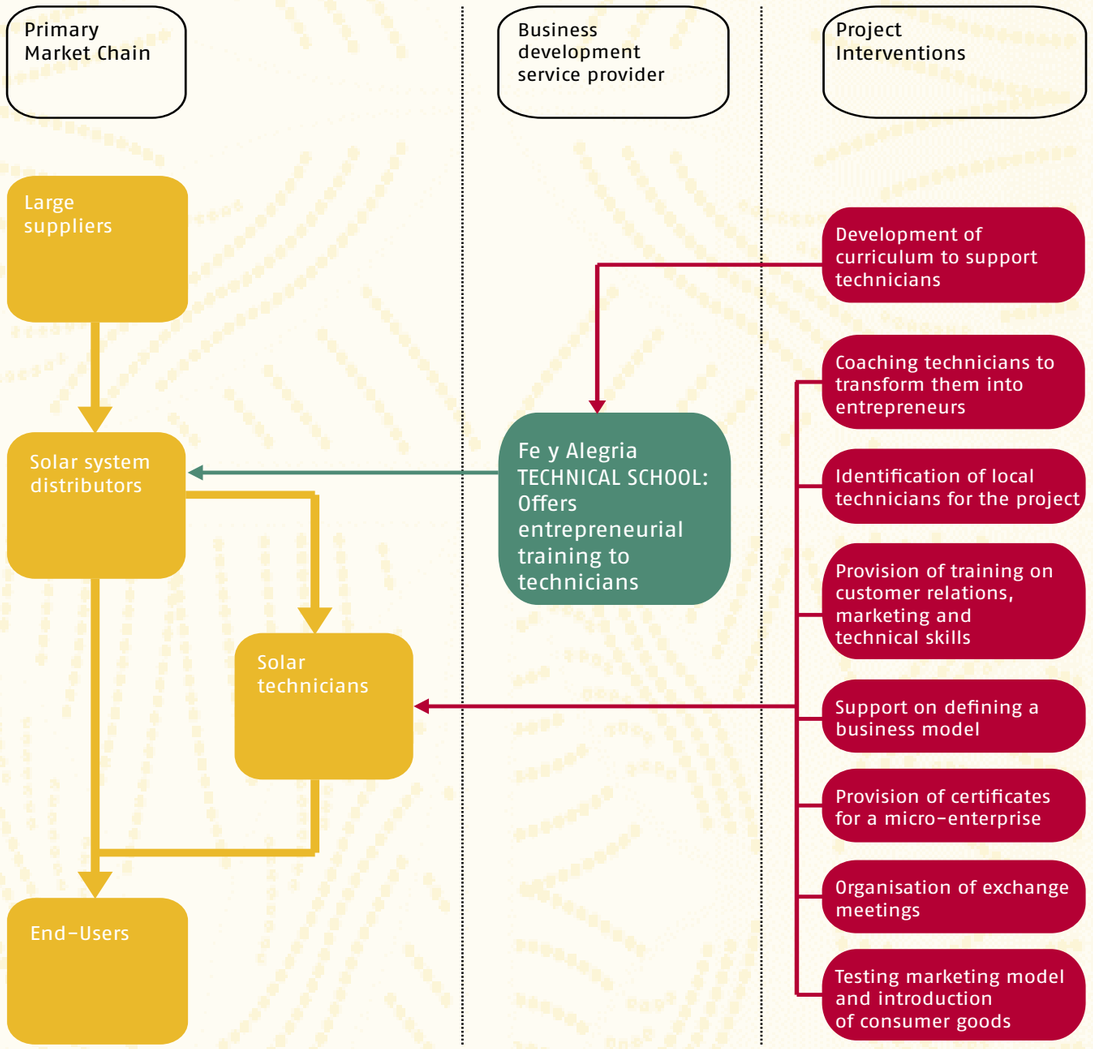
In implementing the investment portfolios, a major challenge, especially important in the construction phase, will be to involve the electricity distributors. They will continue to play an important role in rural electrification projects and, therefore, involving them in implementing grid extension and 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.

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

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	**Project status:** Completed On-going
Costs First province Second province	**Total Budget:** € 38,730 € 36,110	
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	

Solar – Micro-enterprises in solar system maintenance

By Energética in Bolivia



Market chain actors

Solar PV systems are imported by large companies that are active at the national level. They sell these to various distributors (SIE, APLITEC and SERVITECSOL) that work mostly at the provincial level. These distributors sell their products in two ways: through technicians and directly to end-users. Currently, these distributors are working on a large four-year World Bank project. With this, the technicians have a four-year contract with the distributors. In order to guarantee continuation of services to end-users, Energética has started the MEM project, aiming to support these technicians in becoming micro-enterprises for solar system maintenance.

BDS providers working in the market chain

Energética followed three phases in completing the project.

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.

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.

Ease interventions

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 focussed 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.

Organisation of exchange meetings

The exchange visits have been a great success in this project. Technicians are able to share information. This 'horizontal' exchange enables technicians to swop ideas in their own 'language'. A bulletin has been developed, in the form of a newsletter, showcasing new developments and profiling new micro-enterprises.

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.

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 national network that organises 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.

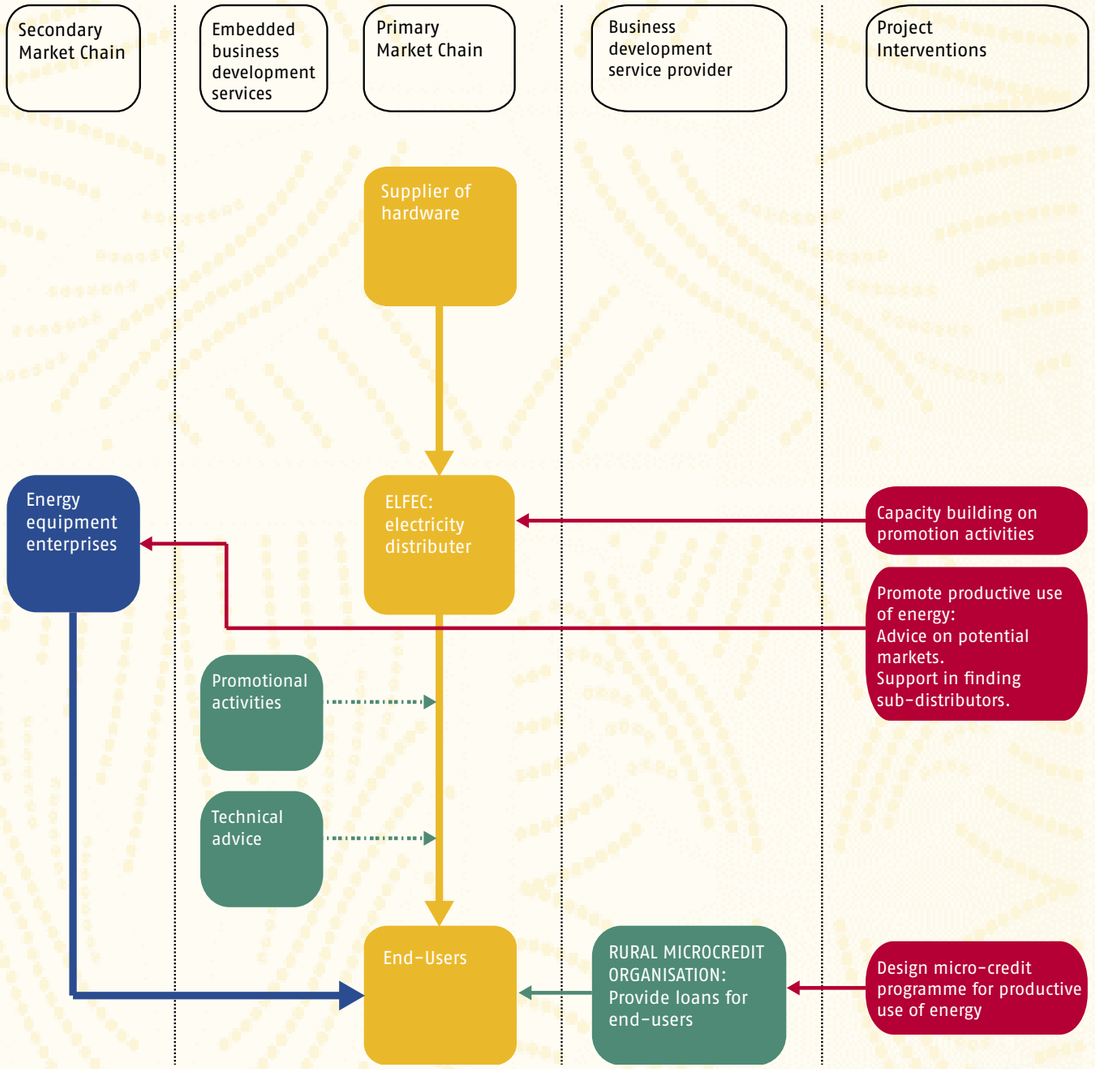
Another challenge is that the technicians do not have sufficient capital to buy large amounts of stock, and therefore remain dependent on the distributors. As a result, they only get paid in the form of commission and therefore generate very little capital to re-invest in their business.

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

Short description of market background	Both the government and the World bank are active in the PV sector, and all PV systems are to some extent subsidised at the moment. They are well on the way to solving the energy access problem, but the sustainability of maintenance and operation remains problematic.	
Project partner	Energética	
Project duration	3 years First phase Second phase	**Project status:** Completed On-going
Costs First phase Second phase	**Total Budget:** € 34,610 € 106,553	**Other sources:** € 48,130
Target	2,000 PV systems installed 30 technicians trained and working 10,000 households have access to improved modern energy services	

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

Besides providing electricity, ELFEC now also promotes the productive use of electricity and provides technical support. These activities are undertaken by ELFEC field staff that are specifically trained in this within the scope of the project.

They promote various types of productive use so that end-users have a wide range of options from which to choose.

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.

Ease interventions

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.

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.

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 a micro-credit organisation to provide this service to end-users.

Future challenges

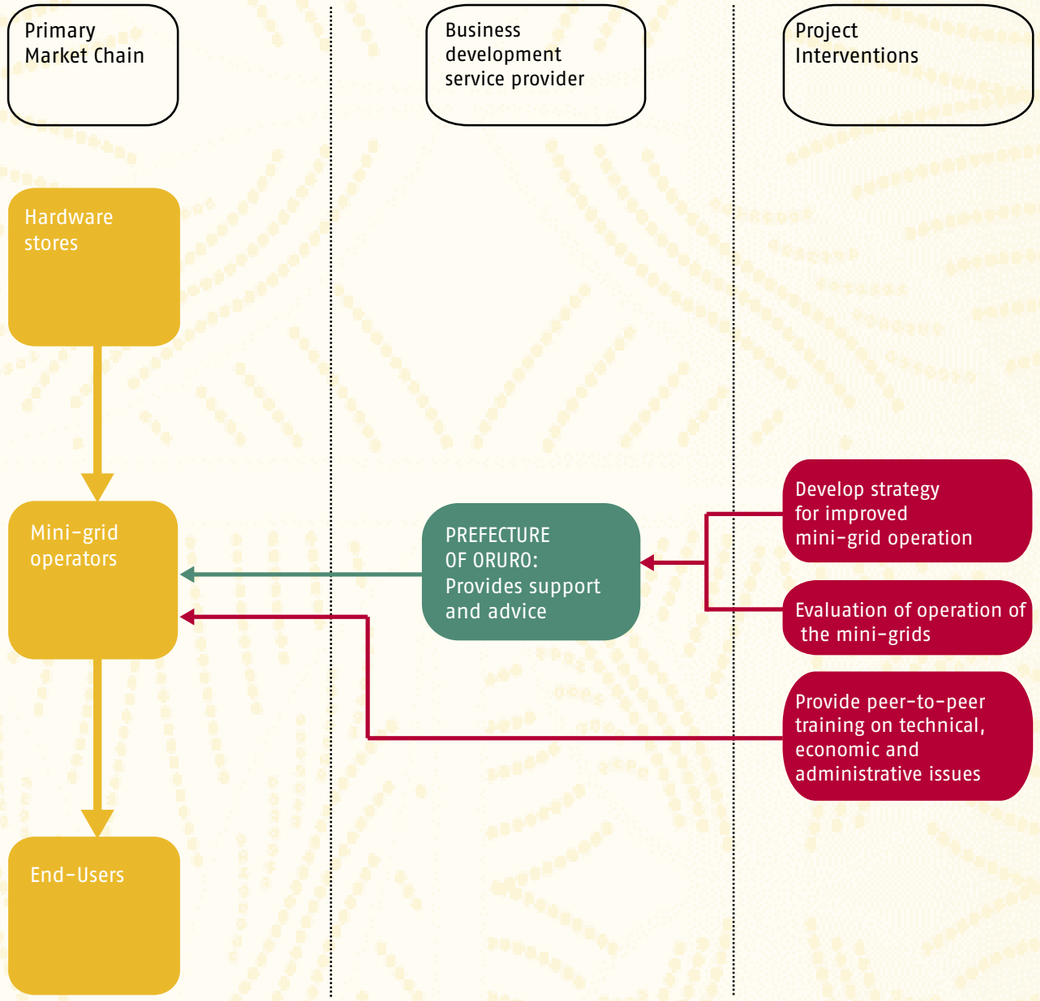
The first phase of this project intends to focus on identifying the obstacles and the factors that could accelerate access to productive use, and how productive use influences the sale of electricity. It takes up the challenge of generating a business model for the development of productive uses in rural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

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

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 Pilot	**Project status:** Ongoing
Costs Pilot	**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 a 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.

