North Africa • Morocco

Microfinance for Liquefied Petroleum Gas

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Sector • Energy
Enterprise Class • Nonprofit
Executive Summary

In many developing countries there is still a high dependence on traditional biomass fuel in rural areas. This dependence contributes to deforestation and environmental degradation and increases greenhouse gas emission. People in rural areas use wood, animal dung, crop residue and kerosene for many of their energy needs such as cooking, lighting and heating. These traditional energy sources in addition to their negative impact on the environment have several other impacts. On one hand, there are social impacts which include gender inequality, and children’s and women’s health issues. In rural areas women shoulder the responsibility for collecting and hauling traditional biomass fuel over long distances in addition to other subsistence activities. This overburden forces women to keep their daughters away from school to help them with household chores. This leads to a decreased literacy rate among rural young girls and health problems due to indoor air pollution resulting from poorly ventilated cooking areas. According to the World Health Organization (WHO), smoke in homes is the fourth leading cause of death and disease in the world’s poorest countries. There are also economic impacts. Unavailability of energy services affects opportunities for income generation for both men and women in rural areas. Activities such as food processing, pottery activities and water pumping for agriculture are all productive activities that could be improved and enhanced using energy services.

International organizations, both public and private, have taken the initiative by partnering to provide rural communities with cleaner, safer and more sustainable energy. An example of such initiative is the ‘Liquefied Petroleum (LP) Gas Rural Energy Challenge’ which was launched in 2002 with the aim of achieving the following objectives: to provide access to clean energy through use of LP Gas, to improve the standard of living in rural areas and at the same time create viable and commercially sustainable LP Gas markets in rural areas of developing countries. This initiative is a public-private partnership between UNDP and the World LP Gas Association (WLPGA). LP Gas represents a safe and clean alternative to traditional energy sources. According to WHO, LP Gas is a cost-effective solution for reducing pollution from cooking fuels.

The LP Gas Rural Energy Challenge was initially launched through a series of workshops in six different pilot countries. Morocco is one of these countries that hosted a workshop in 2004 where different stakeholders gathered to discuss and propose concrete steps to establish a viable and sustainable rural market for LP Gas as a way to fight poverty and improve the quality of life in rural areas. The workshop resulted in a microfinance initiative aiming at financing LP Gas based businesses. Three LP Gas operators in Morocco contributed funds to the initiative and a microfinance institution joined to manage the loan process. The project has been successful as 135 loans were given to small and micro businesses in different sectors such as to hotels, restaurants and artisanal work. Based on the blueprints of this project in

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Morocco, UNDP and WLPGA successfully replicated the project in Colombia. Projects are underway to use the same template in other developing countries.

“Microfinance offers an ideal template for overcoming some of the difficulties in increasing access to energy services that are so important to development. If appropriately designed, microfinance loans for energy services or ‘energy lending’ can provide whole communities with access to high quality energy services. In doing so, such loans can offset the high upfront cost associated with clean, modern energy technologies such as LP Gas and help to create long-term sustainable development in areas and communities that need it most.”

Michael Kelly, Director, Market Development, World LP Gas Association

Introduction

Using energy sources we are able to cook our food, light, cool and heat our homes, schools and hospitals. It is the vital force that powers economies. Business, manufacturing, and transportation all depend on energy. Energy is the lifeblood of development. Yet, access to energy remains a major challenge worldwide and particularly in developing countries. About one third of the world’s population lacks access to modern energy services and thus face challenges in economic, social and environmental development. In order to facilitate access to energy to destitute populations in developing countries, especially those in remote rural areas, several world organizations introduced initiatives. One of these initiatives is the Liquefied Petroleum Gas Rural Energy Challenge which aims at promoting the use of Liquefied Petroleum (LP) Gas as a source of energy. LP Gas is propane or butane or a mix of the two. LP Gas is chosen mainly because it is clean, safe, easily accessible and cost-effective. It has a huge environmental advantage over other petroleum energy sources as it has low contaminant emissions.2

