SECTION 3:

Women's Organisations for Conservation

INTRODUCTION

The aim of this section is to look at successful attempts to mobilise women for rural development and analyse the conditions and the ingredients of success. The Case Studies are drawn from hot tropics/temperate zones, savannah and arid areas. This range of agro-ecological zones is intended to cover a diversity of ecological, socio-economic, cultural and technological backgrounds.

* **Arid Ecological Zones:**

SOS Sahel Village Extension Scheme, located in the Shendi Province of Sahel zone of Sudan

* **Semi-arid Ecological Zones**

The Katheka Women's Group Soil and Water Conservation Project, located in Machakos District, Eastern Kenya.

* **Hot Tropics and Temperate Ecological Zones**

Nimba County, Liberia: the Diamond Mines Rehabilitation Project;
Goviefe-Agodome Afforestation Project, Ghana
The Nyakinyua Gitiri Afforestation Project, Murang's District, Kenya.

* **Women's Groups and conservation activities in Kenya.** Because of the important role women's organisations play in natural resource conservation in Kenya, the author has found it necessary to devote a section to this experience.

Case study framework and information sources

Three elements are basic to the framework used for the following case studies:

One, the nature and needs of women's organisations and the need for recognition and strengthening of these together with the systems that support them.

Two, the role of women in development, particularly as it relates to resource conservation.

Three, how do women form part of wider social and economic systems?

The major information sources are development literature, personal experiences, interviews with individuals and discussion with women's groups in Kenya. One of the problems encountered in writing the following case studies has been lack of an adequate information base. There is a lot of literature on women in development, but it is dominated by descriptions of how women might participate in development and conservation activities. Case studies of women's experiences in conservation are few and far between.

The nature and needs of women's organisations

The women's organisations discussed in this section are grassroots organisations whose members, for the most part, eke a living from the soil and have come together to conserve the resource base. Reference to other forms of organisations (service-oriented welfare groups, political women wings, worker organisations, etc.) has been limited to their role and responsibility in supporting these grass-roots level groups. These grassroots organisations use a variety of names such as women's groups, women's committees, women's co-operatives, women's clubs, and clan groupings.[1]

There is a notable predominance of women in these groups, a phenomenon which is easy to understand. Women are the providers at the family level and are therefore quick to respond to development proposals. Part of the explanation could also be traced to the fact that women take calculated risks more readily than men. This last fact can be illustrated through an experience from one women's association - the Organisation of Rural Association for Progress (ORAP). ORAP is an organisation of about 300 groups which was initially purely a women's organisation but when men saw positive results, they (men) began to join the group. One female member of the group explained this phenomenon in the following way, "Men are always slow in taking things up. They want to wait and see. When there is progress, they come".[2] There are many instances where, compared to men, women have been found to be more committed environmentalists for similar reasons.[3] During the 1985 Women's Conference, (End of UN Decade for Women - Nairobi), Dr Mostafa Tolba, Executive Officer of UNDP underlined women's role in conservation when he commended women for being effective agents of change.

Women's organisations and groupings discussed below were formed for very specific reasons, but they all demonstrate a common goal and commitment to conservation. Women's organisations play an important role in collective and personal development. On the one hand, the members are able to express their needs more effectively, groups satisfy social needs, help pool resources and define development paths.[3] Secondly, the groups also "help one another in times of need or hardship and also help the community meet its needs".[4] The mushrooming of these grassroots organisations during the last decade is thus not surprising. Today, grassroots, environmental and anti-poverty groups "probably number in the hundreds of thousands", and their "collective membership runs in the hundreds of millions".[3] These groups display great diversity in a variety of areas; for example, the scope of activities, group composition and access to resources. But, in the midst of this diversity are some common needs. Access to resources, credit systems and information for conservation are almost universal needs in these organisations.

Lack of these critical inputs has been found to adversely affect women's programmes. Women's "lack of access to appropriate technical expertise is a major obstacle for women in improving their productivity".[5] The degree of resource related problems, however, varies between and within countries and sometimes even between communities.

