



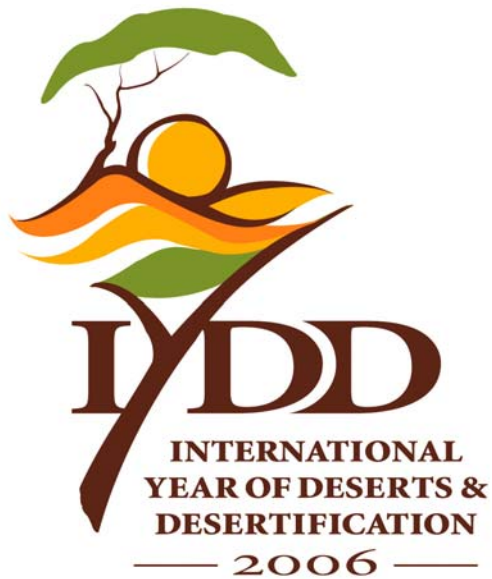
WOMEN OF THE EARTH

Nurturing the future



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The Mapuches Kilapi Women in Neuquén (Argentina)

The Association of Women Mapuches Kilapi is based in the Patagonian community of Chorriaca, Loncopué, in the Province of Neuquén, Republic of Argentina. Forty-five women aged between 16 and 70 make up the association. They meet twice a month and at each meeting a new member joins. One hundred and twenty women represent the population of Chorriaca. Ninety families live in Chorriaca, a total of 530 people.

The communal land comprises 14,000 hectares; soils are marginal and of poor productivity. The climate is desert temperate-cold, with negative hydro balance. The strong and dry winds are very frequent in springtime and in summer the water is insufficient. The community practises cattle herding, and firewood is collected for domestic use.

The dominant characteristic of the cattle herding is the seasonal migration of livestock, which is transferred in the spring from the wintertime lands, which are not good for grazing, to fields with better conditions located in the mountains (summer grazing). Some women of the community have a very important role in the summer pastures, urging on the animals. When there are sufficient men to do the work, the women go back to the winter lands, where the houses are more comfortable.

How desertification has affected women's lives

The women of this community suffer the structural problems that affect the rural indigenous sector, where poverty has increased in terms of spread and intensity. In addition, they suffer discrimination from other members of the same community, for example from one of the political civil employees concerning tasks such as the distribution of resources sent by the Neuquino State. The most common discrimination is that the authorities of this small town allocate to the women the most irrelevant tasks, especially if they are female householders. Thus, we found that the women work a greater number of hours because they are forced to fulfil at the same time their domestic, community and economic activities in addition to the raising of their children.

In recent years the prevailing drought has caused an increasing loss of cattle, and poor productivity from domestic gardens. For this reason, the families of the community have difficulties during the winter, exacerbated by a lack of fuel for heating, a problem which has been solved neither at community level nor by government policies.

What have the women in the community done to fight against desertification?

First of all, they have created and formalized the Association of Women Mapuches Kilapi of Chorriaca, responsible for the national action programme to combat desertification and mitigate drought in Argentina. With the creation of the association, they were able to strengthen the role of women. Eighty per cent of them are illiterate or semi-literate.



Although they have attended the primary school, since they do not have the opportunity to read they lose the ability to read, and therefore also the ability to write. The association has provided them with training in different topics relating to natural resources: administration of vegetable-hydro resources, diffusion of guidelines to avoid erosion and degradation of the soil, economic activities, revaluation of their own culture, etc.

In collaboration with the Direction of Culture of the Municipality of Chos Malal, a photographic competition was held celebrating the topic of women and desertification, which concluded on 17 June 1999. Guided visits were organized to show an exhibit with the aim of raising awareness and also empowering the visitors. A radio emission called 105,5 FM Nehuen Hueché (Youth Force) was created in the community of Chorriaca, after project devised by Silvia Freiler, Coordinator of Gender and Desertification in the Secretariat of Environment and Sustainable Development, and Mirta Cordoba, Sub-secretariat of Production and Patagonia Tourism North-Chos Malal. The main function of the emission, besides spreading knowledge of the cultural guidelines of the community, is to raise awareness of the problem of desertification.

Why is it important to involve women in the fight against desertification?

It has been verified that since the incorporation of women into the national action programme to combat desertification (1995 to 2004) the women of this community and their families have improved their cultural and socio-economic conditions, hygiene and security. In addition, the participation of women in community activities and decision-making has increased. In a study made of 70 women of Chorriaca, 80 per cent declared that they wanted to work to have their own money and power to give education to their children and to dress their families, 10 per cent in order to buy animals, and other 10 per cent in order to improve their houses (painting, ceilings, furniture, etc.). In the same study, 90 per cent of the women thought that the men did not value their decisions. For that reason, the Association of Women of the community works to strengthen the role of women in decision-making. In support of the national action programme to combat desertification, the Argentine-German Technical Cooperation, Agreement SRN and DS - INTA - GTZ initiated 91 projects in 1999-2000. Of these, the Association of Women has carried out the following: the optimization of irrigation and the management of family domestic gardens in the Indigenous Community Kilapi, the implementation of the protected farming for eight families and the construction of sheds, which benefited 10 families. In addition to this, other projects have been carried out thanks to the economic contributions of different donors: the construction of ten macro tunnels, a project involving the creation of typical crafts, recovery of the knowledge of typical traditional cookery, a programme for the creation of domestic gardens and the recovery of a traditional method of artisan weave and its creation using natural dyes. The intense activity of the association contributes decisively to the strengthening of the standing of the Mapuches Kilapi women in their community, and at the same time to the protection of the community's means of life: the ground that surrounds it.



The struggle of the Women of Chad

The phenomenon of desertification in Chad has intensified. A progressive degradation of the fragile balance between man and his environment is now a reality. Many people, mainly the young, have left their towns to emigrate abroad or have journeyed to the big cities of their own country.

This fact has impelled our organization to create programmes to raise the awareness of the people of the importance of preserving the environment. It is women who are principally affected by desertification and its direct consequences. Desertification causes the spread of poverty, it exhausts marshes and backwaters, and it causes the soil to dry out which results in an inability to cultivate such things as root vegetables, wild fruit and trees for firewood. It is a vicious circle which degrades the life of the women, whose means of survival depends on the fertility and productivity of the soil.