Ease interventions

Evaluation document

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

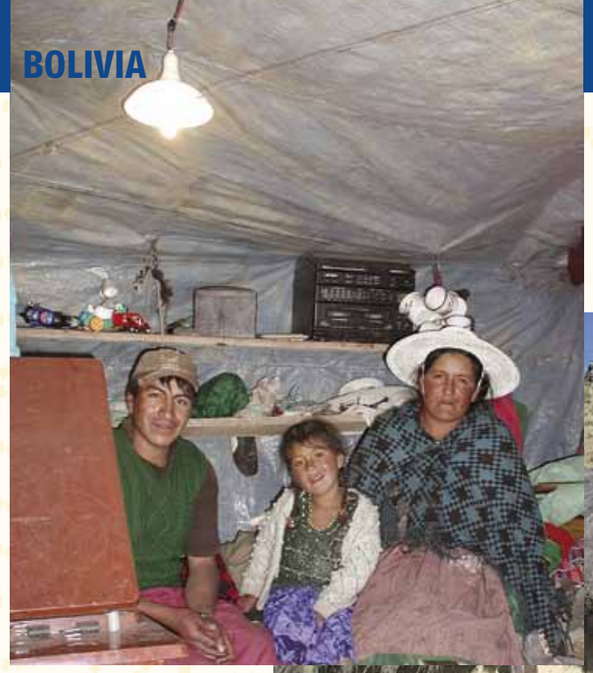
Energética will provide mini-grid operators with technical, economic and/or administrative training in such a way that they will learn from each other. A newsletter will also be produced to share experiences.

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.

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

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 Evaluation	**Total Budget:** € 17,779	**Other sources:** € 4,200
Target	1 mini-grid evaluated 26,500 people have access to modern energy	



Cambodia

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

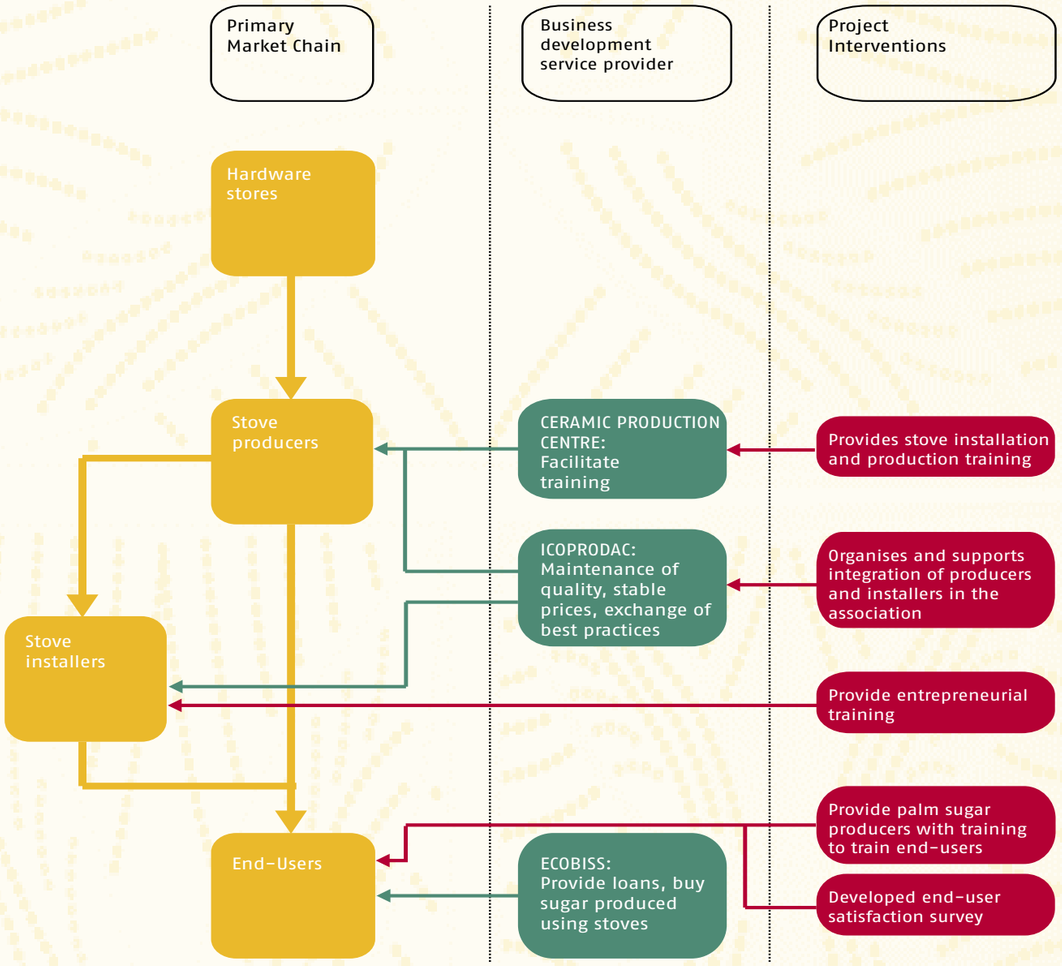
Country name:	Kingdom of Cambodia
Area:	181,035 sq km
Population:	14.8 million
Rural population:	11.5 million
Life expectancy:	63 years
GDP per capita:	$ 1,900
Currency:	Riel (KHR), $ 1 = 4,2000 KHR

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 palm sugar who either do not have a stove as yet, or have a traditional stove but would prefer an improved Vattanak stove.

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 in 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 raw 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 the 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 First province	**Total Budget:** € 22,905	
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

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

Country facts

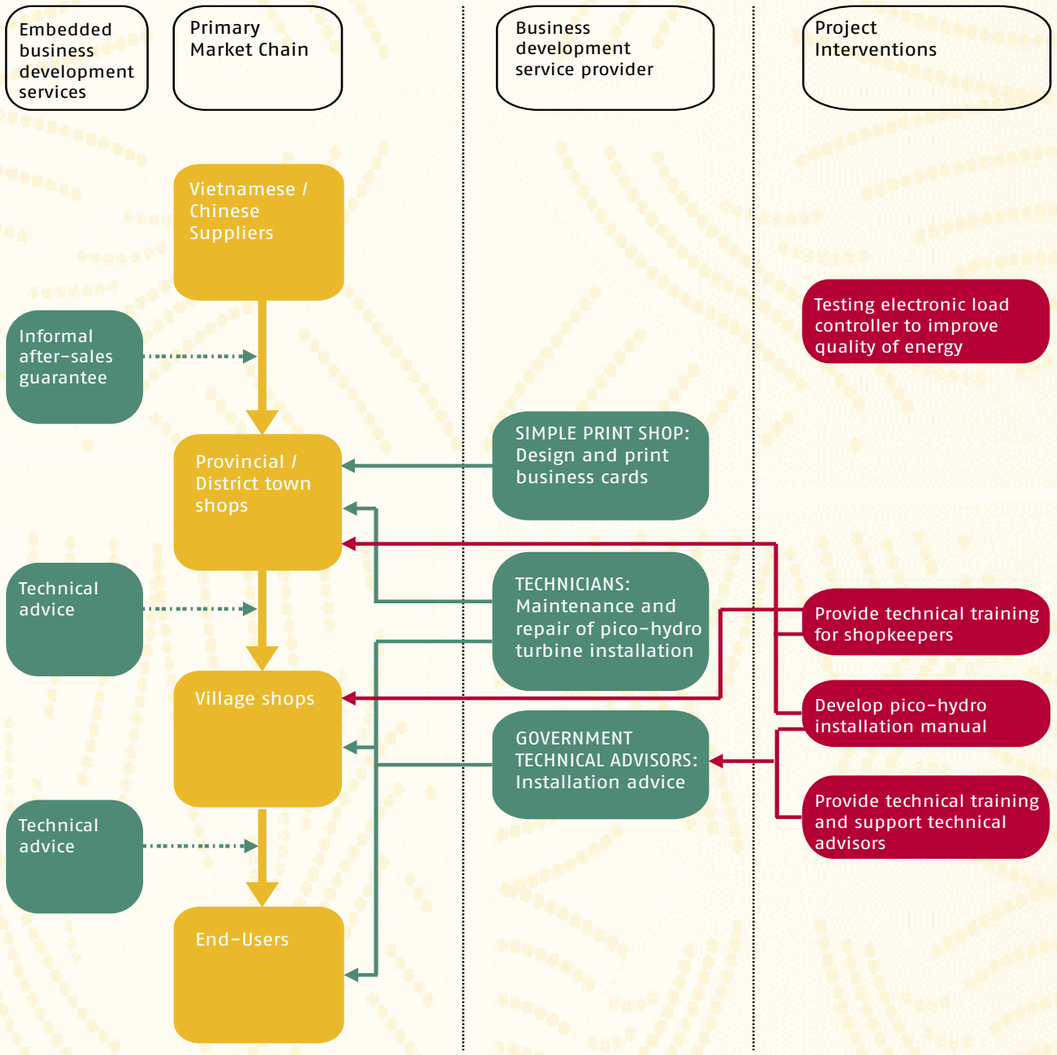
Country name:	Lao People's Democratic Republic
Area:	236,800 sq km
Population:	6.9 million
Rural population:	4.8 million
Life expectancy:	57 years
GDP per capita:	$ 2,100
Currency:	Kip (LAK), $ 1 = 8,000 LAK

Energy facts

National electricity reach:	55%
Rural electricity reach:	42%
Modern cooking fuels:	2.6%
Rural modern cooking fuels:	0.2%

Pico-hydro – Innovation and capacity building

By LIRE in Laos



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.

Ease interventions

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.

Technical training material for government technical advisors

Technical advisors from the government are supporting both village shopkeepers and end-users by providing them with information on all sorts of technical issues. LIRE provided training to make them more aware of important quality and safety measures. They also offer support in installing and improving the existing pico-hydro systems. Involving the government in this project will also help to formalise the pico-hydro sector in the longer term.

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-hydropower (<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 First province Additional districts	**Project status:** Completed Ongoing
Costs First province Additional districts	**Total Budget:** € 12,850 € 75,600	
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	

Mali

The following projects have been implemented in Mali by one of our partners, MFC Nyetaa: support to SMEs who provide informal access to energy (8); a rural electrification project supporting formal energy providers (9); and embedding energy in local community development plans (13). The portfolio also includes three projects with private-sector partners. The projects with Tissina and Katene Kadji focus on developing distribution channels for kerosene cookstoves and for improved cookstoves respectively (10 and 11). The project with Mali Biocarburant SA aims to enhance the effectiveness of multifunctional platforms in rural areas (12).

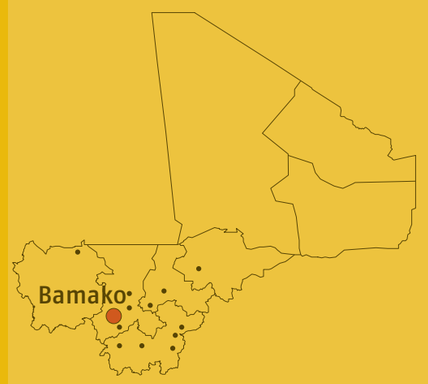
Projects Mali:
8. SMEs energy access
9. PCASER rural electrification
10. Kerosene cookstoves
11. Improved cookstoves
12. Multifunctional platforms
13. Mainstreaming energy

Country facts

Country name:	Republic of Mali
Area:	1,240,192 sq km
Population:	13.8 million
Rural population:	9.4 million
Life expectancy:	52 years
GDP per capita:	$ 1,200
Currency:	West African CFA francs (XOF), $ 1 = 510 XOF

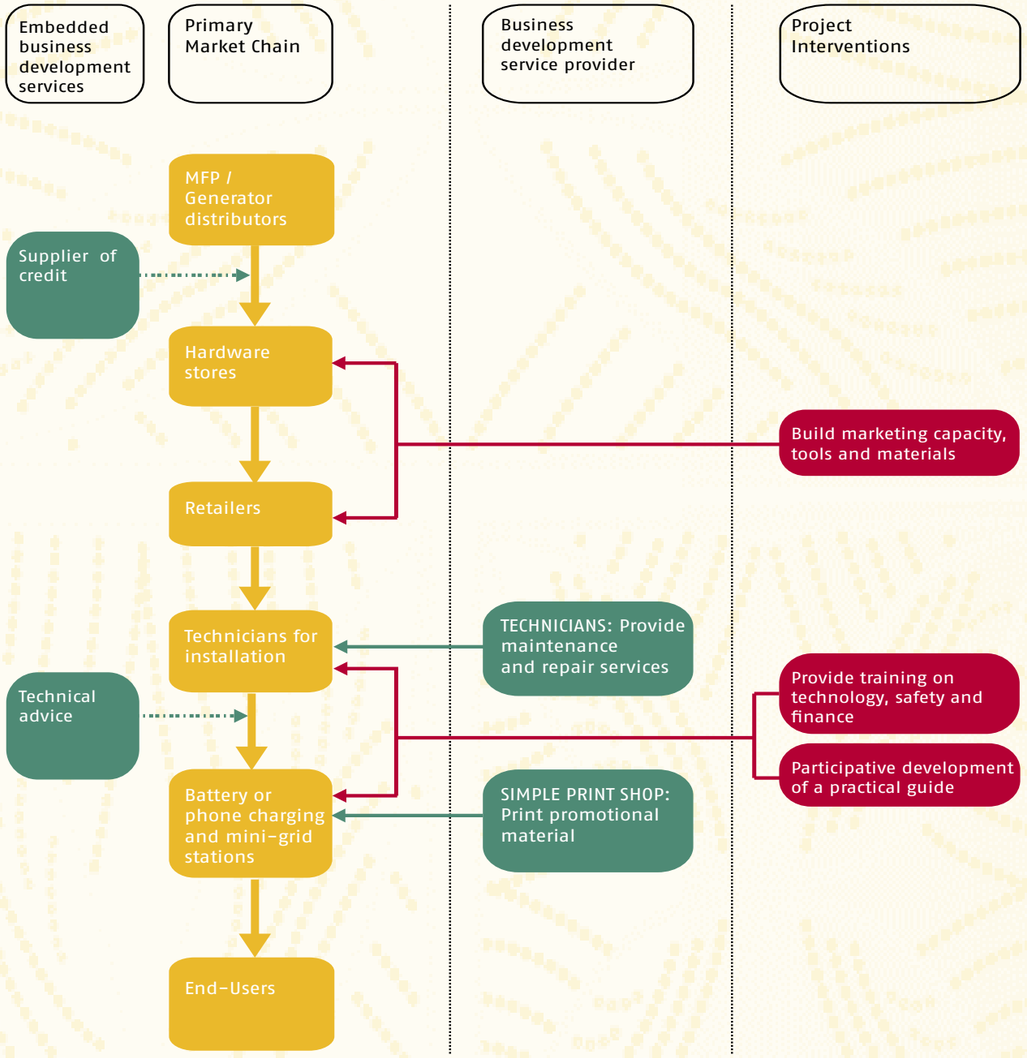
Energy facts

National electricity reach:	17.4%
Rural electricity reach:	3.7%
Modern cooking fuels:	0.2%
Rural modern cooking fuels:	0.0%



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 organised 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.