The LP Gas Rural Energy Challenge was launched in 2002 as a partnership between the United Nations Development Programme (UNDP) and the World LP Gas Association (WLPGA) to promote the use of LP Gas as a clean and safe energy source for the rural communities all over the world while developing new markets for LP Gas. Morocco was among six pilot countries (Ghana, Honduras, South Africa, Vietnam and China) that were selected to host workshops to disseminate the information about the initiative and to attract potential partners to help support the project. These countries were selected based on three main criteria: (1) willingness and engagement of local LP Gas industry operators; (2) willingness and support of local government; and (3) availability of experienced microfinance institutions and developed microfinance market. Different projects were initiated from the workshops held in the six pilot countries. In Morocco, the workshop, which was held in 2004 in Marrakech, was well-attended by different actors from the government, LP Gas operators, non-governmental organizations (NGOs) and microfinance institutions. This workshop led to the launch of the Microfinance for LP Gas concept to encourage potential LP Gas based

2 WLPGA web site
business projects to overcome the upfront often inhibiting cost of acquiring LP Gas equipments and cylinders. WLPGA considers this project an innovative approach to encouraging the widespread use of LP Gas in rural areas. “This is the first time the loan is linked to the use of LP Gas, rather than the business initiative itself, so it is very exciting.”

**Market and Location Context**

Situated in the northwest corner of the African continent, Morocco has about 32 million inhabitants. Morocco is a developing country facing several challenges. Of the economically active population, 30% is unemployed and about 5.3 million Moroccans live in poverty most of whom live in rural areas. Some of these rural areas rely on traditional biomass sources such as wood, charcoal, animal dung and crop residues for their energy needs. In fact biomass energy accounts for 30% of the energy balance of the country (see Figure 1). The annual wood consumption is estimated at 7.4 million tons with production at only 2.6 million tons creating a deficit of 4.8 million tons annually. Forests are disappearing at an annual rate of 35,000 hectares. Concomitantly, heavy reliance on traditional biomass leads to gender inequality, which stems from the fact that rural women are forced to spend many hours collecting wood and traveling longer distances everyday as deforestation and degradation worsens. This overburdens women who are more likely to keep their daughters at home to help with domestic chores, hence limiting their chances to go to school and furthermore decreasing their likelihood of escaping poverty. Additionally, traditional biomass energy is known for its indoor air pollution. According to the WHO, “…smoke from indoor cooking fires kills 1.6 million people every year, more people than malaria, and almost as many as unsafe water and sanitation.”

**Figure 1: Energy Consumption of Morocco for 1980 and 2006**

Source: Benkhadra, 2008

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3 WLPGA, Annual report (2006, p. 22)
5 Simonis, P. “Household Energy in Cold Regions of Morocco”
Despite the above mentioned negative impacts, traditional biomass fuel remains a preferred and viable energy source for the poor in rural areas because it is free of charge compared to other energy sources which cost more and require specific equipment and appliances.

LIQUEFIED PETROLEUM GAS IN MOROCCO
Almost all households in Morocco in both rural and urban areas use LP Gas. It is mostly used for cooking and lighting except in remote rural areas where there is a weak distribution network of LP Gas. LP Gas is also used in water pumping and irrigation. Due to the relative high cost of LP gas in rural areas, it is often used in combination with other traditional energy sources such as charcoal, wood, animal dung etc. In 2006, the cost of a 12 kg LP Gas cylinder was about 25% more in rural areas than in urban areas (US$6.25 vs. US$5 respectively). This is mainly due to the bad road conditions which lead to a high cost of transportation. The average cost of energy for the poor in Morocco represents 8% to 9% of household spending.