The women are the guarantors of the survival of the African family, because they are reacting to the gravity of the situation, making agreements and undertaking action plans. They try to find solutions through communication between women of different populations and the organization of inter-village meetings on the management of the territories. This interchange usually takes place as a 'round-robin' (ordered simultaneous discussions), thus avoiding any offence to the participants. This favours the formulation and expression of ideas and an abundance of opinions. The professional character of the meetings conserves their traditional rituals and symbols; for example a seat is but a simple blanket, and a tree of words is used to provide shade from the intensity of the sun.

Some traditional technologies are used to fight desertification and to reduce the scourge of drought. Some women, with the help of the children, make fences to surround the towns. After the birth of a child the young mother must plant five seedlings during the period of 20 days that the baby is suckling. Other women construct small tree nurseries for the production and sale of citrus fruits, and long discussions have led to the idea of planting forestry species, endangered plants and medicinal fruits.

Why is it important to involve the women in the fight against desertification? According to Laurent Houndegla, the author of famous African quotations, "the great deception of history is the creation of the myth that women have no power".

What is the true social identity of an African woman who is the head of a family? What is the correct incidence of women who assume sole responsibility for their families, which leads them on to programmes of structural adjustment? Is there a relation of causality between the impoverishment of Africa and the high percentage of homes managed by women? The status of these women deserves to be examined on an individual basis. There exists a connection between this new family structure and the process of the feminization of poverty.



The factors that increase the number of homes managed by women vary from one region to another and depend on the social, demographic and economic conditions. The most important factors are migrations, divorce, family abandonment, political instability, widowhood, having children outside marriage, and the prejudice that children are the concern only of women.

The homes headed by women suffer a greater risk of being poorer than the homes controlled by men. Several factors explain this. In the first place, the matriarchal homes have a greater number of people under one roof, which means a greater proportion of people that do not work (women with limited incomes and children). In addition, women usually have an inferior average income than the men and less access to remunerative jobs and productive resources such as the land, credit and technology. Finally, women who are the heads of households must assume alone both the responsibilities and the means of subsistence. This forces women to choose badly paid jobs that are more compatible with the education of their children, their domestic obligations and the activities of domestic production.

When they have well-paid jobs, the women are more determined than the men to spend their profit on education, nutrition and the well-being of the children.

This is the reason why the National Forum to fight against Desertification and the national action programme are judged to be important. They should involve the women of Chad in the fight to preserve the environment and the development of the country, worthy of a mother's fight to provide a better future for her children.





The Potential of Women

The Association of Tam-Tam of the Tombouctou Desert (Mali)

It has been agreed to break the bond that has linked women with desertification. Their interdependence is twofold: one is the essence of nature, and the other is its violation. In Bambara, the term for 'woman', 'muso', means the existence of human life. Desertification, on the other hand, is the spread of the desert in the Saharan countries, characterized by a shortage of rain and a loss of vegetation. They have a paradoxical relation; one offers a gift through childbirth and the other one takes it through drought.

*In Bambara,
the term
"Woman",
"Muso",
designates
the existence of
the human life*

Desertification affects the life of women through deprivation. When water becomes scarce, the daily work of the women increases, especially because in relation with the men they need it more for their personal and their children hygiene, washing clothes and the dishes, food preparation and so on. Who speaks of the depletion of their water source, of the rarity of finding wood? Water is an indispensable element of cooking, but it is becoming more expensive and more and more inaccessible. The spreading of the desert makes it difficult to use the land, affects the cultivation of the soil and generates problems of survival and food insecurity. The women suffer from this plague which also affects the cattle due to the subsequent lack of vegetation. This indirectly leads to a shortage of milk for the communities.

Desertification has forced women to do typically masculine jobs, such as the excavation of wells and equipped drilling to find underground water to be pumped manually, or the replanting of trees to replace those lost through desertification.

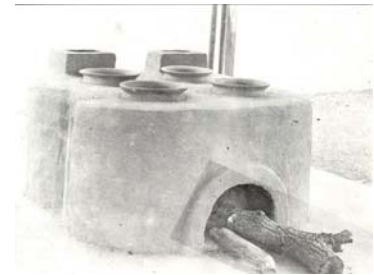
In order to solve this type of problem, women's associations have started up income-generating programmes. Programmes such as the teaching of literacy strengthen the management of their projects. The skills of using dyes, embroidery and stitching will give rise to factories, a source of future incomes. Once the accounting is controlled, it will become an indispensable tool to enable some micro credit projects to get off the ground. The manufacture of soaps, pomades, jams, (guavas, mangos, papayas...) will be possible because of the local production.

Through these actions, it is easier to appreciate the importance of the role that the women have in the fight against desertification, which devastates the country. It is now necessary to add to the definition of women cited earlier that God created them as women of catalytic potential. Women have a greater capacity to approach these kinds of problems because they are more sensitive and spontaneous in their gestures to solidarity in the face of adversity. When they are fighting a battle against a threat to their families, African women's determination is inexhaustible.



Combating Desertification in Burkina Faso

The populations of Burkina Faso in general, and the women in particular, face daily the harmful consequences of continuous degradation of the soil and the low availability of water resources. In Burkina Faso, desertification has affected women in three ways: sanitarilly, socio-economically and nutritionally.



The sanitary aspect

More than 80 per cent of the population of Burkina Faso depends on the use of medicinal plants. The treatment of numerous diseases is possible thanks to the availability of a good variety of these plants. These are well known for their fortifying and curative properties. During pregnancy, the women can use these plants. After childbirth, the newborn child stays healthy thanks to the infusions of some plants. With the phenomenon of desertification, numerous plants have disappeared and others are far from the inhabited zones. Desertification favours the spread of arid soil that adds to the women's state of poverty. They are forced to devote their time to the collection of soil, and to sand and gravel sifting, particularly at the periphery of the great urban centres. This activity negatively affects the health of the women, who constantly breathe the dust and easily contract pulmonary diseases.

Socio-economic aspect

It is agreed that women play an important and irreplaceable role in the exploitation and commercialization of forest products. The case of the shea-nut tree is an example. The possibilities of traditional soap manufacture from the oil of the shea-nut (*Vitellaria paradoxa*) are reduced due to the low availability of shea-nuts. The low availability of energy sources such as wood and coal forces women in rural areas to travel for many kilometres to obtain them. In urban areas, an important part of the household budget is the money required to purchase wood. The same occurs with water.

The nutritional aspect

The variety of culinary dishes from leaves or flowers of forest plants has been reduced through the disappearance of some species. The high cost of wood causes women to use carbide fuel in the baking of tough foods such as beans or peas, with the purpose of accelerating the process. The consumption of food cooked in this way causes numerous diarrhoeic diseases.