These observed disparities have variable causes but often narrow down to the social, economic and political climate prevailing in each country. As an illustration of this diversity, one study found that women in Muranga district of Kenya have greater control over resources as compared to their counterparts in Kakamega district.[6] Similarly, these differences between women should be fully appreciated and taken into account when designing women's programmes.

Activities undertaken by these grassroot groups can be loosely classified into: income generation and resource conseration programmes. The Soya Bean projects in West Africa, the Organisation of Rural Association for Progress (ORAP) Zimbabwe, women gardening groups in the Casamance area of Senegal, the women refugees horticultural project in Golgotta, Ethiopia are but a few of the income-generating examples.[3] Some very notable resource conservation examples include the famous Chipko of India and the Green Belt Movement of Kenya.

The role of women in development

Women's role in development as defined here, demands that women be treated as equal partners, with full rights to participate in decision-making. Unfortunately, women have not made major strides in this direction due to continuing barriers to their full participation in the development process. It is now accepted that for women to fully participate in the development process, radical adjustments are required to remove these barriers. Only then will women's access to education, training, resources and management be realised. "Women's work" has been described as consisting of a triple role - productive, reproductive and community management.[8]

Women are integral to any community and should not be seen as an isolated group. It is today widely recognised that without complementarity between women and men, there is no hope of success in development. Women have a wish to be recognised as equal partners, but they have also demonstrated that they are key actors in maintaining society. For example, when women villagers initiate conservation activities, their intention is not to compete with men, but to complement men's activities in order to improve family, environmental and social welfare.

Case study selection

In the process of compiling this section, some difficulties have been encountered. Firstly the scarcity of relevant case studies particularly those that originate from outside East Africa. Where found, case studies in women's activities were either too brief
or irrelevant to the section.[9] In contrast, information on "Why" and "How" women should participate in development is in abundance. It is, however, assumed that the non-availability of material relevant to this section is not due to total lack of examples but possibly of comprehensive documentation and/or information exchange.

Secondly, research on women has in the past concentrated on only a few critical issues such as women's roles in food production, and other areas are still relatively unexplored. This underlines the dire and urgent need for research and documentation of women's conservation activities at the grassroots.

In selecting the case studies, it has been desirable to make as wide a selection as possible for the purposes of learning from a wide variety of experiences. The key factors influencing the selection of the following case studies are as follows.

* Ecological variations.
* Social, cultural and economic backgrounds.
* Variety of conservation activities undertaken by respective groups.

* Group status, for example the author's emphasis on presenting experiences from grassroots organisations.

In many parts of the areas covered by these case studies, women do not own or control land resources. In most cases, land is owned and controlled by men, who have the sole right to make decisions on how land is utilised and managed. Yet, in these same areas, women have traditionally played a key role in agriculture and conservation; even where this has not been the tradition, social and economic changes have placed new challenges on women. The net effect is that, women are expected to carry out the bulk of agricultural activities to sustain their families. And because they do not enjoy as much freedom as men, options for women's participation in conservation are potentially limited in scope and extent.

From the above, it might be concluded that any intervention strategy that addresses constraints to women's participation in conservation without occasioning social and political confrontation may be described as having achieved a level of success. But it is very rarely, if ever, that conservation is perceived or promoted as an end in itself. It therefore follows that success is not complete until women are the direct or indirect beneficiaries from conservation activities.

Success indicators

Very often, it is very difficult to discover whether women are direct beneficiaries of conservation activities. Some of the most common measures used to evaluate success in development activities are direct indicators, such as increase in women's incomes, increases in agricultural output, and sustained conservation. These might be ideal within a certain context, but they are very difficult to measure. "Proxy" indicators can be
practical, these range from observation of improved kitchen and home environment (for example better clothing for women and children), increased participation of women in social activities, social and political acceptance of women as managers and decision makers, to perceived improvement of nutrition resources, farm and rural environment and increase in/or demonstration of women's leadership roles and organisational skills.