In Morocco, LP Gas is subsidized and its price is regulated by the government to make it more affordable. Both the retail price and the distributors’ margin are fixed by the Ministry of Energy and Mines. Half of the LP Gas unit prices are subsidized by the government. This subsidy was instituted mainly to encourage people, especially in rural areas, to adopt LP Gas instead of wood as a source of energy for cooking and heating. The government has put in place several reforms to make LP gas more affordable. It has decreased the value added tax by 7% and 9% for the 12 kg cylinders and 3 kg cylinders respectively. Additionally, the importation tax has been reduced from 17% to 2.5%. However, as oil prices increase and consumption continues to surge, this subsidy represents a heavy burden on the government budget. As a result, the Moroccan Government has tried to increase the LP Gas prices however, recent research has shown that in case of LP Gas price increase there is high probability that the most vulnerable households, mostly those in rural areas, will abandon its usage and switch back to traditional energy sources such as wood and charcoal.

Morocco produces about 12% of its LP Gas needs. The LP Gas consumption level is about 1,780,000 tons, whereas production is only about 190,000 tons, which increased by 11.8% from 2007 to 2008. Its use per capita per year is about 40 kg. It is used primarily in the domestic and industrial markets. One of the main barriers to the widespread use of LP Gas in rural areas is the initial upfront cost of acquiring the LP Gas cylinders and appliances that are compatible with LP Gas. Hence, microfinance presents a viable solution to overcome this main barrier.

MICROFINANCE IN MOROCCO

8 Ibid.
9 Ibid.
10 Interview with Michael Kelly
Since the mid-1990s, Morocco has been promoting the development of micro-credit. In 1999, the government passed the Microfinance Act which provides a legal framework for microfinance in Morocco.\textsuperscript{11} Believing in the potential of micro-credit in the country’s development, the Moroccan Government invested about 10 million Euros into the sector. Micro-credit has been shown to improve lives.\textsuperscript{12} “Micro-credit changes lives. When people can earn a living in rural areas there is less exodus to cities and less violence. Through micro-credit people can have an objective in their lives and improve their quality of life step by step” said Said Mouline, Director of the Center for Renewable Energy Development (CDER).

Today, the microfinance sector is well developed. Half of the micro-entrepreneurs in the Arab States are Moroccan.\textsuperscript{13} About 1.5 million Moroccans have benefited from micro-credit, and today there are 500,000 active clients. On average, micro loans in general are about US$200 typically reimbursed over a three-month period. Loans can be made to individuals or groups. The groups are usually composed of four to five individuals who serve as each other’s collateral in case of defaults. Generally, the principle beneficiaries are artisans, craftsmen, service providers and manual laborers.

The micro-credit sector in Morocco is quite successful and competitive. There are 12 non-profit organizations that provide micro-credit throughout the country. To increase the transparency and solvency of the sector, a national credit bureau was created in 2007 to gather information about micro-credit recipients. This database shows the credit history of each new borrower which will improve fund recovery. This initiative is supported by the Central Bank of Morocco.

**Description of the Business Model**

In May 2004, UNDP and WLPGA with the support of the Ministry of Energy and Mines organized a multi-stakeholder workshop in Marrakech. The main goal of the workshop was to bring together NGO’s, public and private institutions to identify activities and projects to facilitate access to LP Gas and its related equipment, improve safety regulations and increase awareness of LP Gas use and benefits for rural areas. A major outcome of the workshop was the microfinance pilot project which was initiated in partnership with three LP Gas companies (council members of the WLPGA) – Afriquia Gaz, Shell Morocco and Total Maroc – and one of the major microfinance institutions in Morocco, Zakoura Foundation. The main objectives of this partnership are to (1) enhance the use of LP Gas in rural areas, (2) preserve the environment, (3) create jobs, and (4) develop micro-enterprises in rural areas.

\textsuperscript{13} Planet Finance
This pilot project consisted of providing micro loans to either existing businesses wishing to improve their operations through the use of LP Gas or to holders of new project ideas using LP Gas. The pilot project was launched in 2005. WLPGA invited the three LP Gas companies to contribute a total of US$150,000 as a starting fund to the microfinance foundation. These funds are to be used as follows; 90% of the funds are dedicated to financing income generating projects that use LP gas in rural areas and 10% of the funds to be used for training and loan holders follow up. The majority of this fund was to be repayable to the LP Gas companies over a three-year period. The loans were intended to be provided as one-year term loans to rural entrepreneurs who use LP Gas in their enterprise.

