

Women and the supply side of energy in Sahelian countries

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PREDAS¹ is a regional programme to promote household and alternative energies in the Sahel. The programme is implemented by the permanent Interstates Committee for Drought Control in the Sahel (CILSS) with support from the European Union and the Federal Republic of Germany. CILSS was set up in 1973 and involves nine countries: Burkina Faso, Cape Verde, Chad, The Gambia, Guinea Bissau, Mali, Mauritania, Niger and Senegal. CILSS aims to achieve sustainable development in the Sahel through regional cooperation.

The overall objectives of PREDAS are to contribute to the sustainable management of natural resources, on the one hand, and to poverty reduction in the Sahel, on the other. It aims to do so through the sustainable and low-cost supply of wood-based energy to the populations. Three specific objectives structure this programme:

- Help member states to design and implement their household energy strategies.
- Contribute to setting up a network of Sahelian professionals in household energy and the initiation of a Technological Information System on Energy.
- Develop a methodological framework for environmental monitoring of forest wood energy resources.

This article provides insights into the specific Sahelian household energy needs, and the supply-side energy processes to meet these needs. Recent case studies commissioned by PREDAS in several of the member countries have shown that women have an increasingly important role to play in the supply of energy. Individual cases will be presented, which clearly show the involvement of women along the whole biomass supply chain in most Sahelian countries.

Household energy needs: the importance of charcoal and firewood

Firewood and charcoal are by far the most important sources of household energy in Sahelian countries. In all the countries, apart from Senegal, they account for more than 80% of household energy consumption, used mostly for cooking although they are also used in other household activities such as ironing. Firewood and charcoal also have important roles in some income-generating activities, such as the traditional breweries in Burkina Faso, street restaurants and bakeries. Such activities are crucial for the livelihoods of poor people and consequently those of women since they make up the majority of the world's poorest people. The earnings from these income-generating activities are very much related to the price of firewood and charcoal.

In most rural areas, firewood is still collected at zero financial cost. There are trends, however, such as the extension of cultivated land, monetisation of rural economies and increasing distances to firewood that, in some rural areas, are causing a transition to buying fuels, increasing the financial pressure on the poor.

Charcoal is a commercial commodity mainly used in urban centres. It is better adapted to the urban lifestyle, as it is cleaner and easier to handle than firewood. In addition, charcoal, due to its higher calorific value, becomes a more cost-effective option than wood when forests are far from the consumption centres. Despite its higher cost, the tran-

sition to charcoal in most Sahelian cities, with Niamey being a notable exception, is spectacular and unlikely to be reversed. This is related to the development of Sahelian cities, where urbanisation has led to nuclear families replacing extended families as the norm, which consequently puts time constraints on women in managing their household chores. Cooking with firewood is a very slow process: the cook must be patient, especially during the rainy season when wood is very often wet. As a result, in Bamako, the Malian capital, where wood was the main energy source for 90 % of households in 1990, today very few households use wood as their main source of energy.

At the macro-level, the wood energy sector, from forest exploitation to the sale of firewood and charcoal in rural and urban areas, makes a significant contribution to national economies. It is estimated that, in Sahelian countries, about 10 % of the population currently rely directly or indirectly on wood energy for their income. The table below shows the importance of charcoal in the economy of some Sahelian capitals.

City	Estimated turnover 2004 (US\$)	Comments
Bamako	30 million ²	of which US\$24 million charcoal and US\$6 million firewood
Dakar	16 million	Charcoal only, wood is barely used in Dakar. At the beginning of the 1990s, charcoal sales amounted to US\$ 40 million
N'Djamena	24 million	US\$16 million charcoal and US\$8 million firewood

Table 1: Importance of charcoal in the economy of some Sahelian capitals

The sector supports a wide range of jobs including woodcutters, charcoal makers, rural and urban traders, wholesalers and retailers. Women fill several vital roles, as traders in rural and urban areas, and also as producers of wood and charcoal. For instance, in Mali, a large number of women are woodcutters and charcoal makers.

Biomass supply chain and women's involvement

Increasingly, women are involved in all the segments of the wood energy sector including activities which traditionally were allocated to men such as wood cutting and charcoal making. They do so for financial reasons, and forest management schemes offer further opportunities for women to be involved in such activities. The following cases are examples of women's involvement in the biomass supply chain in the Sahel.

Forest exploitation for wood energy

In Burkina Faso, forests are exploited for wood energy by legally recognised forest management associations. Men and women are trained to manage village forests in a rational way that generates incomes for the local communities. In Mali, a permit from the forestry department is required to cut wood, and illegal woodcutters face heavy fines.

Oumou and Alibi are woodcutters in Kassena, Mali, and in Dana, Burkina Faso, respectively. Both women cut wood in a managed forest and sell it in order to meet their daily expenses. "Since I started this activity, I have become more independent financially", Alibi discloses, "In the village, our essential needs include food, our children's education and a little money to cater for social events. I earn more money now and I can afford to buy cooking utensils and even financially help my husband to buy food." According to Oumou, the advantage is that "one can engage in this business with limited financial capital, unlike other income-earning activities. Also, the money earned from this trade contributes a great deal to improving our quality of life. For example with two cartloads of firewood in a week, I can earn between US\$7 and US\$10." On average, her income from wood cutting is estimated at US\$50 per season (January to April). Although this seems rather low, she supplements her income by selling wood at roadsides, earning another US\$30 per month.