In order to face this serious situation, the women organize themselves

They organize through forming groups or associations. Two excellent examples are the groups of *Amicale des Forestières du Burkina* (AMIFOB), whose objective is to safeguard biological diversity, and the women's group Nabonswendé which acts to reduce poverty. In order to fight against desertification, the associations organize workshops to sensitize people on the subject and give out information on the environment. They also create and maintain nursery grounds and plant trees. AMIFOB and Nabonswendé support the communities concretely through the planting of approximately 30,000 plants a year.



A successful experience in the South-east of Djibouti, the women fight valiantly against desertification

In the year 2002 a unique project was initiated in the management of natural resources and the combat against desertification. This was started by the CERD (*Centre d'études et de recherches de Djibouti*), in collaboration with the Coordination network of the Associations of Balbala (CAB) and with the financial support of the United Nations High Commissioner for Refugees (UNHCR).

This project was financed by UNHCR and was executed by the CERD in collaboration with the association of women of the refugee camps in Ali-Addé and Holl-Holl. The CAB was interested in the project, and followed it closely.

This project, entitled Gender and Environment, was initiated at the end of 2002 and finalized at the end of 2004 (the planned date for the closing of the camps and the rehabilitation of the deteriorated refugee zones); it had as an objective the improvement of environmental conditions in the camping zones of the refugees from the south-east of the country. The refugees have lived here since 1991 after being displaced from Somalia and Ethiopia.

The actions undertaken had the aim of evaluating the natural resources of the region, and of defining the refugees' main impacts on the environment. As concerns the natural resources, they particularly highlight the priority actions that need to be implemented in collaboration with the local population (refugees and indigenous).

The main theme of the operation of the project focused on the sensitization and participation of the local population in the protection of the environment, and especially in the fight against desertification.

Actions undertaken by the association of women

The women participated in the creation of nursery grounds of forest and fruit trees, and they prepared land for the cultivation of domestic gardens. The association sensitized the population by creating in the primary schools environmental clubs that include plantation programmes and agricultural development initiatives (the creation of agricultural plots for the use of students and teachers). The other high-priority activities undertaken were workshops on combating desertification and instruction in techniques of planting (production of 5,000 different plants).



Women and Desertification

In the upper west region of Ghana

In Africa women are at the forefront in ensuring food security in the family. Women hold more than half the responsibility for food production in rural Ghana and they aim still, through calculated efforts in caring for a healthy environment, to achieve food sovereignty, through ecologically, socially, economically and culturally ethical tasks.

In ensuring the sustainability of both the productive and the reproductive life of the home and community, women carry many activities including woodlot establishment, nursery construction, planting, watering and management. As farmers, they rely upon natural biomass sources for food, fuel, fodder and cottage industries. Fuelwood forms 98 per cent of their energy needs in the community. Trees are felled for charcoal.

Mothers are herbalists and they harvest herbs, some tubers, fruits and fibres from the wild. They respect the idea that the area is important for the preservation of such plants. They collect water for the houses, their animals, for building and for the cottage industries. Women in this area are very poor – poverty is said to be the worst pollutant of the environment. Alternative income-generating activities such as bee-keeping, rabbit farms and poultry are important in supporting household food security and environmental management. All the tasks they carry out are vital for the survival of the community but add to the process of desertification in many ways.

Activities the women carry out in the Upper West Region (UWR) to fight desertification include: tree planting and care, resulting in income generation, the establishment of fodder banks, animal rearing, bee keeping and poultry, fund-raising, solidarity through chain friendship (Chena), and collective funding in a rotating fashion (Susu), and other loan schemes. Women's activities have a telling impact on the environment, as a healthy environment is vital for community survival. In the UWR, women protest against men who use dangerous chemicals in fishing, by boycotting the buying of such fish and by using this example to educate others about the hazards of using dangerous chemicals. Women depend upon renewable natural resources for household and cottage industry energy requirements, and for the productive and the reproductive needs of their homes. In reality, women respect the role of the environment in their lives for human survival and will never deliberately degrade it.

In history, women sacrificed themselves for the sake of avoiding deforestation and desertification in Rajasthan county (India); the Chipko women's movement activities helped prevent desertification, and this experience has been replicated in many areas throughout Asia, Australia, the Americas and in the UWR of Ghana. It is obvious that over generations, women's views on the environment have been more holistic and inclusive than men's, as they initiate, prompt and develop activities to manage the environment on a sustainable basis.



The *Jatropha* plant as a tool for combating desertification (*Mali*)



Jatropha plant and fruit
Tom Burrell©

Mali is located in the centre of West Africa on the southern edge of the Sahara, and has an area of 1,241,000 km². Eighty per cent of the 12 million inhabitants live in the southern third of the country, as the northern two thirds of the country is desert, which is advancing every year, threatening farmland and pasture. Ninety-two per cent of all domestic energy used (for cooking and heating) comes from firewood and charcoal and only about one per cent of the population in the rural areas has access to electricity. In rural areas the modern energy sources are mainly fossil fuels (paraffin and diesel). These are used mainly for lighting and providing mechanical power.

With ever-increasing demographic pressure, the land is subject to greater and greater stress. Deforestation and desertification threaten to reduce once-fertile land to unproductive dust. In the dry season, wind erosion carries away topsoil; in the rainy season it is washed into streams and rivers. In the Sahel zone, 30 per cent of soil degradation is attributable to wind erosion, and 50 per cent is due to water erosion.

Jatropha curcas is an oil-bearing plant, found throughout much of Mali. It is grown around crop fields and gardens to keep out animals, to act as a windbreak, and to reduce soil erosion by wind and water. *Jatropha* hedges reduce the degrading effect of the wind and water, as soil collects at the base of the hedges and these accumulations reduce erosion by surface runoff. It is very easy to grow, as a cutting taken from a plant, left to dry for two days, and then simply pushed into the soil, will take root. *Jatropha* needs only 400 mm of annual rainfall to grow, which means it can flourish even in Sahelian and semi-desert regions. *Jatropha* is a very fast growing species; plants grown from seed take two years to produce seed, those from cuttings take just one year. This means that *Jatropha* can be an important weapon in the fight against desertification in the fragile Sahel environment.



Living Fence
Ousmane Ouattara©

Traditionally the seed has been harvested by women and used for medical



treatments and local soap production. The oil, which can be pressed from the seed, is non-edible. However, this oil can be used as an alternative fuel for diesel engines, due to its similar chemical properties. This is especially important in Mali because of the use of small diesel engines in multi-purpose platforms to provide basic energy services to rural people. The diesel in Mali needs to be imported, and is expensive for rural communities. The precipitate produced as a by-product of mechanical pressing of *Jatropha* seeds is rich in nitrogen and can be used as a high-quality organic fertiliser, improving the productivity of gardens.