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 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 specialises 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.

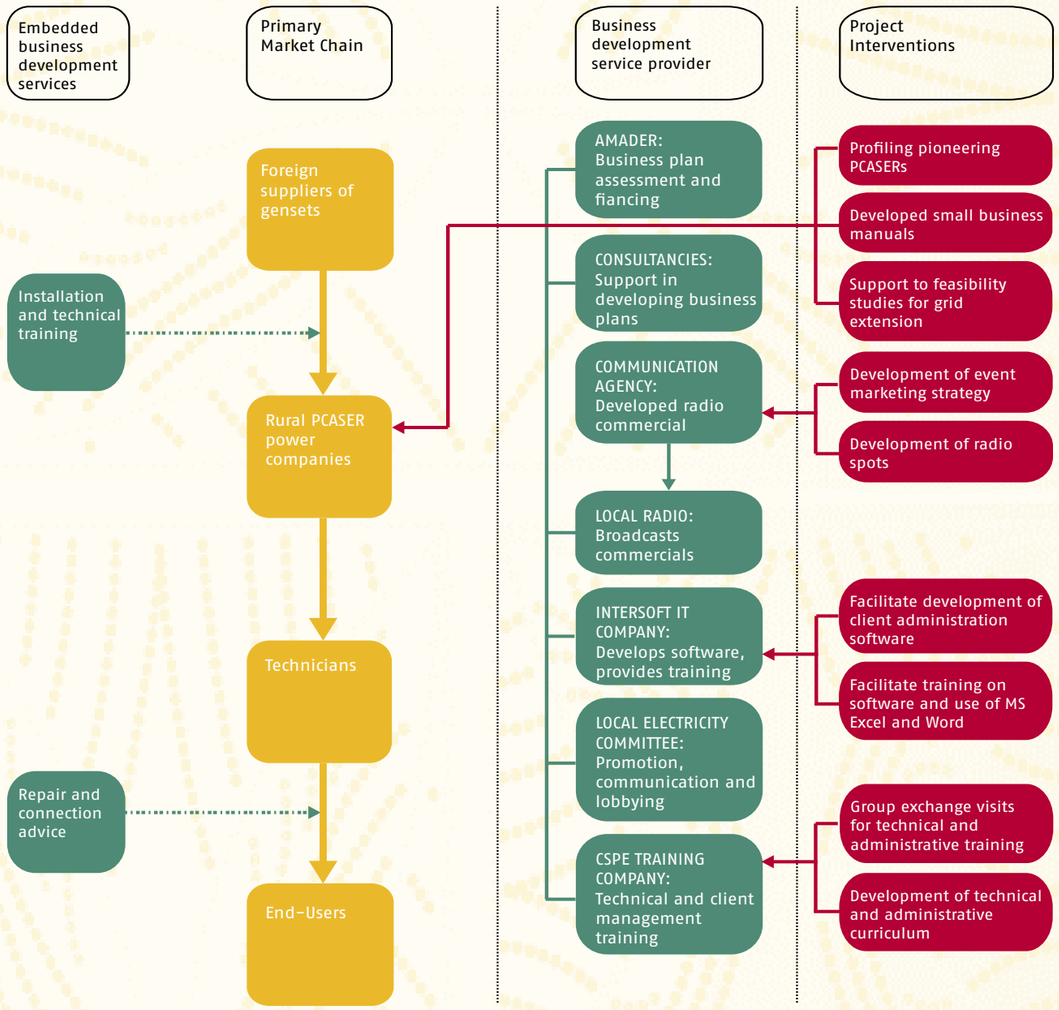



For more information, visit our websites: www.ease-web.org and http://www.accesstoenergy.org/.
Profiles on market actors, service providers and project interventions can also be found there.

Short description of market background	The energy situation in rural Mali is characterised 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	**Project status:** Completed Completed
Costs Pilot First phase	**Total Budget:** € 20,211 € 25,620	
Target	156 multifunctional platforms sold 5 distributors and suppliers plus 14 technicians trained and working 4,380 people have access to energy	

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 for administering the PCASER companies, developed by Intersoft. This product is used by a number of operators who have expressed their satisfaction with it.

Main market bottlenecks

Mali is one of the few countries where local energy operators can obtain large subsidies to start their own rural power company. After installation, however, the entrepreneurs face many unexpected problems. The EASE project consists of four phases. The first phase focused on profiling pioneering PCASER operators and exchanging best practices. The second phase trained operators on simple computer use, and software for administration and client management was developed, as were business management manuals. During the third phase, exchanges were organised and marketing strategies received attention. The final phase consists of extending the project to new operators and developing a curriculum covering technical and administrative aspects.

Ease interventions

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 profiles 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.

Technical and administrative training

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 curriculum to be able to reach the maximum number of PCASER operators.

Future challenges

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

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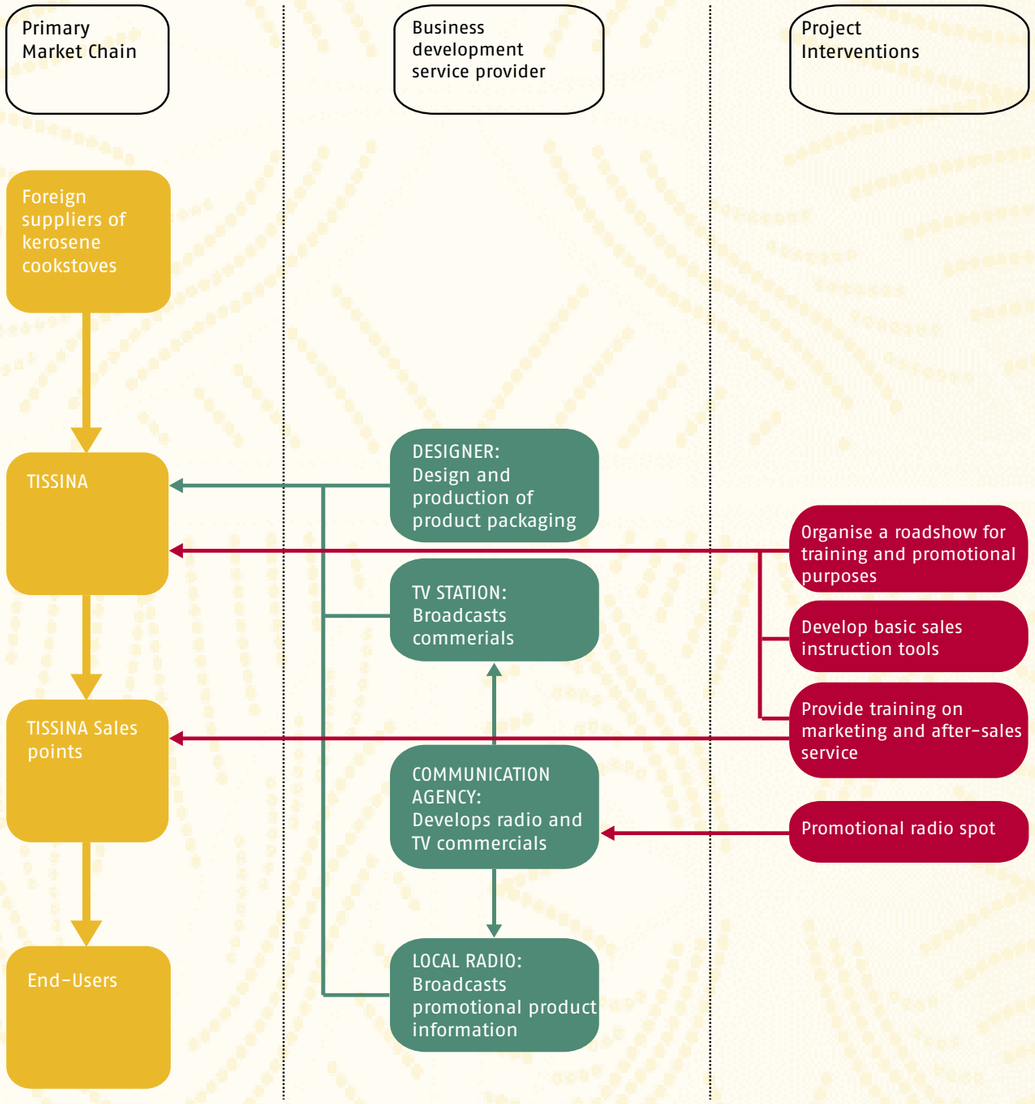
Profiles on market actors, service providers and project interventions can also be found there.

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 Second phase Third phase Fourth phase	**Project status:** Completed Completed Completed Ongoing
Costs First phase Second phase Third phase Fourth phase	**Total Budget:** € 18,607 € 22,895 € 37,772 € 27,602	
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.

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.

Radio and television spots

Tissina, in cooperation with a communication agency, developed radio and television spots to promote the kerosene stoves. These spots are intended to raise awareness about the product, to inform clients about the benefits and to create a Tissina-brand image.

Future challenges

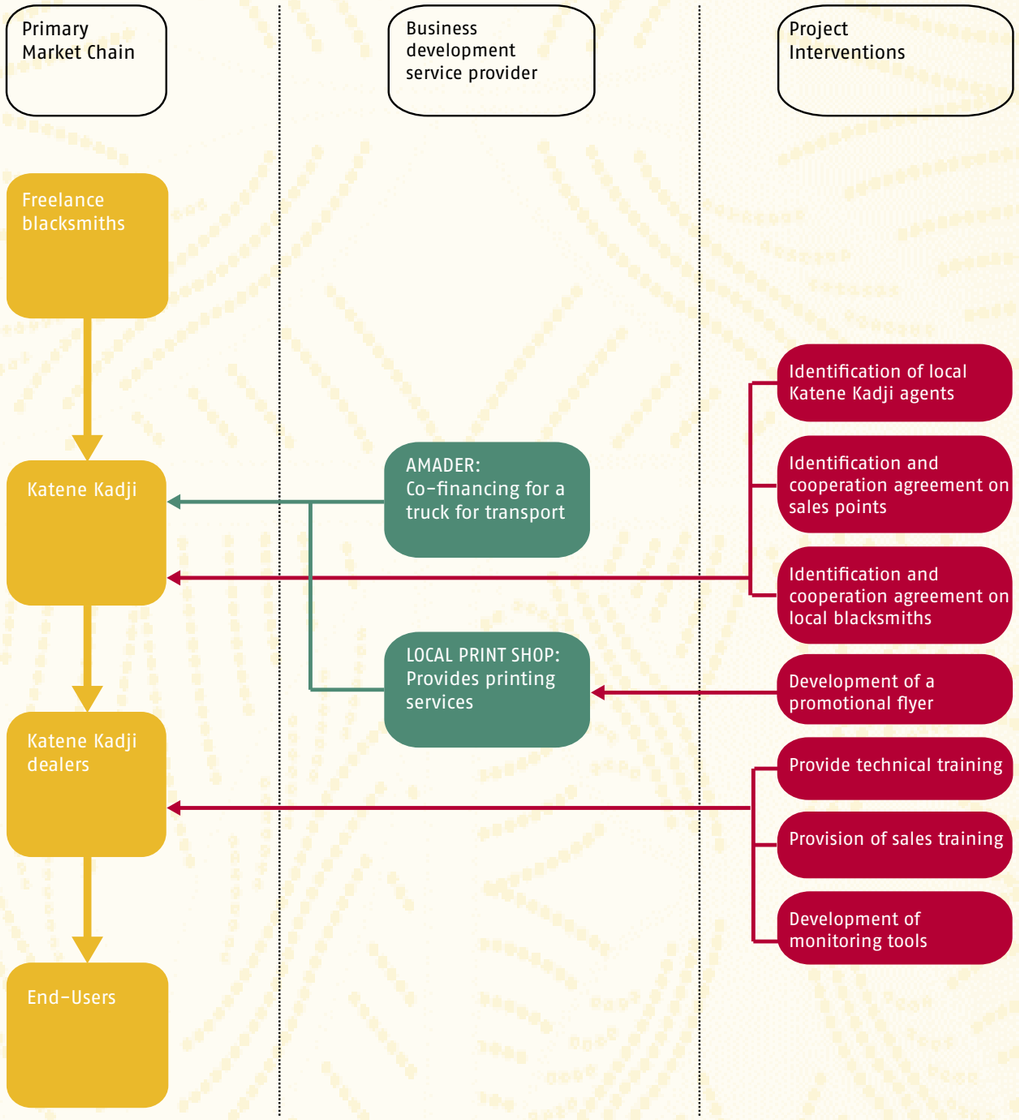
Many stoves were sold, and cooperation with sales points was developed during the project. It can therefore be concluded that kerosene does have a potential in the rural market. Tissina's challenge for the future is to secure supply of the stove and to further develop their sales channels.

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	Various sorts of kerosene stove have been implemented over the last 50 years. This has not been very successful due to a lack of performance and comfort with some of the stoves. In response, Tissina developed a new model that better fulfils peoples needs.	
Project partner	Tissina	
Project duration	1 year Pilot	**Project status:** Completed
Costs Pilot	**Total Budget:** € 5,885	**Own contribution:** € 883
Target	1400 kerosene stoves sold 45 sales points and sales agents plus 7 technicians trained and working 11,200 people have access to energy	

Cookstoves – Building a network of distributors for SEWA

By Katene Kadji



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.