Zakoura Foundation was responsible for the execution of this partnership. To facilitate the execution, ensure success and capitalize on its own human capital, Zakoura Foundation put the LP Gas pilot project under its ‘rural tourism’ program. This program was launched back in 2003 by the Zakoura Foundation and consisted of providing loans for rural tourism projects. The main goal of the program was to provide people in rural areas with diversified income generating opportunities by creating or developing tourist activities in their regions. This program has been successful as it has provided funding and support for more than 950 tourism projects for small hotels (gites in French), tourist services, atelier visits, etc. in areas such as the remote areas of the Atlas Mountains. Table 2 presents the characteristics of the ‘rural tourism’ program loans. The rural tourism program covers five regions in Morocco namely, Middle Atlas (Moyen Atlas), Ouarzazate, Agadir, Marrakech, and Tadla-benimellal.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Loan for Rural Tourism</th>
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<tr>
<td>Type</td>
<td>Group loan</td>
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<tr>
<td>Loan size</td>
<td>625-2500 USD</td>
</tr>
<tr>
<td>Effective Interest Rate</td>
<td>Approx. 21%</td>
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<tr>
<td>Periodic Installment</td>
<td>monthly</td>
</tr>
<tr>
<td>Long term range</td>
<td>4-36 months</td>
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<tr>
<td>Collateral</td>
<td>Group guarantee</td>
</tr>
<tr>
<td>% on the total portfolio</td>
<td>0.6%</td>
</tr>
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</table>

Source: Isaia, 2005

Before officially launching the LP Gas project, the Zakoura Foundation organized a ‘train the trainer’ session for all its ‘rural tourism’ loan agents on the advantages, safety measures, installation of LP Gas appliances and possible applications of LP Gas. A trainer, expert in LP Gas safety and usage, was appointed by the three LP Gas companies to deliver the training. After safety and usage training, the loan agents train the project holders who apply for the LP Gas micro-credit. In addition, the loan agents are responsible for providing basic business

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14 Zakoura Foundation – official web site
15 ibid
training and business plan development to loan holders. The project is launched right after the
training.

The project is advertised through Zakoura’s extensive network which consists of 449
branches all over Morocco, although the focus was mainly on the five above mentioned
regions. Zakoura also produced a short movie promoting the project and showcasing the first
beneficiaries from the LP Gas project. The partners originally thought that it would take about
one year for the funds (US$150,000) to be used entirely. However, due to high demand
resulting from the effective Zakoura network, the total fund was lent out in just five months.
This unexpected high demand shows the willingness of people to switch to a cleaner, safer
and time-saving energy source if provided with a way to overcome the upfront LP Gas
equipment costs. It also proves that people are not satisfied with the use of wood or charcoal
as it requires a lot of storage space, takes lots of time to collect and presents a health hazard
due to the smoke that results from its use.

Zakoura Foundation provides loans with interest rates varying between 20% and 30%
depending on the loan amount and the repayment period. The average loan amount of the LP
Gas projects was US$900 with an interest rate of approximately 21%. This high rate is typical
in microfinance. “Micro-credit rates are relatively high because recipients receive more than
just money. A representative from the micro-credit agency will put together a business plan
with the entrepreneur. They pay monthly visits to collect repayments, but also provide
administrative and legal support to ensure the business is remaining on track” explained Said
Mouline.16