*Women collecting Jatropha seeds
Arnout van den Broeke*



*Pressing Karite nuts in platform
Tom Burrell©*

The Mali-Folkecenter project, a Malian non-governmental organization (NGO) financed by Siemenpuu Foundation of Finland (2002-2004), investigated and highlighted the different benefits of *Jatropha* in three regions of Mali (Koulikoro, Sikasso and Kayes). Women were the focus, because they are the key actors in several *Jatropha*-related activities. Women collect the seeds and sell them to a buyer from outside the community. Women make soap, either from the seeds in a traditional way or better quality soap from the oil itself. They also participate in the planting of *Jatropha*. Women are also important beneficiaries of the multi-purpose platforms, because the time and energy-consuming work involved in pounding millet, maize etc. is replaced by the mechanical grinding. This considerably reduces the workload of women and leaves time for other activities.

In the project, about 30 ha of *Jatropha* were planted in abandoned fields and as hedges around gardens and the farmers were trained in different planting techniques. This was done to demonstrate that the *Jatropha* plant could be used to regenerate degraded land that is no longer suitable for farming, thus serving as a barrier to the advancing desert. In the ten project villages, it was demonstrated that *Jatropha* can be an efficient tool for combating desertification whilst at the same time bringing economic benefits to women through the three multi-purpose platforms powered by *Jatropha* oil.



*Women selling Jatropha soap
Ibrahim Togola©*



The daily battle of the Women of the Plateau of Bateke (*Democratic Republic of the Congo*)

The Plateau of Bateke, with its sandy ground, is covered by savannah. Its relief is rough in some parts. It also has a desperate lack of water.

These aspects condition the way of life on the Plateau of Bateke. For that reason, the Heri Foundation, has initiated different activities to help the population, especially the women and children.

Women and environment

Not having access to an electrical energy source, the women of the Plateau of Bateke are forced to prepare food using wood or woody coal. In order to obtain this firewood they must walk long distances. By cutting trees, they accentuate desertification, thereby creating a vicious circle in the furthering of desertification. This land, once used, no longer become fertile, and the women must go farther and farther away in search of fertile land, travelling several kilometres on foot, under burning sun.

The reduction in the fertility of the land also reduces agricultural production, which means a perpetuation of food insecurity, hunger and poverty. The absence of water in this region also forces the women to walk long distances to obtain water for their domestic needs such as cooking and washing themselves and their clothes.

The Heri Foundation realized that the women of the Plateau of Bateke contributed to desertification due to some of their actions, such as the indiscriminate cutting of the few trees that still remain, agricultural practices that fail to respect the fallow land, and the technique of crop burning. For this reason, they receive training in the field on reforestation techniques, and in particular about the importance of the tree in the life of man, and about fast growth species, the maintenance of young plants, fire protection, and the establishment of firebreaks in the areas where there are trees.

The involvement of the women in the fight against desertification is extremely important. Firstly, the women of the Plateau of Bateke, as in many other places in the Democratic Republic of the Congo, fight alone for the survival of their homes. Unfortunately, the daily activities they carry out to feed their families contribute to desertification. Therefore, to involve the women in the fight against desertification is essential in order to slow down this phenomenon.

In addition, the women are guardians of values. Once sensitized to and initiated in the techniques, they battle against desertification, and they will transmit this knowledge to future generations. Is it not said "To educate a woman is to educate a nation?"



Mama Ndolo's Women (Kenya)

*From "The Gardens of Their Dreams: Desertification and Culture in World History"
by Brian Griffith.*

"Mama" Benedetta Ndolo leads a village women's group in the Lveti Hills of Machakos District. From the top of the hill in her village you can see for miles to the north-west, over the dusty countryside stretching towards Somalia.

For a whole afternoon Mama Ndolo took me all around her village, showing off her group's various accomplishments. We toured the hill-slopes terraced by village work-parties. We examined cement rainwater jars, paid for one at a time by funds from the women's group garden. Then we looked at the many small nurseries of fruit-tree seedlings. Towards evening we went to her house, and there I saw what impressed me the most. It was Mama Ndolo's latrine, outside her back door, through her grove of banana trees.

I went there just as darkness was falling. The valley was deep in shadow, with orange sunbeams still streaming over the hilltop lighting wisps of cloud overhead. Mama Ndolo's outhouse had no roof, only reed walls, covered with morning glory and passion fruit vines in full flower. Squatting inside, I watched as the stars winked on and the moon appeared above the trees. A roof on that latrine would have been a disaster. Instead of a private flower-garden planetarium, it would have been a dark little cell with flies buzzing inside. But the best thing about the latrine was the sound of the wind in the trees.

Three years before, Mama Ndolo's friends started planting tree nurseries of mango, eucalyptus, and other seedlings. Years before, at the United Nations Conference on Desertification in Nairobi, several African governments had proposed planting two great belts of forest, one across North Africa and the other south of the expanding Sahara. After the conference, most governments did little about it. Perhaps they were under pressure to cut spending and pay off their loans. In Kenya the government advocated tree planting, but it was the village women who were most concerned to save the land beneath their feet. Nobody paid these women or counted the cost of their reforestation efforts. The trees were their pay. And now the new forests of Mama Ndolo's village stood nearly 12 feet tall.

When you sat on the latrine, you could hear the breeze sifting through a whole hillside of young trees. It was a sound like whispering, as if the trees had moods and were sighing with happiness. They seemed full of confidence, as if they were sure of the fact that Mama Ndolo's women were to remain in this place, and it would never become desert.



A mother teaches her children to respect the trees

The small shepherd and his herd of goats and sheep leave the camp. The retinue, compact at the beginning, very soon disperses. The older boy of twelve years of age wears a straw hat on his head. He carries a small water pumpkin and with his walking stick he sets off on his journey. The retinue follows in pursuit as the dust is kicked up into the air. His two brothers and his cousin bring up the rear of the convoy.

This morning they have chosen a grassy place by the small meadow of irrigated land that changes with the seasons. The owner has just finished the harvest of cabbages, lettuces, aubergines and tomatoes. There is still enough to feed the herd during these days!

The small shepherds have much work to do to guide their cattle. In the herd, there are always strong heads, a little rebellious, adventurous, so it is necessary to keep them in a column. With the sheep it is easier but with the goats there are always problems.