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

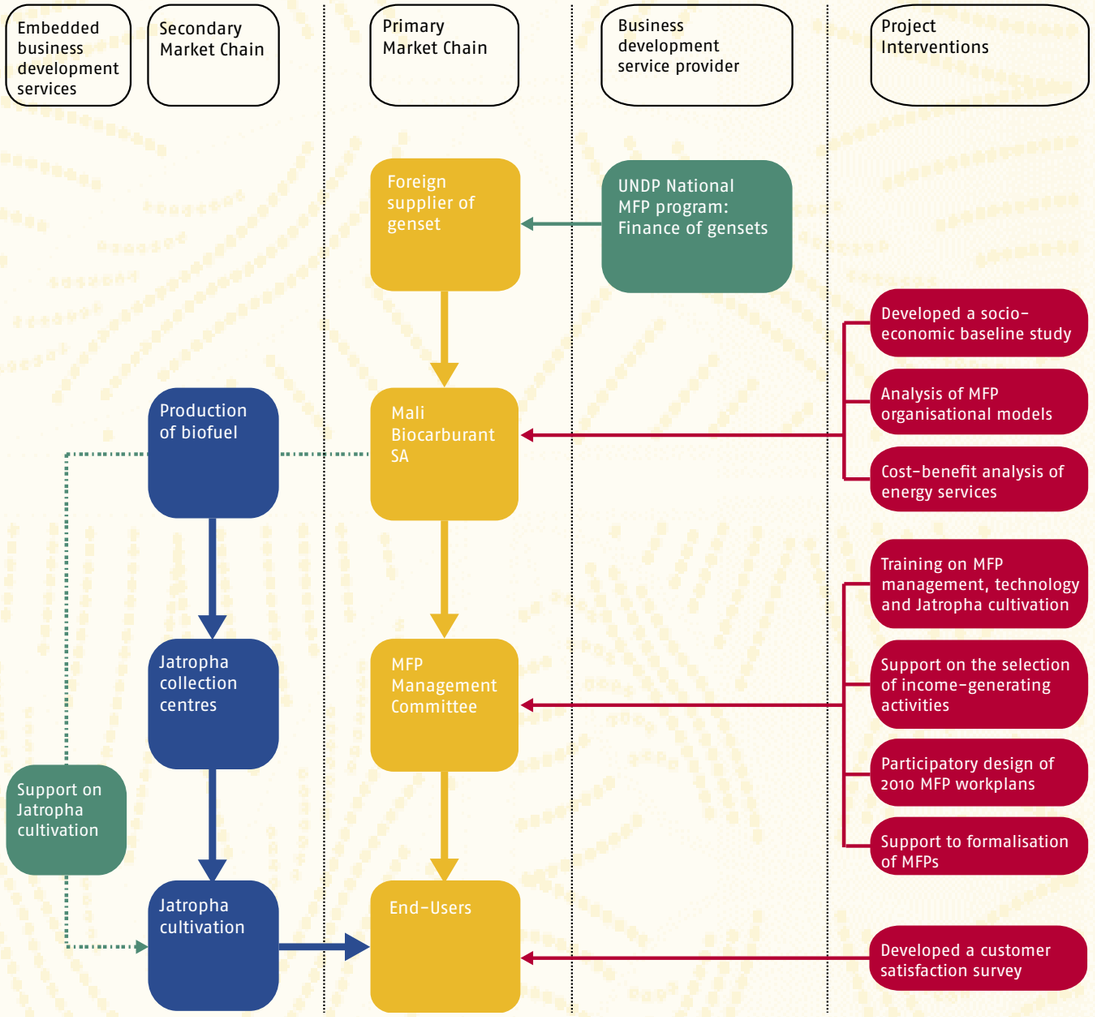
Important lessons have been learnt in the project. Rather than setting-up a Katene Kadji dealer, Katene Kadji has concluded that it is more effective to develop cooperation with blacksmiths and/or stove sellers that are already present. Further, the lack of visibility of the sales points proved a weakness, 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 Pilot	**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 brought to collection centres at MBSA or at the MFPs. MBSA transforms the Jathropa into oil which is bought by the MFPs and other end-users as fuel.

Embedded services

Support for Jatropha cultivation is provided by agricultural extension workers from Mali Biocarburant. They help the farmers by providing them with information on intercropping (growing two crops close together to make better use of the land). This increases the harvest, enhancing productivity.

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.

Ease interventions

Customer satisfaction survey

Mali Biocarburant developed a survey to assess customer satisfaction with the product in order to develop their services.

Socioeconomic 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

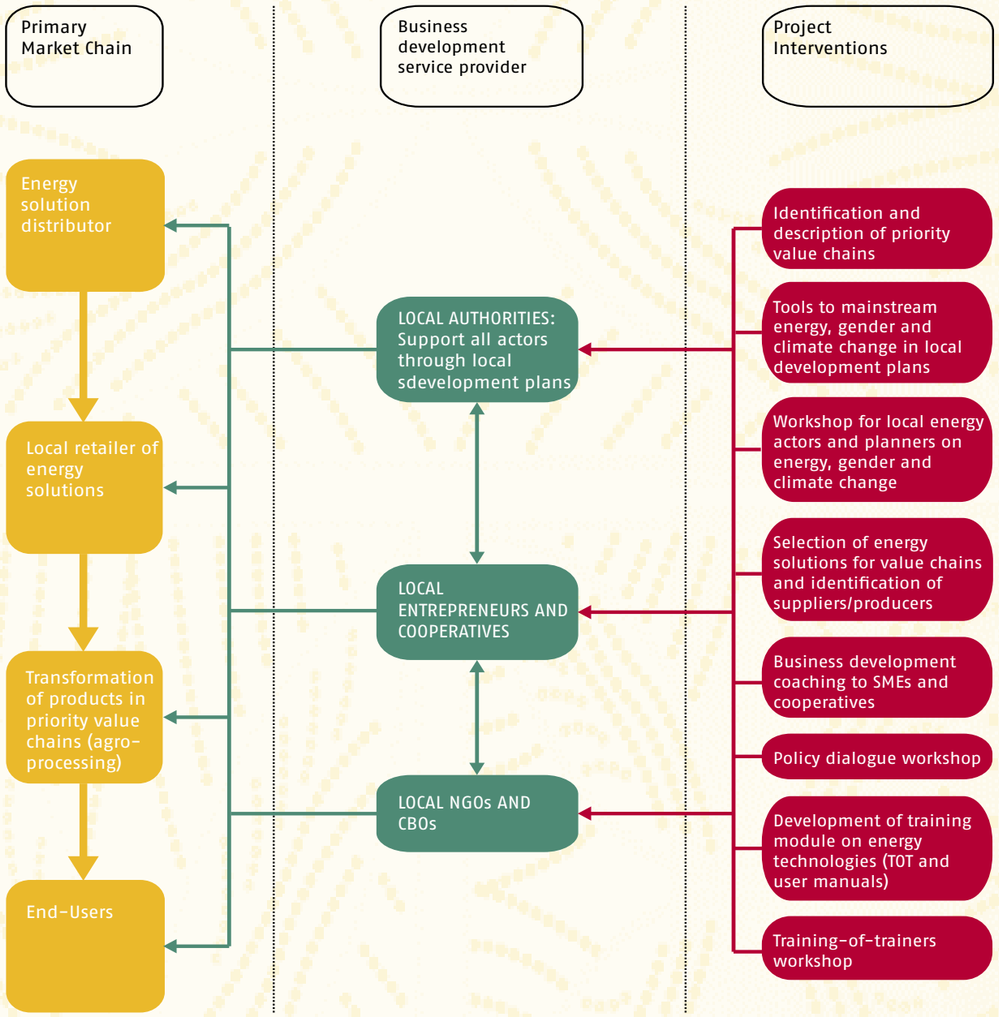
The current challenge for MBSA is how to upscale the models developed to other areas. Further, it will be a challenge to integrate Jatropha cultivation within smaller production systems. Currently, there are large production centres that cultivate the Jatropha but, since the rural population is spread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

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.	
Project partner	Mali Biocarburant SA	
Project duration	1 year First phase	**Project status:** Completed
Costs First phase	**Total Budget:** € 101,625	**Other funds:** € 47,256
Target	9 Multifunctional platforms supported 27 technicians trained and working 2,862 people have access to energy through household, social or productive uses	

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 the 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.

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.

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.

Training module on energy technologies

MFC will develop a user and training-of-trainers manual to familiarise end-users and other actors with the technology of the chosen energy solutions.

Workshop for training of trainers

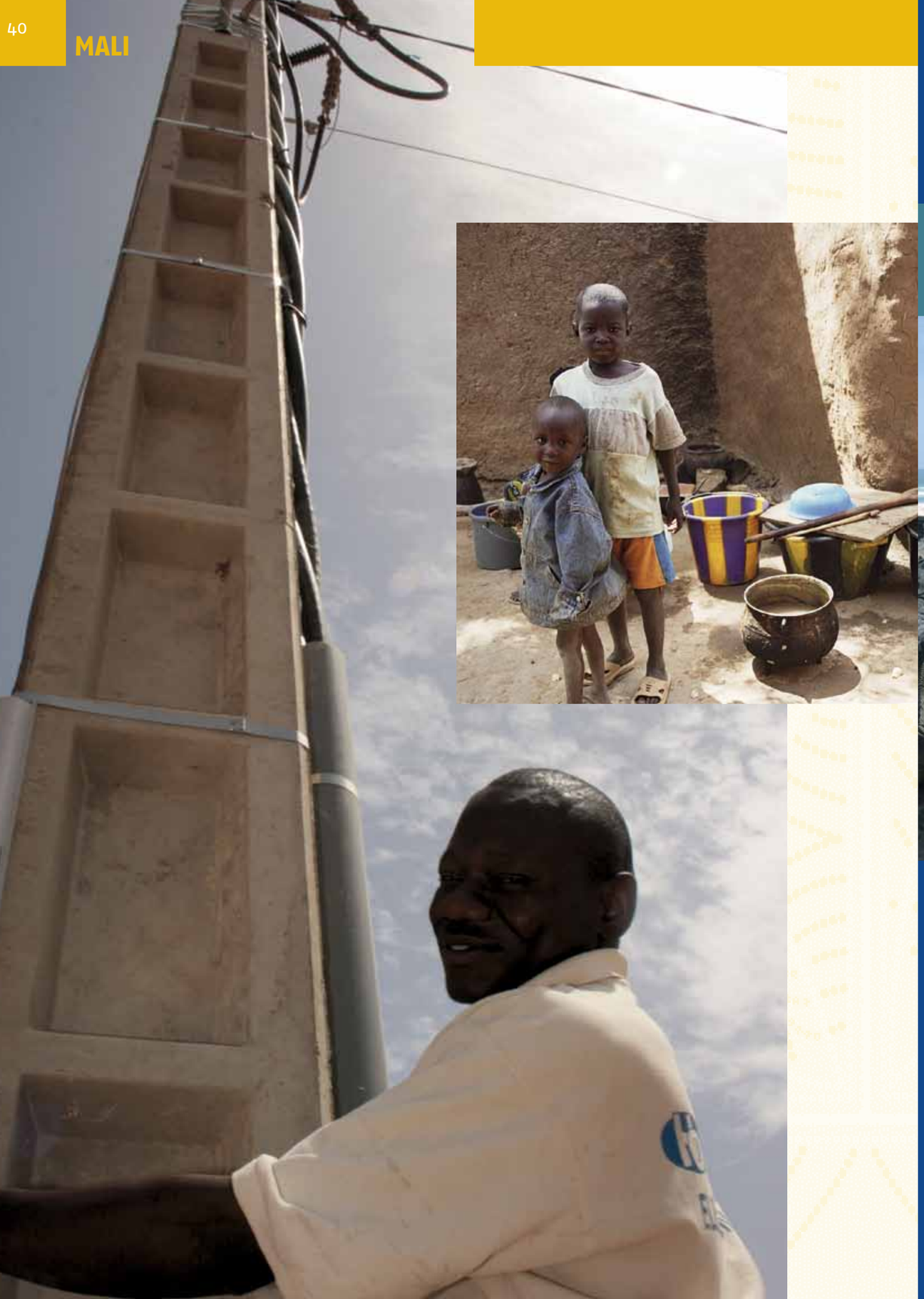
After development of a training module, a training-of-trainers course will be organised by MFC to enhance the capacity of local actors in teaching others about energy, gender and climate change.

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.

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	In Mali, municipalities (local government) have the power to guide decision-making processes and establish development strategies within their municipality. Each municipality draws up a socioeconomic and cultural development plan (PDSEC) which serves as a basis and guidelines for dialogues between donors and the community. Each plan is in place for five years. The subject of modern energy services, rural entrepreneurship, protection of the environment and climate change are generally ignored in these plans, and therefore MFC has started working with the local authorities to address these gaps.	
Project partner	MFC	
Project duration	1 year First phase	**Project status:** Ongoing
Costs First phase	**Total Budget:** € 57,558	
Target	30 cooperatives, 10 consultants and 6 technicians trained and working 4 communes, 100 villages and 80,000 people have access to energy	



Senegal

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.