These loans cover the cost of acquiring LP Gas appliances and LP Gas cylinders. Typically, a
small gas stove and two cylinders (one of 12 kg and one of 3 kg) cost around US$75 and a
gas water heater costs US$115.17 In order to qualify for an LP Gas loan, recipients must
satisfy several conditions. They must not have access to traditional sources of financing. They
must have an income generating project using LP Gas such as lodging, small scale catering,
or crafts. They also must have a valid business plan, which the foundation helps them put
together. In addition to providing loans, the foundation provides technical training on safety
measures in the use of LP Gas equipment and basic business training to ensure the success of
the business venture. The repayment rate was high, at about 98%. Given this success, in 2007,
the partners of the project, the three LP Gas companies and the Microfinance Institution
(MFI), signed a Memorandum of Understanding (MOU) to extend the project’s closing date,
which was originally set for October 2007, to December 2009, and use the repayments made
by the current loan holders to finance new loans.18

VALUE PROPOSITION

16 Micro-Credit in Morocco, interview with Said Mouline, accessed online.
projet pilote « Micro crédit – GPL » PowerPoint slides.
The value proposition of this project can be summarized as follows: microfinance is a viable financing scheme for low income people to overcome the prohibitive upfront cost of acquiring LP Gas systems to improve business operations, working conditions and protecting the environment. Value is created at different levels. It helps in job creation by encouraging and financing LP Gas based projects. It increases awareness about the advantages of LP Gas products and services. It helps in the protection of the environment by reducing the use of traditional biomass as energy. It improves the health conditions by reducing indoor air pollution. It provides poor people in rural areas who rely mostly on agriculture with opportunities to diversify and increase their incomes by developing and creating tourism activities. For the microfinance institution, this project provides a new service to help increase its customer base. For the LP Gas companies, it helps create a viable market for LP Gas in rural areas.

This Microfinance for LP Gas project is an innovative form of partnership and cooperation between the private sector and an MFI in an effort to alleviate poverty, develop new markets, and protect the environment.

CHALLENGES
Several constraints continue to hamper the development of a viable LP Gas market in rural areas in Morocco in general and the pilot project in particular from both the supply side and the demand side. The supply side constraints include the high cost of distribution and low revenue. Poor road conditions, long distances and dispersed households make the distribution very costly. In fact, the cost of a 3 kg butane cylinder is about 25% more in rural areas than in urban areas. In addition, the lack of purchasing power of the consumers in rural areas and the low level of LP Gas consumption in these areas does not make it commercially viable and profitable for the distributors.

There are several constraints on the demand side. These include high costs in switching from traditional biomass fuels, lack of awareness, low literacy levels in rural areas, diversity of local languages and dialects and low purchasing power. Switching to LP Gas requires acquiring new appliances that are compatible with LP Gas and LP Gas cylinders which are costly to the poor. The low purchasing power of people in rural areas and the limited income make them cling to the traditional biomass fuels that are cost free. Hence, microfinance constitutes a viable solution to overcome these barriers. In fact, microfinance institutions such as Zakoura often work out personalized payment plans to suit the customer. This is mainly for those that have sporadic income linked to either seasonal work or crop cycles. In addition, overcoming the lack of awareness about the advantages of LP Gas and the lack of knowledge about its use and its comparative benefits is essential to the success of the LP Gas and microfinance project. Without this awareness, it will be difficult to convince people to adopt LP Gas and incur its costs. Aware of this limitation, the partners ensured proper training of the loan agents who then trained the project holders. Besides, the Zakoura Foundation prepares its advertisements and marketing material in different Moroccan dialects using

19 “Developing rural markets for LP Gas: Key Barriers and Success Factors” WLPGA publication.
audio-visual means to cater to the illiterate population of its clientele to overcome the low literacy levels and diversity of local languages constraints.