After five kilometres of walking, the animals arrive at the pasture. The herd has total freedom! It is the moment of dispersal! Each one goes where it wants within the limits of the pasture. Instinctively, the animals group themselves around some plants that they appreciate very much.

Now, the small shepherds enjoy their time of rest while they remain with one eye open on the cattle.

At mid-morning, with the pretext of bringing the food, their mother joins them. Later, she sits down a bit farther away, on a knoll, an old termite mound. From her viewpoint, she pretends not to see anything. She remains there for several hours, in silence. Nothing escapes her.

Her attitude is intriguing. To those who ask about her presence, she simply answers, "I have responsibility for the education of my children. Even the small shepherds must learn to respect the well-being of others and of nature. For that reason I ask them not to steal, not to cut the branches of the trees in an indiscriminate way and not to gather the fruit before their maturity. This last advice seems to me essential for the environment. The children taste the fruits and they throw them away without consuming them. It is a loss for everybody. Today, I realize that they are following my advice and I am proud of it."



Combating Desertification The struggle of Women

The NGO Rayouwan Mata of Nigeria

Desertification is the result of a vicious circle, where the women can be found to be pivotal. To address this, the women have undertaken some actions of awareness to reduce the effects of desertification. These include the following: the popularization of the use of coal instead of wood consumption in heating houses, the construction of small dams for the retention of water, and the planting of trees.

Every year on 3 August, the Independence of Nigeria and the Day of the Tree, thousands of trees are distributed to the population, and they are planted in hectares of land designated especially by the administrative authorities.

The problems occur when the results of the aforementioned vicious circle take place. All the efforts of the month of August can be ruined by the spread of desertification. The drought causes the dissipation of the water, followed by the plants drying out and disappearing. All the efforts invested by the inhabitants can be for nothing, and there will be no compensation.

After the passing of the month of August, only a hundred plants might manage to survive. Since the efforts made so far have not been successful, the NGO Rayouwan has decided to promote some new initiatives for a strategy to fight against the problem with a more meticulous approach to certain issues. It is now trying to involve the schoolchildren as well as the mothers in a movement to adopt the same responsible behaviour as concerns the care and conservation of the environment. The work of sensitization consists in educating the children in the appreciation of nature and the need to protect it.

Plants are distributed to the children at each event, each one representing their life. This draws attention to the special relationship between that which is sown and the person who sows the seed. Here we have a relationship of love and respect where the child assumes the responsibility.



Voices from the drylands

SEWA's experience (India)

Women and Desertification

Almost one-third of the poor women from the unorganized sector are directly or indirectly involved in forestry or related activities. Yet, forestry remains a mainly male domain.

In rural areas, women play a family role and have to walk long distances to get fuel, fodder and water for their daily consumption. Some women also collect fodder, gum or wood for sale as income. They are more severely affected by drought and deforestation. Adverse conditions mean that they have to spend more time collecting, being unable to collect as much. This leads to a decline in consumption, income and the amount of time spent for other activities. These factors combine to reduce the communities from subsistence to survival level. With no other means of livelihood, this could lead to forced migration.



Activities Undertaken

While women are more vulnerable to negative impacts of these adverse conditions, they are also more aware of how to overcome them. SEWA¹ recognised the importance of forestry and related activities and initiated the Feminize our Forests and Water Campaign in 1995 with the aim of transferring this activity into the hands of local women.

Being the worst affected because of deteriorating natural resources, women have taken the lead in eco-regeneration programmes. These programmes try to build on local skills and resources. The economy and ecology are combined in SEWA's forestry work.

The different activities undertaken by women are the following: nursery construction, creating a sapling plantation, fodder farming, creating a green belt, increased awareness of environmental protection, and reduced migration.

Menaben is a member of SEWA's spearhead team² for forestry and regularly works in the village DWCRA nursery. She prunes the trees and applies fertilizers, water, and organic

1 Started in 1972, Self Employed Women's Association (SEWA) is a trade union of poor self-employed women workers from the informal sector. SEWA has a membership base of 535,000 women in 11 districts of Gujarat. SEWA organizes its women members for full employment and self-reliance – its two main goals.

2 In keeping with SEWA's ultimate goal of self-sustainability, the growing participation of local women is channeled. To employ the experience of the empowered village women, the concept of the spearhead team has been developed. Each of the activities has a spearhead team. Each team usually consists of ten people, two organizers and eight leaders from the different village groups from that activity.



insecticides. Menaben also grafted *ber*³ trees, planted them in her own field, and earned an income of Rs. 15,000. She also grew fodder as an alternative crop and made a profit of Rs. 3,000. Menaben says that now they have realized that one tree has many benefits.

“Water is scarce and we are forced to drink contaminated water, which leads to water-borne diseases. As part of SEWA’s water campaign team, we started constructing roof rainwater harvesting tanks and watershed development activities. Through the exposure visit, we learned about water conservation. I became the chairperson of the watershed committee. The availability of drinking water has prevented migrations. - Kankuben, Banaskantha”.

“Our lives were shattered after the 2001 Earthquake. This pushed us further into the vicious circle of poverty as we were already in the grip of drought. SEWA organizers came to our village with the Naya Ghar⁴ programme. They arranged a gramsabha⁵ to identify our needs and problems. We told them that we want to work. However, we were too scared to go out of the house and leave our children alone. SEWA organizers explained to us about the nursery programme and its importance in environmental protection and livelihood generation. I took a nursery of 5,000 saplings and raised aamla, neem and pilu. SEWA organizers gave us seeds and plastic bags. We received wages in three installments - first when we filled up the bags, second when the saplings reached a height of 1 ft., and finally on the sale of the saplings.

I have decided to raise nurseries every year as it not only generates livelihood but also protects the environment.” - Janakba, Surendranaga

A conclusion on the importance of women for the combating of desertification

Women have long traditionally been assigned the task of collecting and utilizing forest products. They are aware of the consumption patterns and are in a better position to determine what kinds of trees would be most useful to a local economy. Thousands of women are involved in Minor Forest Products collection. This is their only livelihood. They therefore care for forests as if they were their own.



While a patriarchal society will base its decisions for nursery and plantation varieties on the profits, women are more likely to see the subtle but significant short and long term advantages of the day-to-day fuel and fodder. As women play a family role, their focus will be on family needs rather than their personal needs. In the early stages, any new life is fragile and demands constant attention of caring hands. Trees are no exception and the women are no strangers to this concept either. As mothers, they are already well prepared for the type of work required.