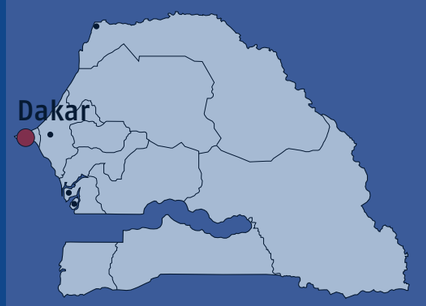
Projects Senegal:
7. Fish-smoking ovens
8. Improved ovens for bakeries
9. Mainstreaming of energy

Country facts

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

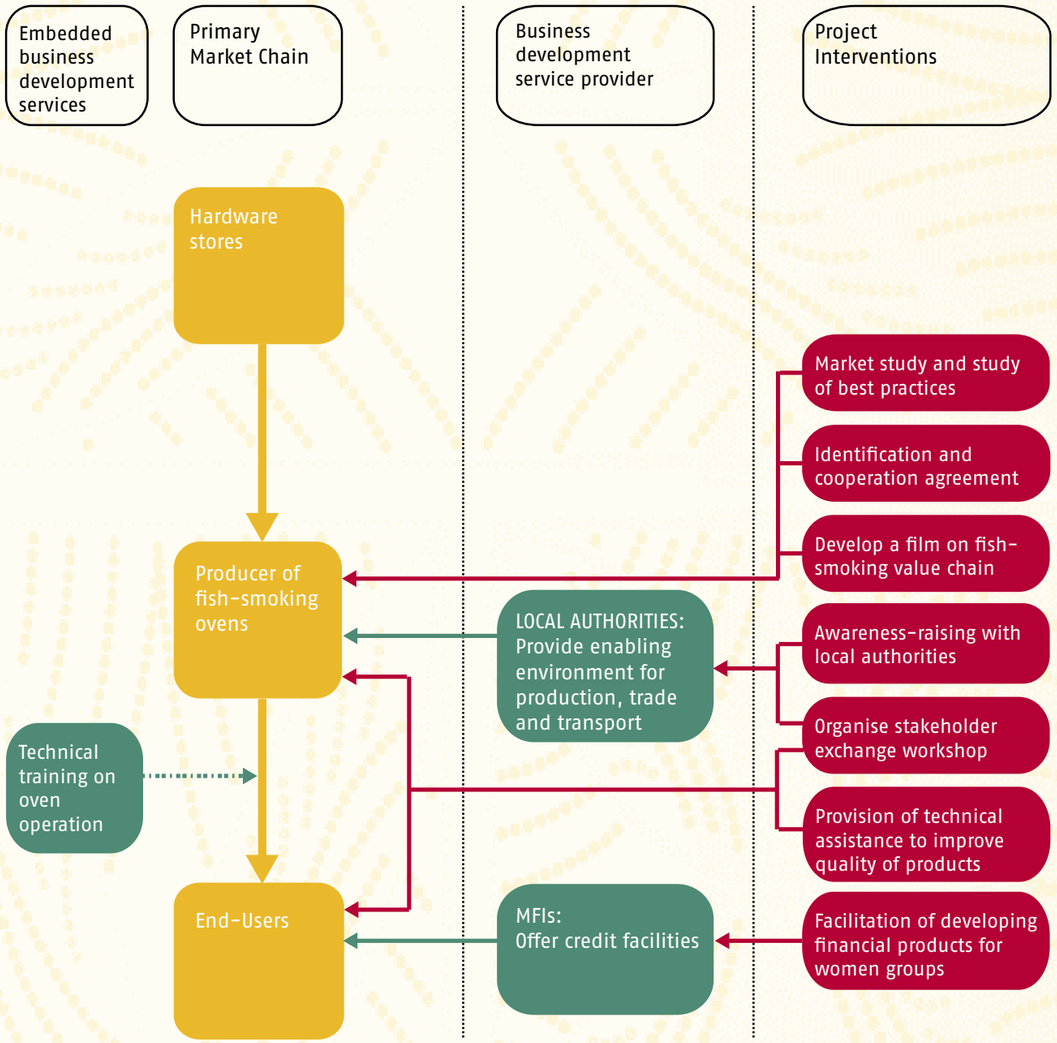
Energy facts

National electricity reach:	42%
Rural electricity reach:	18%
Modern cooking fuels:	41.1%
Rural modern cooking fuels:	12.1%



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 oven 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.

Ease 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

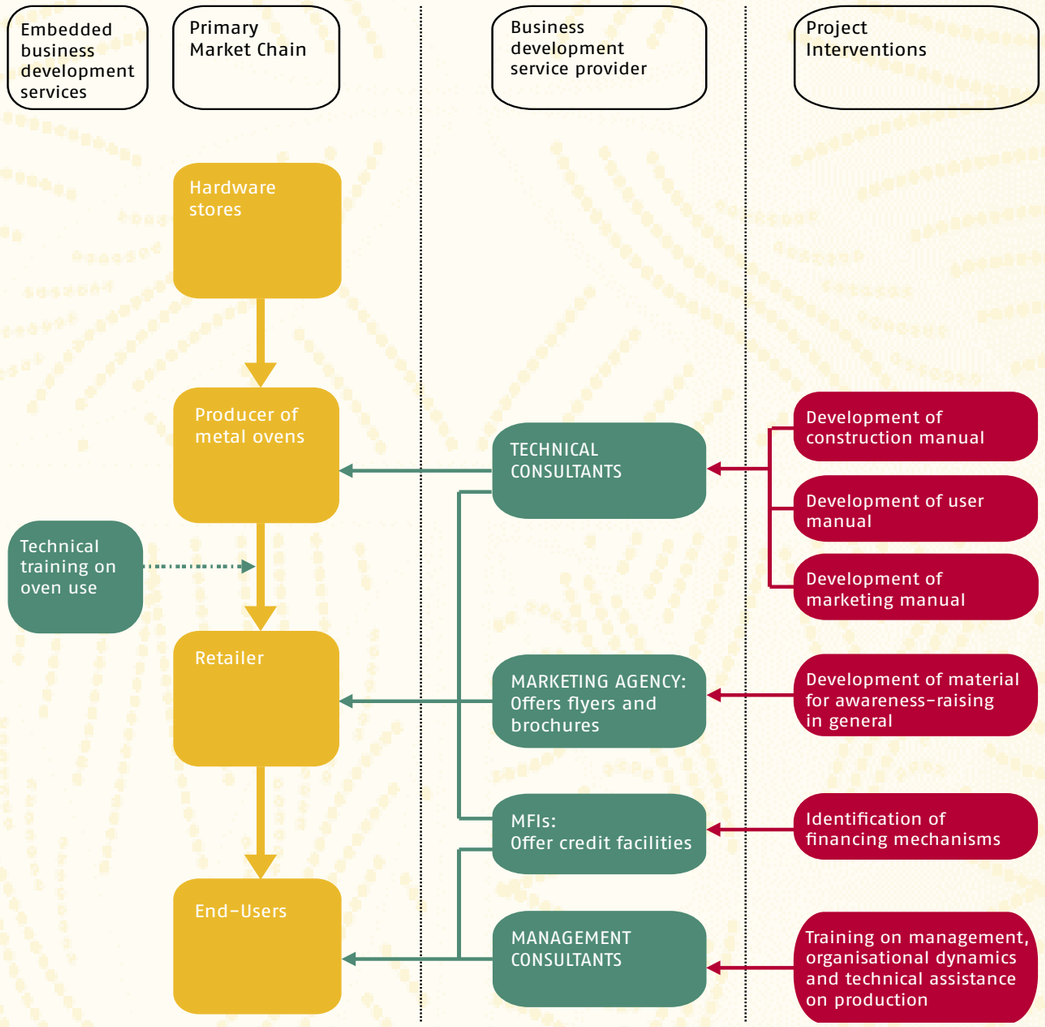
The project is still being implemented, but now that more than half the time has passed, it has become clear that there is a large number of areas in which the project could be implemented. The project currently operates on a very local scale and therefore ENDA is developing an upscaling strategy..

For more information, visit our websites: www.ease-web.org and 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 production and sales of their end products: bread, patisseries etc.

BDS providers working in the market chain

Technical consultants offer their services to the producer and the retailers and support them with manuals on 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

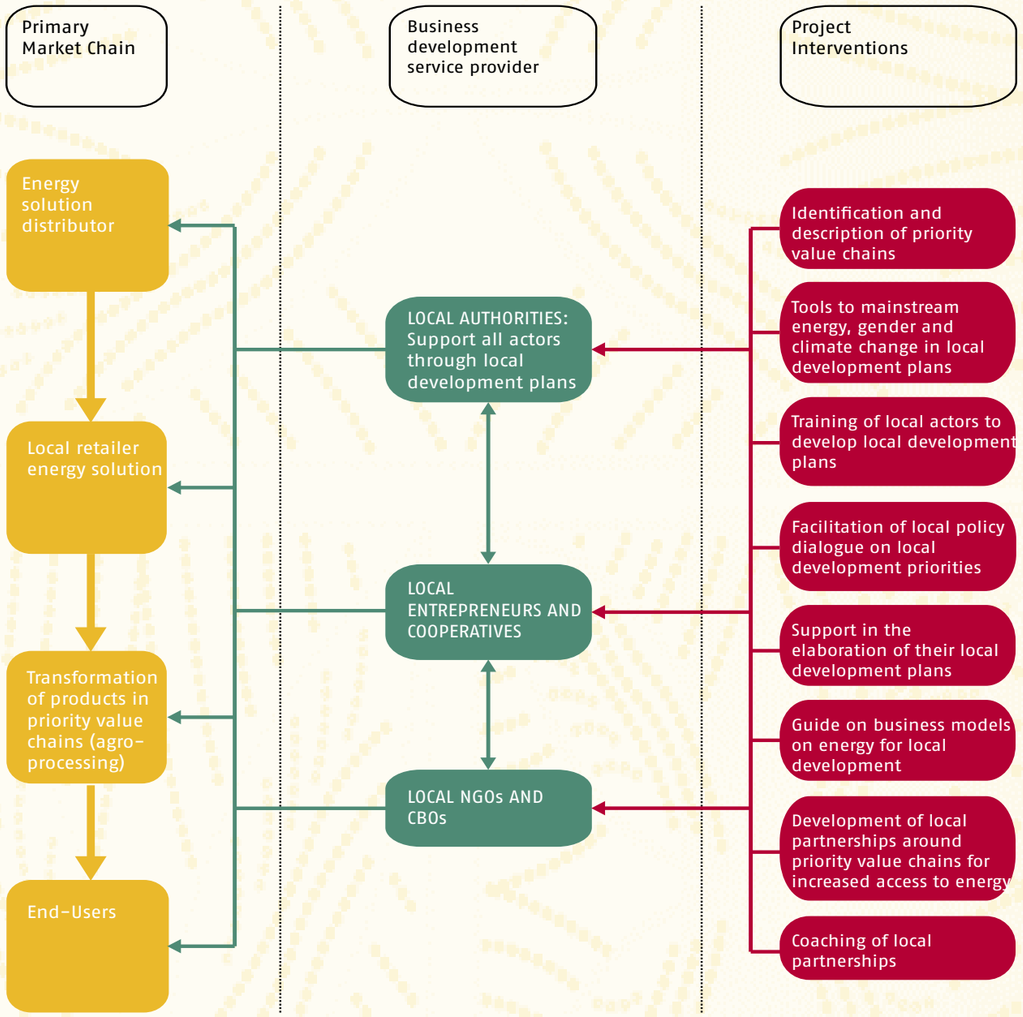
The major challenge was identifying an oven producer who was willing to play a leading role in building the market for the improved ovens. Progress was delayed as the operator was reluctant to share technical specifications of the technology. To speed progress under the project, ENDA has decided to work with more than one producer, which was the original the 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 them 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.

Ease interventions

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/.

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 in dialogues 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.	
Project partner	ENDA	
Project duration	1 year First phase	**Project status:** Ongoing
Costs First phase	**Total Budget:** € 154,536	**Other funds:** € 18,000
Target	90 local actors and 3 technicians trained and working 3 communes, 75 villages and 60,000 people have access to energy	

Tanzania

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

Country facts

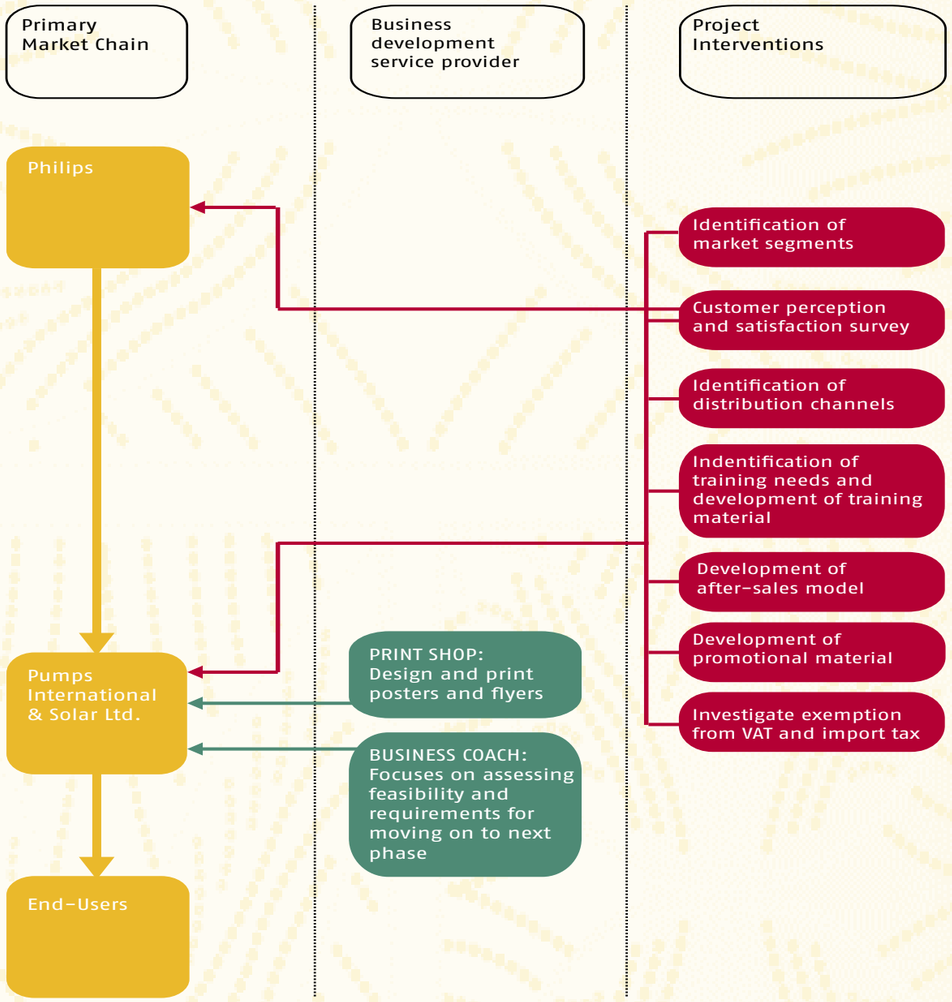
Country name:	United Republic of Tanzania
Area:	947,300 sq km
Population:	41.9 million
Rural population:	31.4 million
Life expectancy:	52 years
GDP per capita:	$ 1,400
Currency:	Tanzanian shilling (TZS), $ 1 = 1,466 TZS

Energy facts

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

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, large supermarket customers, 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.