Although there are some cases where quantitative measures are used, qualitative or "proxy" indicators dominate success measures used in selecting the case studies discussed in this section. For example, from Shendi Village in the Sudan, the prevailing social, religious and economic conditions indicate that the acceptance of unprecedented roles for women as conservationists is an indicator of success. Examples of success abound in such a context: women preparing nursery materials for men to produce seedlings (a non-traditional practice), the successful introduction of tree planting in women's home gardens - fruit trees in particular have the potential of improving the family diet, especially during the lean months of the year. From the same region, women's initiative in producing seedlings for sale has created a new potential for women's income generating activities.

The case studies from Kenya demonstrate another variety of success indicators. These include the highly developed women's organisational skills, the emergence of women's leadership roles, independent generation of women's incomes and of decision making on how the incomes are used. The Kenyan women's groups are also characterised by a high degree of unity and their ability to solve problems, which is indicative of skilled management and women's ability to

define, develop and maintain common goals and objectives amongst group members. Moreover, the women's groups of Kenya have demonstrated the ability to incorporate men when they need assistance for addressing "tricky" situations (Katheka male night patrols to protect women's work): this indicates a high level of awareness of locally viable and acceptable gender roles amongst women, and is again an indicator of success. Sustainability of women's conservation-efforts, which have grown in magnitude and range over the last twenty years is yet another indicator of success.

Readers are offered an opportunity to draw out other indicators of success in women's conservation activities from the rest of the case studies in Exercise 1 (Section 3.11).

CASE STUDIES

Arid ecological zones

Case Study 1: SOS Sahel : Shendi Village Extension Scheme Sudan

SOS Sahel International succinctly summarizes the environmental, social and economic situation in the Sahel with the following statement:
"The Sahel stretches across Africa, from the Atlantic coast of Mauritania to Ethiopia and the Red Sea. The word Sahel is the name given to those countries which border the southern fringes of the Sahara. It is a huge area of low rainfall, sparse vegetation and poor soils. Yet this fragile environment is home for millions of rural people. They are in the frontline against the expanding desert which swallows up land and ruins livelihoods. It is here that famine strikes first ..... of all the development priorities in the Sahel, forestry is one of the most urgent.[10]"

SOS Sahel International is an association of African and European voluntary agencies working to protect the fragile environment and increase food production in the Sahel region of sub-Saharan Africa. SOS Sahel intervention programmes are characterised by a high level of response from villagers, and women in particular have demonstrated that Sahelian communities are ready to change their lives for the better.

The Shendi Village Extension Scheme (SVES) is a project that addresses the problems of desertification, sand encroachment on agricultural land along the Nile. It is situated about 20 kilometres north of Khartoum on the Eastern bank of River Nile. This project is one of two community forestry projects sponsored by SOS Sahel International, based in Britain. SOS Sahel began operations in Sudan in 1985, soon after the drought of 1984 when the situation was in dire need of external resource input. When SOS Sahel began operations in Shendi, virtually all forestry schemes in northern Sudan were run by the government. The SVES and other projects of its type were readily welcomed by both the government and local communities. The SVES budget for 1985-89 was Sterling pounds 550,000 with the principal funders being European Economic Community, Band Aid and the Overseas Development Administration of the British Government.

The Nile Province is characterised by extremely low and unreliable rainfall. Most agricultural production is irrigated. Drought, desertification, resource degradation, low incomes, and a declining quality of life are key developmental issues in the area. The population and culture within this area is basically Arabic, and the religion is Muslim. Social and religious customs

inhibits the free movement of women within society, and therefore mixing with the opposite gender. It is therefore not surprising that many projects working in this area have had difficulties in addressing women as a target group. Yet, the women here lack training, and skills for resource management and need direct access to developmental processes.