3 Ber is a fruit tree grown locally. Its scientific name is *Zizyphus nummularia*

4 SEWA’s housing reconstruction programme in the earthquake affected areas.

5 A village level meeting



The Feminine Face of Desertification In sub-Saharan Africa

In the countries of sub-Saharan Africa, desertification attacks rural areas causing a loss of vegetation, aeolian and hydric erosion, impoverishment of the fertility of the soil, a reduction in the production of crops, general food insecurity, the loss of biodiversity, and a shortage of water resources. This falls mainly on the shoulders of the rural women who dedicate several hours of each day to hard jobs, such as the transport of water, the collection of wood etc. This has a negative impact on their quality of life and their health, and it reinforces and perpetuates the state of poverty.

These daily activities do not leave enough time for education, to receive training or to start up initiatives that can generate income which would improve their standard of living. Thus the principle role of rural women in socioeconomic development is seen to be seriously obstructed by these time constraints. It is stated that the related problems of desertification directly constitute a key element in the poverty of the local populations and impact on the natural resources that guarantee their subsistence level. This tension generates a pressure on these resources and accelerates their degradation.

Therefore, desertification cannot be considered to be an external fatality but is rather a conjunction of factors, mainly human.

Testimonies of rural women of Senegal

The testimonies gathered within the framework of the project ENDA-PNUD, Energy-Gender-Poverty, through Senegal (regions of Louga, Thiès, Diourbel, Fatick and Tambacounda) illustrate the true face of desertification in sub-Saharan Africa. The interest of this project is based on its capacity to empower women and to concentrate on them when searching for solutions. Therefore, it considers the impact of degradation of natural resources (water, soil, wood etc.) on the daily life of the rural women. Here are some examples of the various effects of desertification in different areas of Senegal:

- The zone of the Niayes (Louga, Thiès) is characterized by dunes, and a deterioration in the home garden cultivations and the vegetation cover;
- The *bassin arachidier* is characterized by salinization of the water tables, a reduction of the agricultural and pastoral spaces and the acidification of the ground;
- East central and south-eastern regions are characterized by forests that are clearly diminishing due to the effects of agriculture and deforestation for the gathering of wood as fuel.

The problems relating to water

Water is the source of life for the rural populations that do not have water of quality and in sufficient quantity to cover their daily necessities. This shortage of water is related to an absence of a water infrastructure in most of the towns. This condemns women to walk many kilometres to obtain this resource.



Saranké Diané (Nétéboulou, Tambacounda)

“The women look for water in groups.” When they go, the others follow, as many by night as by day. “If we all exploit the well at the same time, the water diminishes very quickly. The women do not sleep; it is an ongoing activity.”

Satou Faye (Nguéye Nguéye, Diourbel)

“Our wells cannot satisfy the demand of the population. There are people who come from very far. They travel several kilometres every day to obtain water. Often the wells are dried up, and then they are forced to wait for hours until they can fill their containers. There are limited sources of water and it is necessary to pay for it, but with what? We are not rich! If it is necessary to pay per 20 earthen bowls, then that creates a problem for us because it is imperative that our children have water to drink. Our only recourse is the well without a cover, which has not been treated with chlorine to assure the health of the community.”

Problems linked to access to the land

Senegalese agriculture, and that of sub-Saharan Africa in general, is agriculture of the pluvial type which is becoming degraded due to the worsening climate. In this sector the women play an important role in the cultivation of domestic gardens, but they face the problem of access to the land. Sometimes, however, the rural community through their groups benefit from renting the land as is the case in the following examples:

Amacodou Ndiaye (Diaoulé, Fatick)

“We are agriculturists. Our earth is sterile; it is necessary to help it to become more fertile, and without it we would be poor. When the ground was fertile, productivity was bountiful, and we were rich. When there is little productivity, we become poor women.”

Mariétou Diop (Potou, Louga)

“We do not have soil to cultivate. We raised this issue with the chief of the town, but it continues to be an enormous problem. We were given communal ground (the women groups) but it is a small plot and we had to borrow from other plots. We are prevented from farming for one whole year and it is for this reason that we do not tire with working the soil.”

Problems relating to the use of wood to heat homes

wood, which we usually think exists in infinite quantities in the countryside, is today a rare commodity for the women who are already overloaded with difficult work in the context of a worsening climate and a degradation of the natural resources. The indispensability of such a resource impels the women to use substitutes such as cow dung, rubber, fabrics, and so on; these have negative consequences for their health. The wood shortage, very acute in some regions of Senegal, is perfectly illustrated by the account of this inhabitant of Diourbel (river basin to arachidier):

Sanou Diouf, mother of the family (Ndongol, Diourbel)

“Our town is a desert. One day when I wanted to cook I looked for wood everywhere, but I did not find anything to put underneath my pot. I took my old plastic container and I used it as firewood; then I took my wooden stool and broke it into pieces. Finally, I was forced to take my old sheet and to throw it onto the fire. When I had finished cooking, my husband called to my mother-in-law in order to say to her that he was not going to eat, saying ‘It is not prudent to



The Feminine Face of Desertification In Sub-Saharan Africa (*continuation*)

eat food cooked on a fire fuelled with articles of clothing.’ I answered, ‘It is necessary to eat. If you do not eat, your children are going to eat.’ The smoke that comes off this fuel hurts my eyes, and sometimes my children ask me why I cry.”

Brigitte Thiaw (Ngueye-Ngueye, Diourbel)

“Each morning we are forced to go in search of wood for heating and now the cows no longer come to graze here, which means that we no longer have dung. We are left only with "kad", the use of which is prohibited by the water and forest authorities. If the authorities catch us cutting them, then they can fine us up to 30,000 FCFA [47 euros] and we cannot pay this penalty. The women remain in the house and we must prepare the food. Our town is a desert.”

Strategies of adaptation

In the numerous towns of Senegal, the populations complain of the weakness of agricultural production due to the infertility of the land, the lack of wood because of the absence of trees and forests, problems of health due to the absence of drinkable water etc. In spite of these difficulties that make them vulnerable, the rural population, thanks to their will and capacity for adaptation, apply strategies to fight against desertification, supported by other projects which include:

Bocar Diouf (Ngueye Ngueye, Diourbel)

“Our group was able to obtain financing that allowed us to develop activities to remove bovine fat. The money obtained from the sale of the oxen can be used to solve a series of problems with our families and in our towns. They know that the soil is no longer fertile as before, but thanks to the cow dung we are able to fertilize at least seven hectares. This contributes to an increase in our agricultural products.”