Ease interventions

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

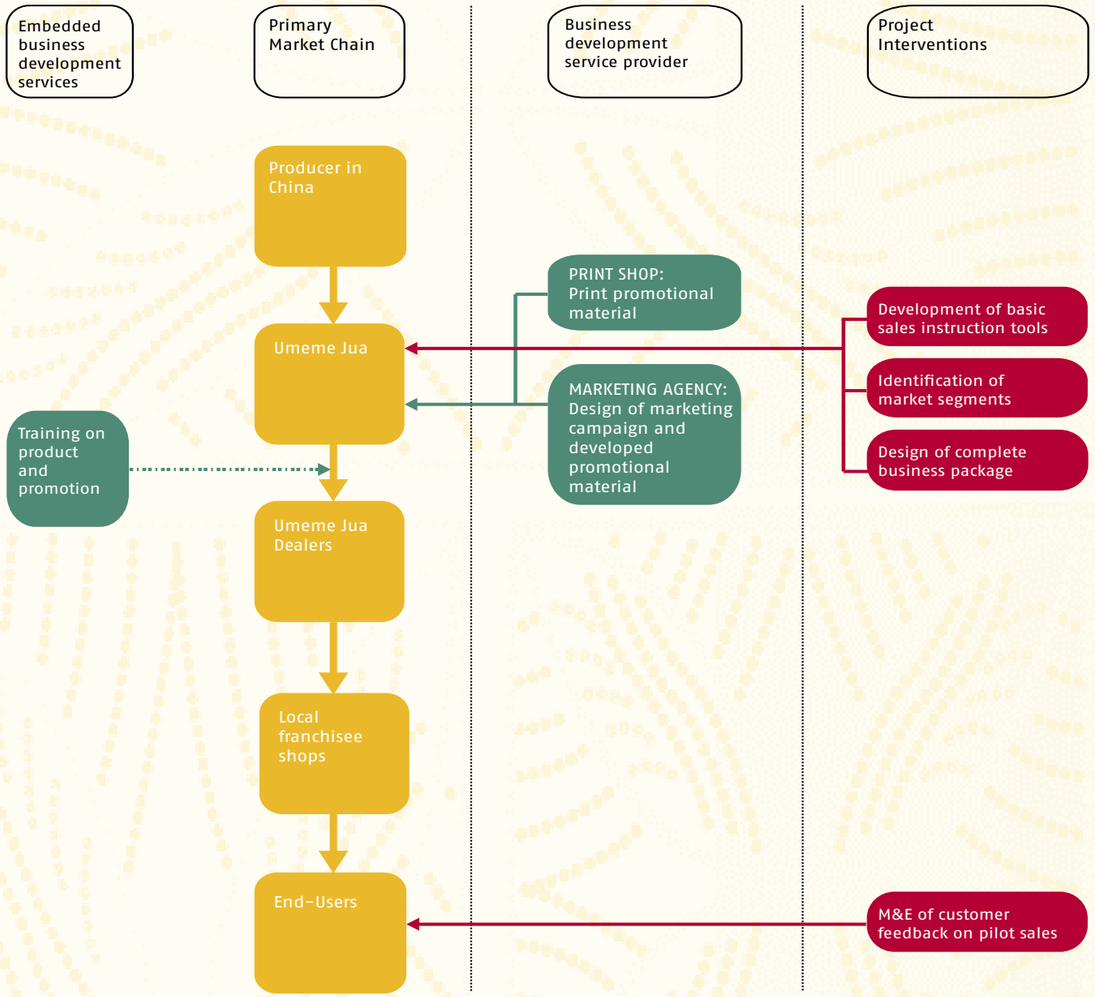
Before the product can be officially launched on the Tanzanian market, a final version of the woodstove has to be ready for sale. Once the product is ready, Pumps International & Solar has to elaborate the business model that has been developed, including promotion and after-sales services that need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

Short description of market background	In Dar-es-Salaam and its immediate surroundings, inefficient stoves are widely employed for household as well as for productive and commercial uses. Current cooking problems involve indoor air pollution due to smoke from cooking fires, and increasing charcoal prices. The Philips improved woodstove has been developed to give the poor access to cleaner cooking.	
Project partner	Pumps International & Solar	
Project duration	6 months First phase	**Project status:** Completed
Costs First phase	**Total Budget:** € 11,000	
Target	50 Philips woodstoves sold 1 market developer supported 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 focussed 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: finance, pricing, distribution, user training, troubleshooting and after-sales instruction.

Customer feedback

During the pilot selling of the LED system, Umeme Jua monitored customer feedback so as to measure customer satisfaction. Umeme Jua wanted to investigate the experiences of, and impacts on, the users (men and women) of the solar lantern. The lessons learnt through this activity could then be used as input for the next phase.

Future challenges

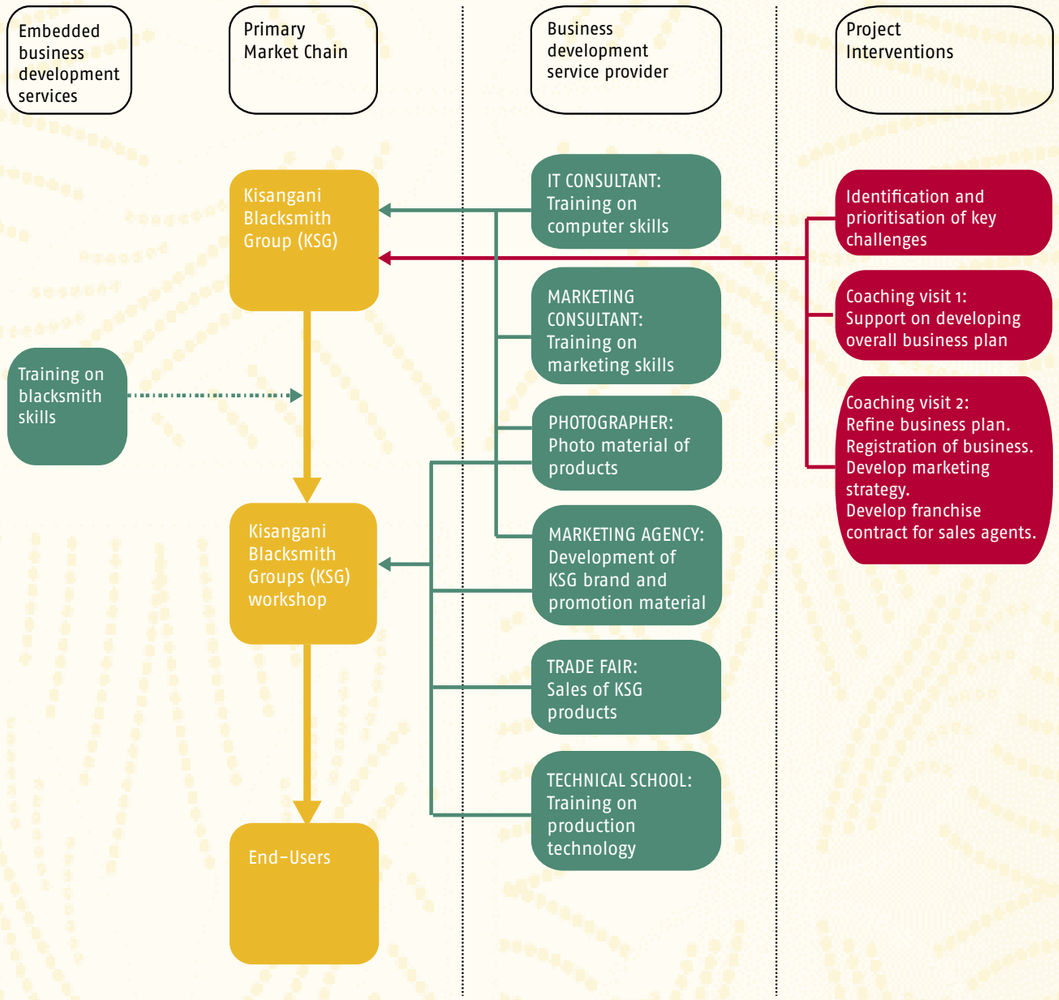
During the pilot, the sales of the LED solar systems were much faster than foreseen. Many were sold 'off the truck' during a roadshow that had been organised. As a result, it was difficult to gain in-depth insights into the most interesting market segments and customer feedback. Further, due to organisational challenges facing the company, the full-scale introduction of the product was postponed.

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	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	**Project status:** Completed
Costs First phase	**Total Budget:** € 20,200	
Target	1,000 solar LED lanterns sold 1 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 make and sell tools. Existing sales show a growth in the market potential of 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 (franchise) 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

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 for 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

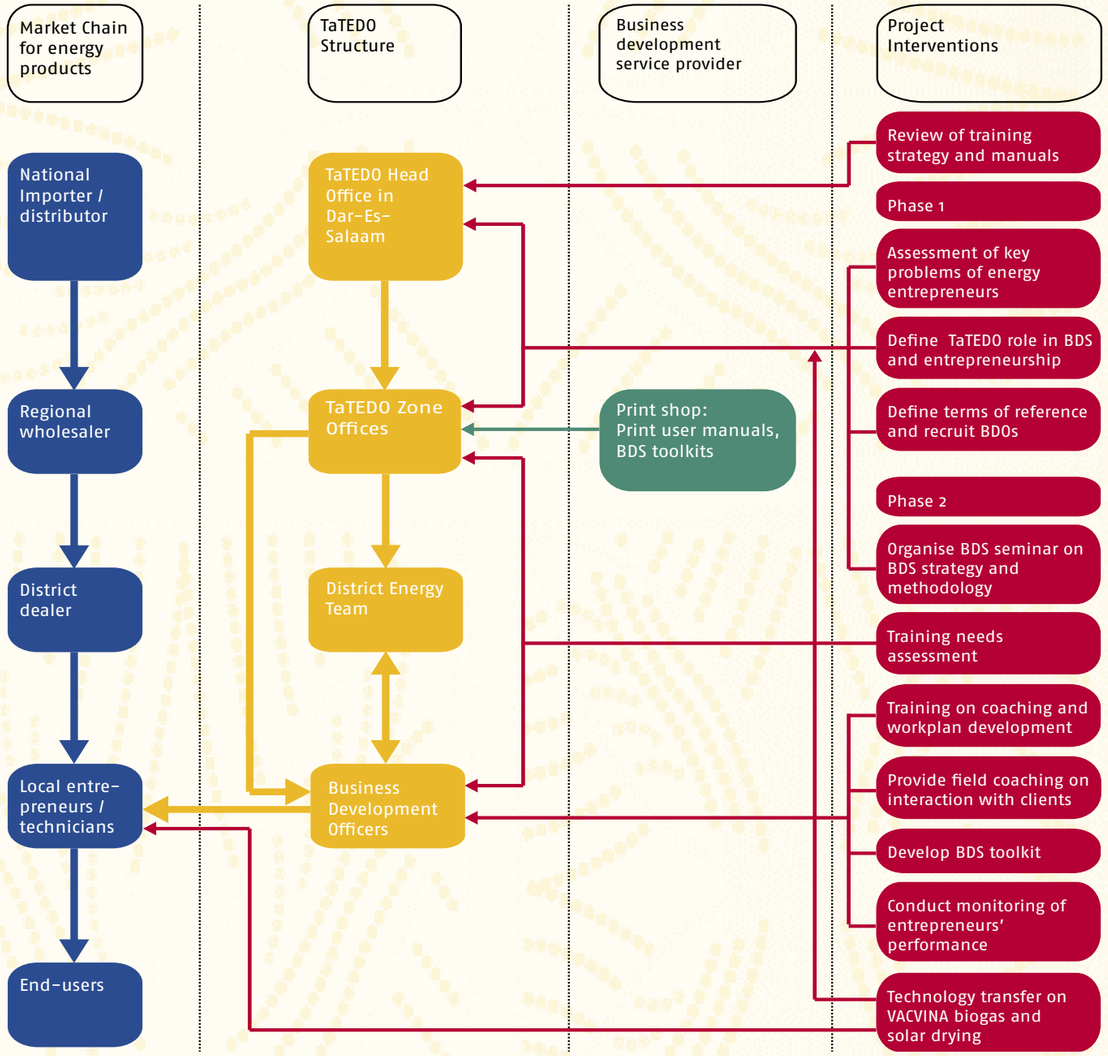
Previously, KSG had combined business activities with charity work. To create greater transparency, management decided to create a new company to house the commercial activities. A key challenge for KSG was to develop its markets in order to be profitable. A draft project proposal is in the pipeline 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'.

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	KSG is based in Njombe, in the south of Tanzania, and there is a lot of sawdust available in this area due to the timber and furniture industries. KSG started selling sawdust cookstoves in 2005, and it has proven successful, their market is expanding continuously.	
Project partner	Kisangani Blacksmith Group	
Project duration	3 months First phase (coaching)	**Project status:** Completed (but follow-up project proposal in pipeline)
Costs First phase	**Total Budget:** € 7,017	**Own contribution:** -
Target	1 market developer supported	

Capacity building – Strengthening TaTEDO's capacity

By TaTEDO in Tanzania



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.

BDS providers working in the market chain

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.

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 embed BDS capacity within the organisation. Phase 2 will assess the effectiveness and efficiency of this decision.

BDS training needs assessment

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 CCRD on VACVINA biogas technology and with Energética on solar drying technology.

Training strategy and manual review

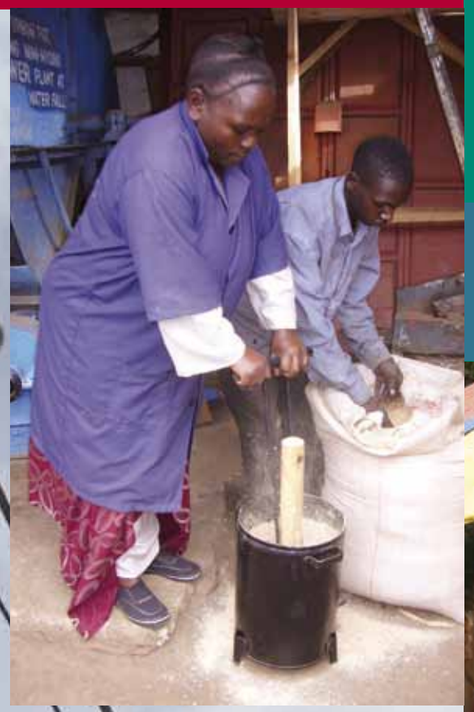
The provision of quality training to builders, sellers and users of energy technologies is a key element in TaTEDO's strategic plan. Through an ETC consultant on technical training, the TaTEDO training strategy and the manuals were reviewed.

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 years First phase Second phase	**Project status:** Completed Ongoing
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.