The SOS Sahel was one of the first groups to successfully tackle this problem by addressing women as a target group in the Shendi Village Extension Scheme. When the SOS Sahel began operations in Shendi in 1985, the project set out with a clear goal: to promote participation of men, women and youth in this
community forestry project. This case study is therefore a good example of a mixed gender activity, one where men and women complement each other.

Conservation activities undertaken by the project include establishing shelter belts to break the wind and stop desert sands, introduction of fast maturing species to provide fuelwood, planting of woodlots and trees in home compounds to provide fuelwood, and planting windbreaks in agricultural land. Apart from protection of land, development of renewable wood resources is promoted to reduce stress on natural resources in the area, and to provide alternative fodder for animals. Besides conservation activities the project is also involved in addressing other community needs such as provision of water, social development and income generation; efforts that have improved the lives of women. The project has also involved local people in innovations such as the use of puppet theatre as an educational tool.

Involving women in this afforestation project was not without problems. Raising seedlings and planting trees are traditional male roles in this area and the project had no difficulties in getting the men to participate. The most difficult hurdle was to get the women involved without disrupting the traditional community life. Fully aware of these cultural difficulties, SOS Sahel chose a non-confrontational strategy. The process started by establishing a women's extension department which initiated women's participation because it was acceptable to Sudanese men, since their women could work with another woman. The fact that the department also encouraged women to grow seedlings and carry out other community nursery activities within their own homes, ensured that the model was acceptable socially and culturally. The women's extension department conducted baseline surveys to ascertain issues and constraints that were likely to inhibit women's participation.

Some of the constraints were found to be lack of women's access to tree management, lack of conservation skills, low income, lack of income generating activities and in general their restricted position in society. In dealing with the issue of women's participation the women's department took these constraints into consideration.

Following baseline surveys the women's department established that women might be willing to become involved in tree planting, but they had limited resources, knowledge and skills. To alleviate this problem, the women's section of the project encouraged women from the village of Seyal Kabir to form women's committees which would plan and implement women's programmes. Through this committee women were able to work together in groups, but they also engaged in individual activities such as home compound nurseries. A core element in encouraging women's participation in tree planting was training. Women were trained by female staff on how to raise seedlings, how to take care of planted trees and how to manage planted and existing woody biomass.

Women's organisations for conservation

To complement the role of men who actually establish the shelterbelts in the fields, women produced tree seedlings within homestead nurseries. Later on, the Seyal Kabir model was replicated in other villages. The women's committees have been so successful that apart from providing seedlings for shelterbelts and home compound planting, women now sell seedlings and generate income. At present, these seedlings are sold to the project, but in the Phase II of the project, market sales will be started. Women also contribute to the forestry programme by making mats for shading seedlings in community nurseries; the mats are made at the home by the women, and taken out to community nurseries by the men.

Between 1985 and 1987, the women's nurseries in Shendi produced and sold to the project for community shelter belts a total of 5,710 seedlings while another 3,959 seedlings had been exchanged for seedlings of the women's own choice from the village nurseries. In addition, women had planted about 5,500 trees, with a majority of the seedlings coming from their own nurseries or earned from seedling exchange.

Plate 16 - A woman tending her seedlings at home. Credit: SOS Sahel.

One group of women also planted a woodlot in a section of their village and later on, began growing vegetables within these woodlots. The production of vegetables contributes to improved nutrition in the villages. Local acceptance of the fact that women can generate income from their nurseries is viewed by SOS project staff as an indicator of the elevated status of women.

The above are significant achievements in a dry climate and harsh conditions which are not conducive to forestry activities such as seedling production. More important, the role of the women's committees has broken the cultural barrier without causing confrontation or conflict of interest between men and women. Women are now managing trees planted around their homes and therefore have direct access to tree resources. The fact that women have been trained to raise seedlings, grow trees, and on the whole understand the nature of conservation using locally viable processes means that women have at their disposal training and experience for renewal of conservation activities. Women have used water from their kitchens to raise seedlings, and it is a good example of locally sustainable effort.