MICROFINANCE FOR LP GAS PROJECT IN ACTION – NERRAHT COTTAGE

Aziz Amraoui, a young entrepreneur, is one of many who have benefited from the Microfinance for LP Gas project. Aziz lives with his family in a very small village called ‘Ait Ali’ located in the middle of the Atlas Mountains near Ain Leuh. This village consists of four families living in houses made of volcanic rocks and adobe bricks. In this village, Aziz owns a small cottage named ‘Nerraht’ where tourists can stay during their visits to the region. The cottage consists of four bedrooms and a small restaurant. In spring and summer time, Aziz sets a Berber tent outside the cottage where visitors can rest while enjoying Moroccan tea. Aziz uses LP Gas mainly for lighting the cottage and cooking for guests. He is very pleased with the use of LP Gas since it is easy to use and saves time. Before using LP Gas, Aziz relied mostly on wood for cooking and kerosene oil for lighting. When asked about the disadvantages of using wood, he said, “First, the difficulty and the amount of work required in procuring the wood. Second, it is dangerous for forests since [if we continue using wood] there would be no tree to cut. Third, it affects nature and the environment”. Aware of these issues related to the use of wood, Aziz took advantage of the microfinance for LP Gas opportunity to switch to a cleaner and more environmentally friendly source of energy. In 2007, Aziz took a loan of about US$1,000 from Zakoura Foundation which he repaid over an 18-month period. He used the loan money to acquire LP Gas based cooking equipment and LP Gas cylinders. Today, Nerraht cottage is recognized by the Ministry of Tourism and appears in the ‘Guide du Routard’, a well known tourist guide book.

The Business and its Relationships

Microfinance for LP Gas is a fairly new concept which requires the involvement of several partners both from the public and private sector. The unique feature of this pilot project was to link a financial service (i.e. loan) to LP Gas use, rather than the business initiative itself. The initiative is a development program launched by WLPGA and UNDP to encourage the use of LP Gas in poor rural areas. In addition to WLPGA and UNDP, the key actors that

20 Microfinance for LP Gas video
23 The initiative emerged from the World Summit on Sustainable Development held in Johannesburg in 2002.
contributed to the success of the microfinance pilot project in Morocco include the three LP Gas operators, as well as Zakoura Foundation and its loan agents. Each one of these actors played a vital role in the execution and implementation of this pilot project. Figure 2 describes the interactions between these actors.

Figure 2: Key Actors Interactions

United Nations Development Programme
UNDP “is the UN’s global development network advocating for change and connecting countries to knowledge, experience and resources to help people build a better life.”24 Some of the areas it is working on are poverty reduction, democratic governance, education, energy and environment. The LP Gas challenge initiative is coordinated at the global level by the UNDP’s New York-based Sustainable Energy programme drawing on the in-country presence of the UNDP Country Offices. The pilot project in Morocco falls within UNDP’s priorities to achieve the Millennium Development Goals. UNDP’s initial commitment to this initiative is funded through core resources available under the global Sustainable Energy programme.

World Liquefied Petroleum Gas Association
WLPGA is the authoritative, global voice for LP Gas. It promotes the use of LP Gas worldwide to help foster a cleaner, healthier and more prosperous world.25 It was founded in

24 UNDP web site
25 WLPGA web site http://www.worldlpgas.com
1987 in Dublin and is headquartered in Paris, France. It consists of 175 member organizations headquartered in 90 countries worldwide. It unites international and local, private and state-owned companies involved in one, several or all activities of the LP Gas industry. These include producers, marketers, shippers, distributors, equipment manufacturers, national and regional LP Gas associations and consulting firms. It is one of the founding members of the LP Gas Rural Energy Challenge. WLPGA contributed funds and technical expertise in the identification of pilot countries. Its role in this pilot project in Morocco is to facilitate the involvement of its member companies operating in Morocco.

**The LP Gas Operators in Morocco**

These operators were involved in this project as council members of the WLPGA. Their main objective is to create a viable market for LP Gas in rural areas. Shell Morocco, a subsidiary of the Royal Dutch Shell Group, has been in operation in Morocco since 1922 and has more than 5,000 employees and 355 service stations. LP Gas storage and distribution is one of its many activities in the energy sector. It holds a 20% market share. Total Maroc, a subsidiary of the French energy company Total S.A., has been operating in Morocco since 1926 through its different affiliates and its network of point of sales. It is the third largest distribution network of energy products in Morocco with more than 250 point of sales. It employs about 840 full-time employees and holds 13% of the market share. Afriquia Gaz was established in 1992 by AKWA group, one of the largest Moroccan groups operating in the energy sector. Afriquia Gaz is engaged mainly in the refining and marketing of LP Gas. It provides import, refinery, storage, and distribution of such gases as propane and butane. It has a market share of 42.7% of the LP Gas in Morocco. Without the commitment and the funds supplied by these LP Gas operators and the training they provided to the loan agents, this project could not have seen the light.