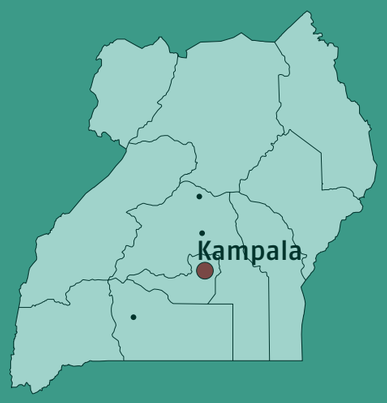
Projects Uganda:
21. Multifunctional platforms
22. Solar lighting

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

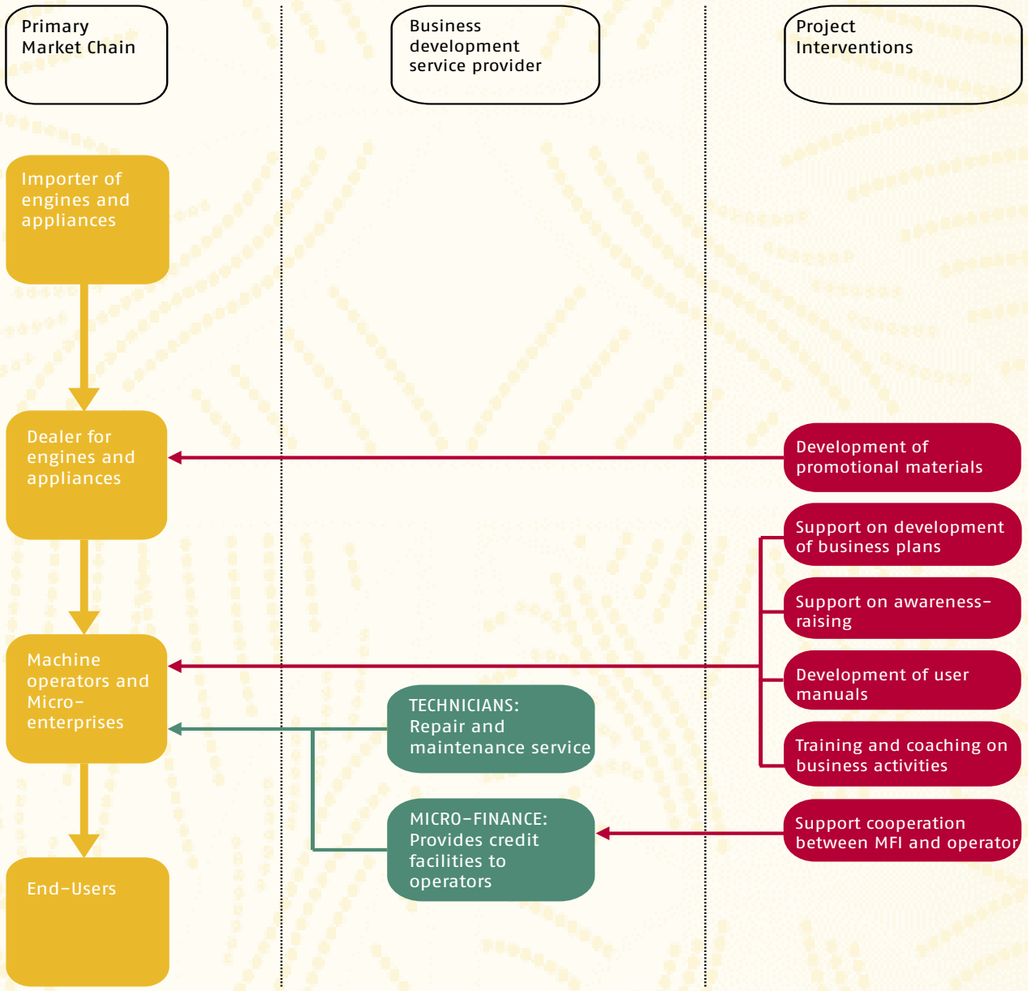
Energy facts

National electricity reach:	9%
Rural electricity reach:	4%
Modern cooking fuels:	0.4%
Rural modern cooking fuels:	0.1%



MFP – Transformation of rice and maize mills into MFPs

By Vedco in Uganda



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 communes 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.

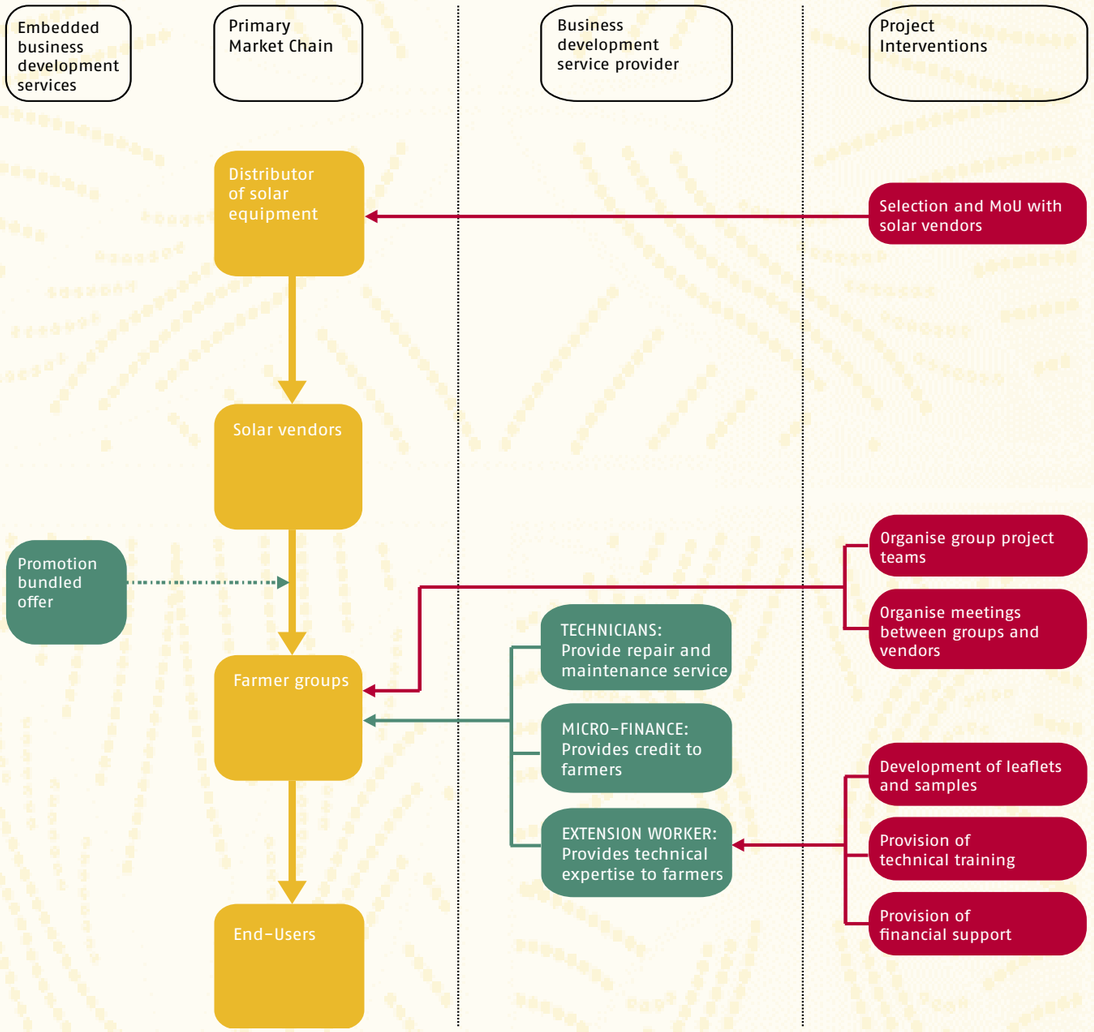
To ensure the project is really successful, the farmer groups and operators need to get accelerated access to similar business experiences in the country, preferably through exchange visits and peer-to-peer coaching.

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

Short description of market background	There are a few lead firms that import diesels and machines and tools for agricultural processing. These are sold only on a small scale in rural areas, but they do have the potential to be extended into multifunctional platforms.	
Project partner	Vedco	
Project duration	1 year First phase	**Project status:** Ongoing
Costs First province	**Total Budget:** € 58,156	**Local funds:** € 8,183
Target	2 milling plants supported 5 SMEs supported 1,270 people have access to energy	

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 groups, 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.

Ease interventions

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.

Technical training material

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.

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

Short description of market background	Solar product outlets are mostly centred in and around Kampala, with only a few distributors in the more rural areas. The solar products usually have to be paid for largely in advance, and the installing technician has to travel to the household, making the process a long and expensive one.	
Project partner	Send a Cow Uganda	
Project duration	8 months First province	**Project status:** Ongoing
Costs First province	**Total Budget:** € 19,840	
Target	50 – 100 solar systems will be sold 1 solar distributor supported and 2 rural groups supported 300 - 600 people will have access to energy	

Vietnam

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:

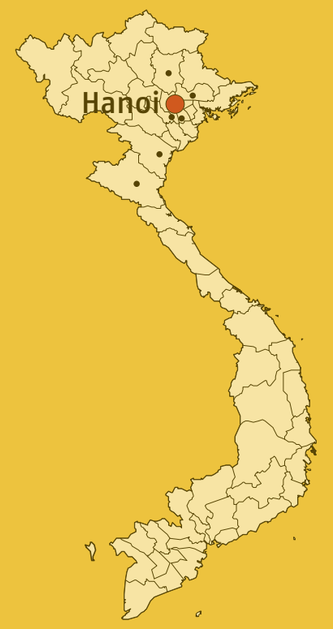
23. **Biogas market development project by CCRD**
24. **Promoting private biogas enterprises by RCEE**
25. **Biogas generator market development by RCEE**
26. **Marketing of improved cookstoves by PED**

Country facts

Country name:	Socialist Republic of Vietnam
Area:	331,210 sq km
Population:	88.5 million
Rural population:	63.7 million
Life expectancy:	72 years
GDP per capita:	$ 2,900
Currency:	Vietnamese Dong (VND), $ 1 = 18.83 VND

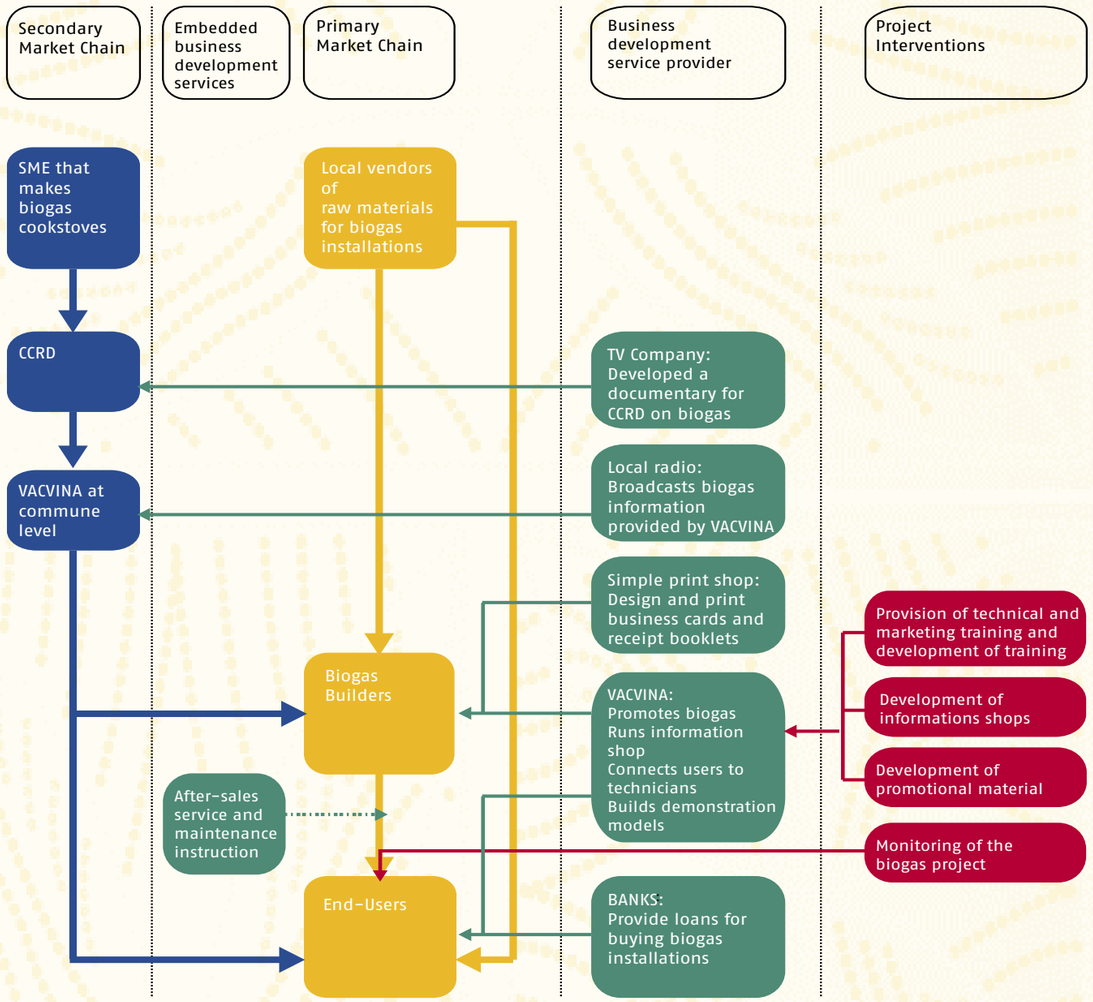
Energy facts

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, sends an order for cookstoves to CCRD who then deliver them to VACVINA. They then distribute the stoves to the households or the technicians according to the wishes of the end-user.

BDS providers working in the market chain

The main service provider in this market chain is VACVINA who provide services to the biogas installation supply chain on provincial, district and commune levels. Most support by VACVINA is provided at the commune level. At provincial and district levels, VACVINA's input is limited to selecting districts or communes that have biogas potential.

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 pro's and con's of models, and therefore information shops were established.

Ease interventions

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.

User manual

CCRD has developed a user manual that biogas builders disseminate to end-users. This is followed up by monthly meetings with all farmers that use biogas to exchange experiences and help one another with solutions.