The SVES, which was originally set up by expatriates, is now managed by Sudanese staff seconded from the Sudanese Forestry department, and by local employees. All the Sudanese technical staff have been trained, with special emphasis being given to training of women extension workers. Establishing a high level of locally trained technical staff, handing over of project management activities to local staff and the overwhelming response of villagers, especially women, are all key indicators of success. Sustainability is also ensured through training of local people. SOS Sahel anticipates "the next step for the SVES is to hand over responsibility for forestry activities to the villagers themselves, starting with those who have worked longest in the projects". This however, is going to be difficult to achieve as many activities are dependent on the project for inputs and management.[11]

SOS Sahel has already demonstrated that the success achieved in Shendi is replicable elsewhere. The model for women's participation has been replicated within the Ed Debba Community Forestry Project, which is working to protect both villages and agricultural land from sand dune encroachment in the Northern Province of Sudan. A unique characteristic of the project in Ed Debba is the high prevalence of "women's extension nurseries". Seedlings from these nurseries are sold in the village market for cash income and the project is also encouraging women to produce seedlings for internal and external shelterbelts.[12]

The core elements of success in mobilising women's participation within the SOS Sahel experience are as summarised below.

1. Respect for cultural and religious norms - the organisation supports and encourages women to raise seedlings within their home compounds thus not flouting the cultural and religious norms.

2. Use of local people to promote women's participation - hiring a local extension leader made it easier for the project to reach the local women.

3. Promotion of gender complementary activities - while the women raised the seedlings, the men planted. Since the women would not go out to establish the shelter belts, the project would have faltered without the men.

4. Addressing locally recognised priorities - the advance resource degradation and energy shortage were already of major concern to the community, hence the positive response to the project.

5. Commitment to women's participation - the project had women as a target right from the start and did everything possible to sustain this participation.

6. Flexible approach (for example buying seedlings from women).

7. Integrated approach - both in terms of mixed gender and diversity of activities.

Semi-arid ecological zones

Case Study 2: The Katheka Soil and Water Conservation Project: Machakos district, Eastern Province of Kenya.

The Katheka Soil and Water Conservation Project is an example of a women's initiative to combat accelerated resource degradation. This degradation process is seen as significantly contributing to declining food production, drying of water sources and scarcity of fuel wood. Katheka sublocation, with a total population of 3500 people living in three villages and covering an area of 11 square kilometres, lies in a difficult environment. The climate is harsh (low unreliable rainfall rarely exceeding 1000mm even in a good year), the soils are porous and rocky and the terrain is rugged and difficult to work. The vegetation is sparse (acadias, scrub bush and coarse grasses) and the peoples' standard of living meagre. Basic services such as electricity and piped water are non existent and there is only one health centre.

In 1987, approximately half of the houses in the sublocation had corrugated tin roofs, a common measure of wealth in the area. The area is isolated and the only connection to the outside is a rutted and dusty road. No resident in the area owns a vehicle or a motor cycle; in fact only 13 own bicycles. Maize, beans, pigeon peas and fruits form the main subsistence crops, while low-yielding coffee is grown by a substantial number of farmers. The majority of the people also keep livestock as an insurance against drought. Water scarcity, soil erosion, low yields, unemployment and poverty are among Katheka's most pressing problems.
As in most parts of Kenya, married women in Katheka do not own land. Ownership of land by women is limited to cases of widowhood or single motherhood. In the latter case, the single woman will have bought the land since inheritance laws still discriminate against unmarried daughters. Since the Katheka women are responsible for producing family food, they have access to the land and in many cases control the food crops. The men control the cash crops (mainly coffee) although it is the women who till the land. Because the women have to feed their families, they have also to tend the land in order to produce enough.