**Zakoura Foundation – Microfinance Institution**

Zakoura Foundation, a non-profit organization, was created in 1995 with the aim to fight poverty and promote a sense of civic responsibility. It has 449 branches throughout the country and employs more than 1,500 full-time employees with more than 1,000 loan officers. Its mission is to significantly improve the quality of life of some of the poorest Moroccans in rural, peri-rural and urban areas by providing financial services that would allow them to create and develop micro-enterprises. Zakoura Foundation mostly targets women, since women are considered to be the most powerful leverage against poverty. Of Zakoura’s beneficiaries, 84% are women. In addition to financial services, Zakoura Foundation provides non-financial services designed to support and follow up with its clients. These include awareness-raising sessions related to their rights and obligations, health issues, solidarity, education and illiteracy. These sessions are ensured by credit officers during the weekly repayment meetings and loan releases. Moreover, Zakoura Foundation has created two new communication means to stay in touch with its clientele. One is MOUFIDA, an audiovisual department that specializes in the production of short awareness-raising TV

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27 Zakoura Foundation website
programs in both Moroccan Arabic and Berber languages to make them accessible to all Moroccans. The other one is Zakoura Journal, a monthly newspaper written in simplified Arabic and in large fonts. The newspaper is sold for 1 Dirham (US$0.12) in most areas of Morocco. It is distributed via the branch offices and through various associations, firms and ministries. By participating in the Microfinance for LP Gas pilot project, Zakoura is providing its clients a new product and service and hence targets new customers. Zakoura’s strong network has been the key in the high demand witnessed at the launch of the project. Zakoura’s expertise in microfinance and its image in the market brought credibility to the project and made its implementation problem free.

In addition to the above-mentioned actors, key players in the success of this venture are the beneficiaries themselves. Their involvement, motivation and success are crucial to achieving the goals set by the project. Their main goal is to improve their lives and the lives of their loved ones. These beneficiaries run projects to either enhance their current micro-business operations by switching to a cleaner, safer and easier energy source or by creating a new business based on LP Gas. They learned about the project through the Zakoura Foundation network and through word of mouth. They want to profit from this opportunity to overcome the upfront cost of acquiring LP Gas equipment and cylinders. Microfinance provides them with a great opportunity especially because these low-income people do not usually qualify for traditional loans offered by banks. By benefiting from this initiative, these project holders have created jobs for themselves and others. They have contributed to a better environment by reducing their reliance on traditional biomass energy such as wood and charcoal. They have become empowered citizens as they learn through the MFI training how to run their business and how to sustain themselves and those around them. Through word of mouth they can increase awareness about the advantages of LP Gas, its usages and safety measures. They have become role models in their regions.

**Results Created by the Business**

The LP Gas and Microfinance project yielded several results. The concrete results can be seen in the number of loans granted; 135 loans were given to different rural tourism businesses, totaling US$135,200; 94 loans were for lodging projects, 36 for restaurants and catering and 5 for artisans. About 27% of loan holders are women. The loan amount averaged about US$900 and the repayment rate was high, at around 98%. “Those who have begun using LP Gas are delighted – it saves time and is making their lives much easier” said Said Mouline, Director of the Center for Renewable Energy Development (CDER).