Questionnaires for technicians and communes

Questionnaires are used to assess interest in biogas installations and to evaluate the level of satisfaction with biogas. The questionnaires were developed by CCRD and are used to provide feedback to builders and VACVINA once a system has been installed.

Future challenges

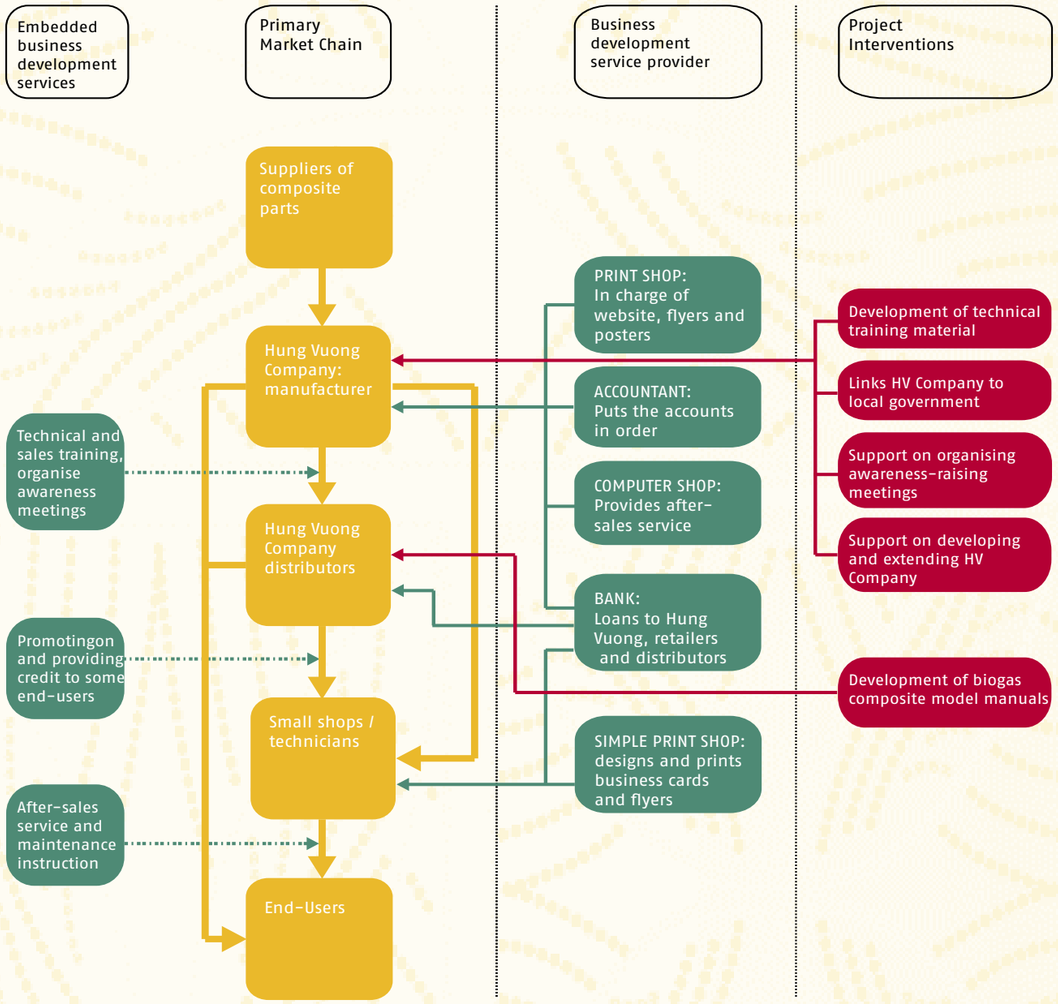
Since there is no distribution network, most of the products for a biogas installation are sourced locally. Given that most actors in the supply chain operate on the local level, the challenge is how to bring the supply chain to new areas. CCRD is currently cooperating with the VACVINA network to accomplish this.

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	Biogas is a common technology in Vietnam and various Biogas projects have been executed by NGOs. The market is sufficiently attractive for commercial actors as is evidenced by one company starting to sell biogas installations.	
Project partner	CCRD	
Project duration	4 years Pilot phase First province Expansion to a new province	**Project status:** Completed Completed Ongoing
Costs Pilot phase First province Expansion	**Total Budget:** € 26,100 € 54,445 € 118,587	**Own contribution:** € 7,245 € 58,986
Target	877 biogas installations active 85 technicians trained and working 4385 people have access to modern energy	

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 organises 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 their network and reach more end-users while, at the same time, offering more services to distinguish themselves from the other actors in this field.

Ease interventions

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.

Demonstration models

In each new district, demonstration models were built to familiarise potential clients with biogas products. Distributors were responsible for building these models.

User manual

RCEE developed a DVD with guidelines on how to operate and maintain the product, and this was disseminated by distributors to small shops and end-users.

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.

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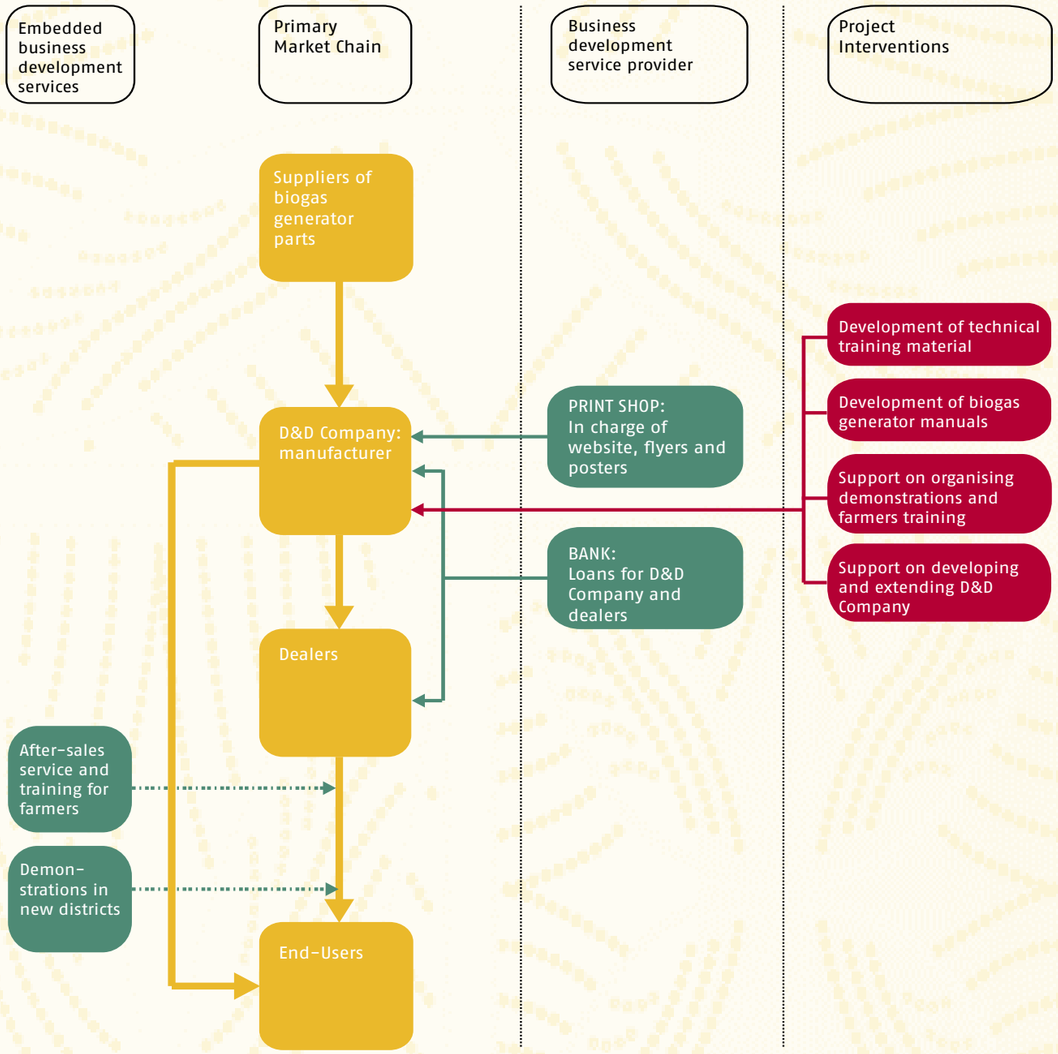
Profiles on market actors, service providers and project interventions can also be found there.

Short description of market background	Biogas is a common technology in Vietnam, and there are various biogas projects being executed by NGOs. The market is sufficient to interest commercial actors, evidenced by one company starting to sell biogas installations.	
Project partner	RCEE	
Project duration	1 years First phase	**Project status:** Ongoing
Costs First phase	**Total Budget:** € 61,334	**Own contribution:** € 8,070
Target	140 biogas installations installed, 216 maintained 5 distributors trained and working 1780 people have access to modern energy	

Biogas installations – Biogas electricity generator

By RCEE in Vietnam



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.

Ease interventions

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

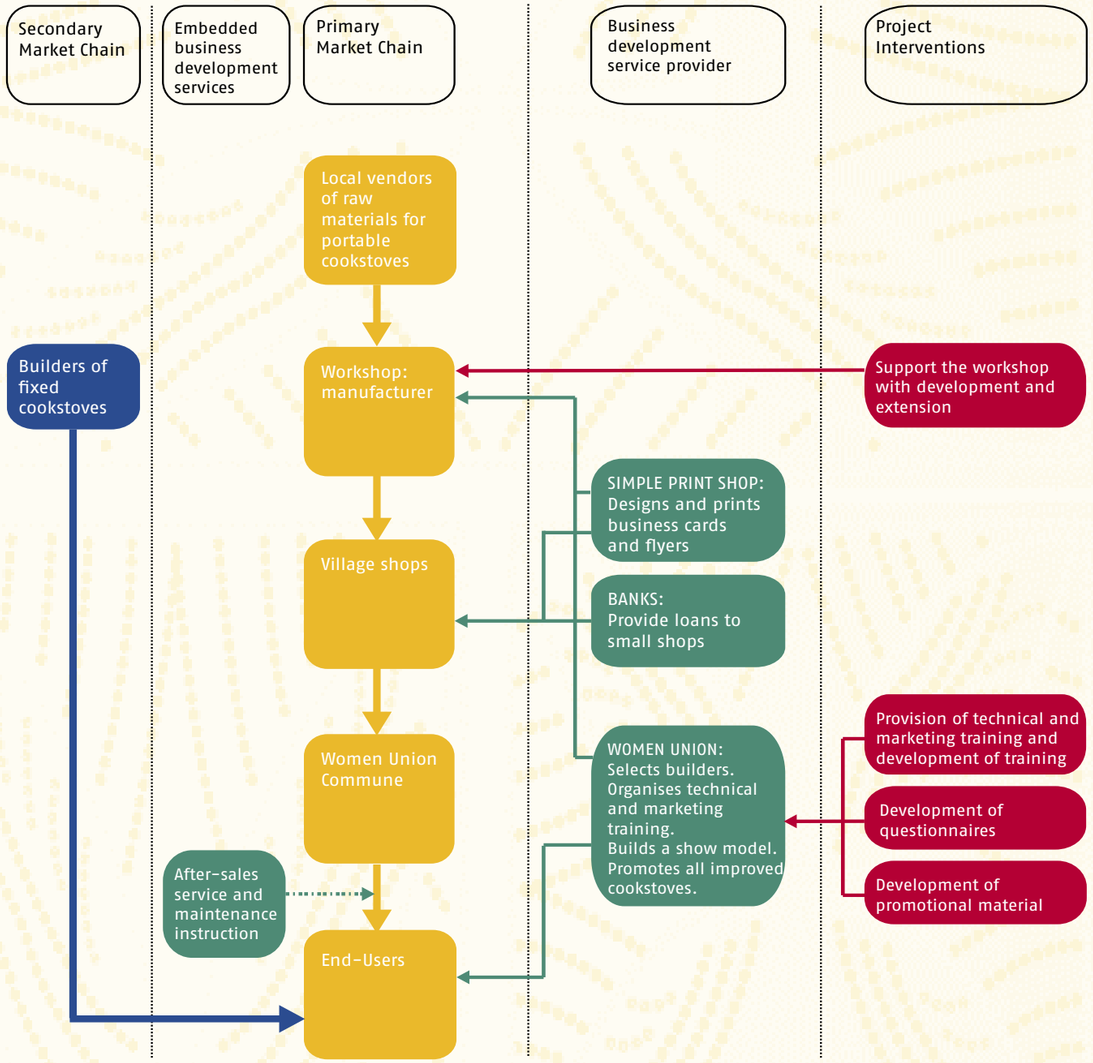
For D&D, the current challenges lay in market assessment and developing a distribution channel. They are not sufficiently large to conduct their own market assessment but it is very important to get a good overview of the demand for their products. Their distribution network is small and they need to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

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	Biogas is a common technology in Vietnam, and the use of generators for electricity production is also common. Generators that work on biogas have not been that common, but the market is rapidly expanding.	
Project partner	RCEE	
Project duration	3 years Pilot First province	**Project status:** Completed Ongoing
Costs Pilot First province	**Total Budget:** € 10.245 € 25,378	**Other funds:** € 4,000 € 6,000
Target	70 biogas generators installed 4 technicians trained and working 350 people have access to modern energy	

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. This training is disseminated by PED.

Questionnaires for communes and households

Questionnaires for communes and households were developed to gain an overview of cooking habits and ICS interest. These were used by PED staff in cooperation with the Women Union.

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.

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	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 Pilot First phase	**Project status:** Completed Ongoing
Costs Pilot First phase	**Total Budget:** € 20,602 € 47,589	**Own contribution:** € 1,450
Target	2,626 improved cookstoves installed 66 builders trained and working 13,130 people have access to modern energy	

VIETNAM

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 Cochamba
Energética	Energy for development
MEM	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
ICOPRODAC	Improved Cookstoves Producers and Distributors Association
VATTANAK	Improved stove design for the production of palm sugar developed by Geres

Laos

ELC	Electronic Load Controller
LIRE	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 FolkeCenter
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
TaTEDO	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
VACVINA	Gardening Association of Vietnam
WU	Women Union of Vietnam