Although woodcutting is considered as a business that enables one to earn a relatively substantial income when coupled with trade, it is also a dangerous and painful activity. The distance to be covered between the village and the forest, while head-loading bundles of wood, often leads to heart palpitations. There is also the risk of injury from the axe, from tree stumps, and from poisonous snake and insect bites.

Commercialisation of wood and charcoal

Six to eight kilograms of wood are needed to produce one kilogram of charcoal depending on the efficiency of the kiln used in the carbonisation process. While there are environmental arguments against the production of charcoal, it is perceived as a more convenient and cleaner fuel than wood.

In Senegal, charcoal commercialisation in urban and peri-urban areas used to be controlled by men ("diallos keurigne"). However, today, women are increasingly engaged in the commercialisation of charcoal in urban centres for part of the year or even throughout the entire year. Women mostly engage in the charcoal trade to earn money and help meet family and social expenses such as children's education, food supply, health care and the organisation of social events. The women engaged in this activity are usually the heads of family or live in polygamous families where they are forced to cover basic needs when the husband remarries.

In Burkina Faso, women pack charcoal into small bags to sell for upwards of 10-20 US cents per bag depending on the size of the bag. The average net daily profit is estimated at US\$3-4.

In Chad, Mrs Am-Rakhie says that she sells bags of charcoal for US\$6 of which her profit is approximately US\$1.50 per bag even though she pays half a dollar per bag in tax to the forestry administration. "I manage to sell about fifteen bags of charcoal a week, from which I make approximately US\$90 of profit every month, and this has dramatically improved my livelihood."

In most cases, women engage in wood energy activities to improve their income. In some instances, micro-loans have been instrumental in enabling entry to the wood energy business. Madina, from Niger, explains her choice as follows: "At first, I was only selling doughnuts but I realised that this activity could not adequately cover my family's needs. Therefore, in order to increase my income, I started, as a trial, to sell wood thanks to a US\$200 loan, which I obtained from our women's association."

Florence in Ouagadougou used to sell cola nuts but switched to selling wood and charcoal which she sees as a profitable business. Florence emphasises that she makes between US\$3 and US\$3.50

profit on a cartload costing US\$30. She estimates her total profit at approximately US\$80 per month.

In Chad, Akhaye says she makes a 100% profit from this activity. She buys a stack of wood for 10 US cents and resells it for 20 US cents. Many women make substantial profits in the wood business.

In Niamey, 15 steres ($\approx 10 \text{ m}^3$) are supplied to Madina every three days and she says, "I make a profit of about US\$ 10 every three days; that is US\$100 a month." Madina says that, in Niger, during the wet season, "wood is scarce and very costly. Most of the lorries are in poor condition and access to forest areas is almost impossible whenever it rains heavily."

In Mali, Badje has reached the same conclusion. For Florence, in Burkina Faso, "during the rainy season, it is difficult to get supplies of wood due to the poor maintenance of roads that access the forests. Furthermore, people are also occupied with working their fields and have little time for the wood business. The wood prices are therefore



Mrs Am-Rakhie in Chad, who has greatly improved her livelihood by selling charcoal.
(Photo: PREDAS)

very high." Florence has realised that this supply problem would be resolved if she had had sufficient money to stock wood during the dry season for sale in the rainy season.

Charcoal making

In the traditional division of tasks, charcoal making was an activity exclusively reserved for men, while women were responsible for the trading activities. However, women facing hardship are almost compelled to seize any opportunities to make an income. This was the case in Kassela, Mali, where wood and charcoal provide some of the few income-generating opportunities open to women. Alima Sacko is 46 years old and has been engaged in the charcoal trade for the past 15 years. She is a member of a charcoal producers association involving five other women and some men. Alima produces charcoal with wood that she buys from traders who operate in the nearby managed forests. She produces between 10 and 15 large bags every week, which are sold on average at US\$6 a bag.

Alima has been trained in new carbonisation techniques, which she adopted for two years. With the improved kilns, the time involved in the production of charcoal was shorter (2 to 4 days) against a week for the traditional technology. However, she has stopped using it because, according to her, "the new technology is profitable but it requires a large quantity of wood which I cannot afford because of a lack of financial capital." Her current equipment is rudimentary: a barrel and two shovels. Alima accepts that charcoal making is a very tiring activity, and she would give it up if she could find better opportunities with similar earnings.

PREDAS' household energy strategy

PREDAS' focus on household energy strategies for member states is aimed at making a significant impact in a sector in which women play important roles, not only as consumers, but also as an important component of the biomass supply chain. For instance, PREDAS' household energy strategy development guidebook prioritises the biomass sub-sector and interventions along the whole supply chain including natural forest management, improved stoves and kilns, and establishing an enabling environment.

The importance of women's roles in the production, commercialisation and consumption of household energies is explicitly spelled out in Part 3 of the guidebook "Conditions for the viability of an implemented household energy strategy"³. The objective is to ensure that women gain access to the additional resources generated by the implementation of household energy strategies, and that their specific needs in this sector are properly addressed. The sensitisation of policymakers is geared towards the formulation of specific recommendations that will be reflected in interventions. Several member states, with the support of PREDAS, have elaborated household energy strategies that paved the way for the implementation of large-scale programmes, particularly in the biomass sector. ■

¹ PREDAS: *Programme Régional de promotion des Energies Domestiques et Alternatives au Sahel*

² All figures are converted from the local currency at the following exchange rate 1US\$= 500 FCFA

³ Household energy strategy development: a guidebook, April 2004, PREDAS technical guidebooks collection.



A woman woodcutter in Burkina Faso. Many women are now entering this line of business, which used to be completely male-dominated. (Photo: PREDAS)



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