A major weakness of this pilot project however, is the fact that there was no mechanism in place to tell what the economic benefits were. “Especially for the LP Gas companies, we could not really tell by how much the volume of sales has increased” said Michael Kelly, Director of Market Development at WLPGA.
Despite this weakness, this pilot project is considered by UNDP and WLPGA to be a success. According to Michael Kelly, there are two levels of success. The first level is whether or not this pilot project would be replicable. This objective was achieved since the project was successfully replicated in Colombia at a larger scale (however due to the financial crisis, the Colombia project is currently on hold). The second level of success is revealed in the unexpected high demand for the loans and for the LP Gas based projects especially since the partners anticipated the funds to last one year and ended up only lasting five months.

**JOB CREATION, INCOME GENERATION AND CAPACITY BUILDING**

This pilot project allowed several people in rural areas to diversify their income generation activities by creating and developing ‘rural tourism’ micro businesses using LP Gas. These businesses provide jobs and more income for their owners. The training provided by the microfinance institution help these owners run their businesses more efficiently and more safely. Once aware of the advantages and uses of LP Gas and its safety measures these owners can then serve as a vehicle for spreading the information to their immediate surroundings. This will also increase awareness in rural areas about the dangers and health hazards of using traditional biomass fuels.

**ENVIRONMENTAL PROTECTION**

The implementation of this project has several positive impacts on the environment. It decreases air pollution due to smoke generated by burning the traditional biomass fuels. In addition, it cuts down on the illegal cutting of wood from forested areas which are considered to be the lungs of the environment. “This project will help us reduce the high consumption of wood in the country and ease deforestation”, said Rachid Idrissi, Managing Director LP Gas Akwa Group (Afriquia Gaz).

By substituting wood and coal with LP Gas, these micro-businesses contribute to the preservation of their ecosystem and their environment. Additionally, they have improved their working conditions by using a safe, smoke free energy source thus also reducing greenhouse gas emissions, as LP Gas has lower emissions than traditional energy sources (See Table 1).

<table>
<thead>
<tr>
<th></th>
<th>LPG</th>
<th>Kerosene</th>
<th>Wood</th>
<th>Brush</th>
<th>Agg. Wastes</th>
<th>Dung</th>
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<td>1.3</td>
<td>26</td>
<td>30</td>
<td>124</td>
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*Source: WLPGA Annual Report, 2005*

**Growth Strategy and Future Outlook**

UNDP and WLPGA have already replicated this project on a larger scale in Colombia. The successful experience in Morocco has provided a good template for replication. It offers a good example of how such a program can be designed and run. While the funds were
relatively small by design, the project can easily be scaled up to a much larger level. In Morocco, the project is due to end in December 2009. The LP Gas operators did not opt for another extension of the project for a couple of reasons. First the individual LP Gas operators could not measure the impact of this project on their respective sales and market share. Second, with the global economic crisis several multinational companies have adopted a cautious investment policy. However, this project could be continued in Morocco if there is a bilateral partnership between one LP Gas operator and the microfinance institution. The funds provided by the LP Gas operator in this case would be used to purchase LP Gas cylinders exclusively from the LP Gas operator. This way the LP Gas operator could easily measure the financial results of such an initiative and also the impact will be more substantial than if divided among several competing operators.

This pilot project also showed the willingness of people to use cleaner, safer and more environmentally friendly energy sources. For the poor in rural areas, LP Gas may not necessarily be the preferred fuel compared with wood, dung, etc. simply because of their poor economic conditions and lack of purchasing power. If provided with the means to overcome the high costs, they would be ready to adopt other alternatives such as LP Gas. Using LP Gas can help them escape a vicious cycle of poverty. They use biomass fuels because it is free of charge for them, although collecting and hauling it does consume the time and strength necessary to develop income generating activities.

The type of public-private partnership presented in this case highlights the importance of thinking outside of the box and coming up with innovative inclusive business models to improve the lives of the destitute population in developing countries and contribute to a better world.
References

INTERVIEWS

PUBLICATIONS
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WEBSITES
The case was completed in May 2010 and released in 2011.

The information presented in this case study has been reviewed by the company to ensure its accuracy. The views expressed in the case study are the ones of the author and do not necessarily reflect those of the UN, UNDP or their Member States.

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