Mariétou Diop (Potou, Louga)

“We have the forests of the community that generate benefits and allow us to repair our machines (mills, etc.).”

Following this dynamic, the women are united in their associations with the purpose of looking for joint solutions to fight against poverty and desertification. This is seen in the activities relating to the cultivation of domestic gardens, the use of wood for the town and the domestic cattle ranch. However, they often lack expert advice on how to reach the objectives that are aimed at. It is with this in mind that ENDA are offering their support for the group and the socioeconomic organization with the purpose of providing the tools necessary for them to participate totally in the decision making of the town. This allows them to have better control over the problems affecting development.



The Mbarara Women (Uganda)



Women potting tree seedlings at Rwenshanku central nursery bed with facilitation from CECOD

Desertification refers not only to the concept of expanding deserts and advancing sand dunes, which has become a more permanent image in the public mind. It also refers to the less invisible and much more serious phenomenon of land degradation and drought in drylands, which requires a double effort and great expense to halt.

In Mbarara District, desertification has affected women's lives because they bear the responsibility for feeding the family. In the Mbarara District, 94 per cent of the total population lives in rural areas and the women utilize more than 85 per cent of the natural resources. It is the rural women who are the most affected by desertification and most who are probably its main

agent. Specific effects of desertification on women in Mbarara include: poor land productivity, long distances of travel looking for firewood, and lack of water.

It is poignant to note that only three out of ten women in the rural areas are literate; the majority, therefore, lack the technical skills and appropriate technologies to manage their natural resources efficiently, especially the land. Women are still engaged in a number of tasks linked to the process of desertification which include, but are not limited to: bush burning, over-tilling of land, deforestation, over cultivation, poor farming methods and poor methods of cooking with high rates of fuelwood energy consumption. Nevertheless, it is encouraging to realize that women are effectively participating in fighting desertification.

In Mbarara, rural women have formed among themselves the Local Developmental Action Teams (LODATs) at grassroots level. The LODAT is the principle dynamic entity through which policy, advocacy, education, a catalyst of new initiatives, technical support, grassroots initiatives, training and experience are shared and facilitated. Through such, LODAT's women have been able to establish communal nursery beds and individual household wood-lots, to practice agro-forestry, carry out soil and water conservation practices and to adapt to the use of energy-saving cooking stoves.

Some examples of such women LODATs carrying out activities to fight desertification in Mbarara are: Nshozi Mothers Union in Kashaka Parish, Bakyara Tugambe Nitukora (Women let's talk as we work) in Rwenshanku Parish, and Rugongi Women's Group in Katojo Parish; there are many others.

In conclusion, it is women who use the land the most in Mbarara, Uganda, and in most developing countries. The majority of women in rural areas still practise poor farming methods and this contributes to the process of desertification. They should thus be involved in combating desertification at the grassroots level.



Women's involvement in combatting desertification - Gnado's Approach

Desertification has made life unbearable for women. They now have to walk longer distances to fell trees for fuelwood and have little time and energy left to do other useful things. The women miss some of the wild delicious fruits, which they used to collect every time they went harvesting for fuelwood.

Most rivers and streams which were close to the settlements are no longer able to hold water until February when the women need water to help their husbands to reconstruct those houses which were destroyed during the rainy season. This means that the women have to travel long distances to get such water.

Women are known for their numerous household activities such as the collection of firewood for cooking and these days for charcoal production, and the setting of bushfires to fell dry trees for collection. These and many other activities of the women degrade the environment and lead to extensive desertification.

In a survey taken of the women in the Kasena Nankana district, about 80 per cent claim that the cause is poverty. They therefore have to get fuelwood and produce marketable charcoal. The additional income that they earn, especially during the long dry season, helps when there is no work.

However, the women have noticed that their attitude towards the environment is gradually worsening their situation; hence the need for them to change and adapt to new ways of solving the poverty problem.

Through awareness creation by Gnado in the Kasena Nankana district, women have seen the need to establish tree nurseries to produce tree seedlings for the establishment of family woodlots and domestic fruit gardens. This allows fuelwood and fruit to be available for domestic use and for sale in order to earn additional income.

Women have tried to find alternative income sources such as groundnut farming to earn income instead of depending on firewood collection and charcoal production. A total of 3,500 women undertook groundnut farming in the 2003 wet season. This created 3,500 acres of land for groundnut cultivation in the Kasena Nankana district. Groundnuts have a good market value; one unshelled 80 kg bag of groundnuts has a market value of US\$ 15, and one acre of land produces an average of eight bags.

Gnado is therefore assisting women in the Kasena Nankana district to undertake tree growing integrated with groundnut farming as sources of energy, income and improvement of the nutritional status of many families.

These two activities have assisted the women to raise their income levels and reduce poverty considerably within the family units. At the same time, tree growing has improved the vegetative cover of the environment, which has helped to keep desertification in check.



Yélé and her secret plant nursery (Côte d'Ivoire)

Yélé is a young Sénoufo woman from the north of Côte d'Ivoire who agreed to play the principal role in an audio-visual production. The modest countrywoman became a film star to defend the status of women.

The production was entitled *The dreams of Yélé*. The story related hour per hour all the activities of a woman, and God knows that the list of the tasks of an African woman is long.

The first scene takes place in the hut. Yélé is lying on her blanket; she sleeps peacefully, enjoying the last minutes of sleep before the cock crows.

The yellow pale sky announces the imminent rising of the sun. The first cock crows, followed by the echo of all the others in the village. The night is over. Yélé gets up from her blanket. It is the beginning of a hard day. Then she lights a fire under a large pot. What is she cooking so early? No, it is only hot water for washing herself and for her husband also.

In the meantime, she crushes the millet or peels a small sheaf of rice. Then she will go to the well to seek one or two buckets of water.

Then she will wash herself. In the Sénoufo habitat, a small construction is located at the back of the huts for the women, so that they can have some privacy.

It is here, in a corner of the washroom, that Yélé has installed her plant nursery. In the market, Yélé selects the best oranges and lemons to get their seeds. Her plant nursery is modest. She uses an old perforated canari,¹ fills it with soil and sows the seeds. Every morning, after washing herself, she waters her plant nursery. The six orange and lemon trees have leaves of a tender green and breathe healthiness. Yélé's plants are splendid. This year, again, she will increase the size of her home garden.

In the secrecy of her washroom, she prepares her future and her family's future.

¹ Canari: Pottery used to transport or store water

Women's involvement in combatting... (*continuation*)

The need to involve women in combating desertification is very important because they are the major players in the causes of desertification – tree felling, bush burning, charcoal production etc.

Assisting rural women to undertake alternative income-generating activities such as tree growing, crop production and dry season gardening using hand-dug wells will go a long way to divert their activities from destroying the environment and will prevent desertification in the long run.



Coping with Fuelwood Shortage in the Dry Regions of Uganda

by the Uganda Women Tree Planting Movement

Uganda is a predominantly agricultural country with 83% of its labor force is engaged in agriculture mainly at a subsistence level, although growth of export crops such as coffee, cotton, tobacco and tea is also carried out. In common with other African nations, Uganda's population has risen sharply during this century with an annual growth rate of 2.8% and currently stands at around 21 million people, predominantly rural with only about 8.7% living in urban centers. This has a huge impact on the natural resources of the country, especially the woody biomass. Uganda, despite having abundant natural resources, is ranked among the poorest countries in the world. Poverty is both a cause and effect of environmental degradation. Our people have short-term expectations and do not invest in sustainable resource management. They do not utilize these resources optimally because they are constrained by lack of production and consumption options. Consequently, they often use marginal resources and ecologically sensitive areas for survival, increasing environmental degradation in the process.

Land Use

The largest portion of the country is under woodland, bushland and grasslands, constituting 43% of the total land-use area and forms. Small-scale (subsistence) farming accounts for 34.7% of the total land area. The remainder of the area comprises open water bodies and wetlands. Although Uganda is predominantly an agricultural country, the average land holding ranges from only 0.4 to 3 hectares per typical household of seven persons and has been declining with the increasing population. This greatly affects the type of crops a household can grow on such land holdings. Trees have for a long time been components of most of the agricultural systems being practiced in the country. Their function as major providers of energy in the country cannot be overemphasized. Over 98% of the energy supply in the country is biomass derived from fuelwood and charcoal. For example, fuelwood for household, commercial, industrial and charcoal production for 1996 and 1997 was 20,051,000 and 20,778,000 tons respectively. Household fuelwood constituted more than 50% of these figures. Fuelwood demand is recorded to have increased by an astonishing figure of 67% between 1980 and 1992. The demand for firewood continues to increase with increase in population. Woodlands and bushlands and forests not under government protection have been extensively cleared to meet this demand.

At household level collection of firewood is the responsibility of women and school children, especially girls. Much of this firewood has been obtained from trees and shrubs during land clearing for agriculture. In the past, some of the firewood was collected from agricultural land lying fallow. However, fragmentation of land as a result of increasing population has reduced fallow periods and in most cases done away with it. With time sources of firewood have increasingly become scarce. This has resulted in women and children walking long distances in search of firewood, which has reduced their productivity on the farm



since much of their working time is taken up in the search. Due to this trend, the number of meals per day has been decreasing in the rural areas, leading to malnutrition and poor health. The land tenure system discriminates against women. This makes it next to impossible for women's wish to plant trees to meet their family firewood needs to be accepted by the men who own land and, in most cases, do not see the planting of fuelwood trees as a priority since they do not suffer the inconvenience of walking long distances in search of firewood.

Mitigation Strategies

The government, recognizing the role of trees in the national economy, launched a National Tree Planting Program in 1992 to intensify planting throughout the country. Each year a National Tree Planting Day is designated during the main rainy season (April - June) when every able-bodied Ugandan is supposed to plant at least one tree on his land. These trees are supposed to be supplied by government-run tree nurseries. However, given financial limitation, this well-intentioned program has not been adequately funded in order to have the desired impact.

A number of non-governmental organizations (NGOs) have over time been formed in different parts of the country where a shortage of fuelwood has been identified by studies carried out by the National Biomass Study Project of the Forestry Department. These NGOs work with local communities and help them to set up community tree nurseries. They supply them with nursery inputs and technical knowledge. Due to limitation in land holdings per household, the focus has been on multi-purpose tree species, which can provide fodder for animals, poles and firewood, such as: caliantra, sesbania, leucaena, eucalyptus, grevillea.

The Uganda Women Tree Planting Movement (UWTPM) is an NGO founded in 1985 in recognition of the hardships faced by rural women, collecting firewood being one of them. The first activity UWTPM undertook was to mobilize rural women at district level into groups to receive training in tree nursery establishment and management techniques, establishment of woodlots for those with adequate land or boundary and hedge trees for those with limited land, including intercropping of trees under an agro-forestry system. Government forest officers offered technical assistance in the districts where UWTPM operated. Due to financial limitations six out of 35 districts were selected as pilot districts. To encourage tree growing in the private sector, a pilot wood farmers' project was started in government peri-urban forests in the six districts. Individuals or groups were given five-year permits, renewable, to plant up to five hectares of eucalyptus for poles and firewood, with the income from their sale going to the permit holder. UWTPM groups in these districts planted a total of 40 hectares that have been providing both wood and income to the members. UWTPM received funding from ODA, NORAD, EU, USAID, UNDP, UNEP, British Council and a number of other multi-lateral organizations to expand its activities to other districts after realization of its ability to mobilize women at grassroots level and train them in practical skills. UWTPM also used tree planting as an entry point to train women in other health and economic activities, such as sustainable agriculture, cooperative societies, reproductive health, and HIV/AIDS awareness.



Coping with Fuelwood Shortage in the Dry Regions of Uganda (*continuation*)

Provision of firewood for household needs remains predominantly a women's affair in Uganda. As such women are advocating for the right to own land under the new Land Act, 1998. This will enable them decide how much of the land should be set aside for growing trees for firewood which probably will remain the main source of energy for the majority of Ugandans who live in rural areas. Encouraging the growing of trees by individuals in support of government programs will save natural forests, constantly under pressure from neighboring communities, from destruction. Another intervention that UWTPM is promoting is the use of energy-saving cook stoves made out of locally available materials to save on the amount of firewood used. The commonly used three stone fireplace is not only wasteful, but in an enclosed cooking environment leads to air pollution and increases respiratory diseases among women due to excessive smoke emitted by the burning wood. Planting of fuelwood trees for commercial purposes is also being promoted in areas where households have large pieces of land. The wood farmers' pilot project being promoted by the forestry department has shown that trees grown for poles and firewood are capable of providing financial returns from lands that would otherwise remain unutilized. The task ahead is not an easy one. However, the increasing demand for firewood is reason enough to pursue the goal of making the rural woman self-sufficient in her firewood needs.

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