The problems of resource degradation in Katheka are not new and in fact go as far back as 1920's. The problems had become serious by the early 1970s. During this period, the area was intensively grazed, soil erosion massive, food production per capita declined and there were few village institutions capable of dealing with the situation. Survival in the area was therefore at stake. Reversal of this situation called for hard options and speedy action. The Assistant Chief of

the sublocation started to promote what has today transformed Katheka - building and strengthening local institutions as a vehicle for change. The ultimate goal was to reverse resource degradation and boost food production. He encouraged school enrolment and supported the transformation of mwethya groups from family groups to village-level institutions. Since then, these groups have become instrumental in initiating resource management planning and action in the village. The number of groups has continued to grow unabated during the last 15 years.

While in the early 1970's Katheka had only five such groups with membership of 40 in each group; by 1987, 12 such groups had been registered and by 1988, they had risen to 15 groups. The average membership in any Mwethya group is about 35-40 and in all cases, the majority of the members are women of all ages. In the mid- 1980's the groups formed one umbrella organisation to strengthen the negotiating power of the groups. The individual groups have, however, continued with their regular activities and today are respected by the entire community.

The Mwethya groups are well organised and smoothly managed. There are few internal conflicts between members possibly because of their unity of purpose and shared problems. Each groups has an executive committee elected through the ballot. A constitution representing the interests of every member is drawn, discussed and endorsed by the members. These groups are dynamic and closely adhere to their constitution. Twice a week they work on a member's farm and once a week on communal projects such as construction of roads and gabions and the rehabilitation of dams.
The individual members decide on the type of work to be done on their farms, but in most cases, they work on either new or old bench terraces. On the whole absenteeism is rare; severe penalties are applied for absenteeism, including the imposition of fines. One of the most visible of the mwethya group efforts is the extensive bench-terracing system, a striking feature of the Katheka landscape. The terraces are deep (1 metre high) and are beautifully reinforced with grass. The women dance as they dig and shovel the soil away, possibly to keep their spirits up during this environmental struggle. Each group currently constructs or repairs 1500 to 4000 metres of bench terraces each year, totalling 18 kilometres per year for the entire sublocation.

Another related activity is water conservation. The seasonal rivers usually have a thick layer of sand which insulates water during the dry period. The residents scoop this sand away, draw the water and then return the sand. The net result of these activities has been very positive: soil erosion has been reduced substantially, crop yields significantly increased through improved water conservation and increased water supply in the micro environments, and water resources conserved. Tree planting, which was until recently a neglected aspect of resource conservation is also picking up.

The resource conservation activities that the Katheka women undertake are not limited to individual members' fields. They also work on communal projects such as schools, rehabilitation of gulleys and gravelling the roads. What is intriguing about these communal efforts is that for the most part, they individually identify the activity and plan the intervention without coercion or request from local administration. This Katheka example shows that resource conservation in developing countries remains predominantly a woman's responsibility.

Besides resource conservation, the women have embarked on income generating activities to meet other family needs. Nearly all the groups now make baskets for sale, others specialise in

brick making while the umbrella organisation has expressed a wish to undertake a paraffin sales business. This new dimension clearly brings out the need for more integrated approaches in the development of women's programmes.

The Katheka women's success in resource conservation has occurred without much external technical support. The women have had no formal training in resource conservation and their traditional knowledge has on occasions proved inadequate. This lack of technical support in the area can be easily explained. Katheka, because of its remoteness and lack of basic facilities and services, has failed to attract agricultural extentionists. For a period of 4 years (1984-1987), the area had no extention officer. To overcome this problem, the women persuaded a retired agricultural officer to instruct them on how to lay out the terraces. The request was granted and the few women who were taught how to lay the terraces have continued to be a useful resource to the community. The other areas in which skills were found lacking were in tree planting and development of water sources such as wells.
The community uses simple technology that is easily managed. The most widely used implements include: the hoe, mattock, fork jembe, shovel and oxen drawn cart for ploughing. A local artisan provides repair services at an affordable price. This ensures that the tools are available for work at all times. Lack of spare parts and expertise, (characteristic of complex technologies in large projects), is therefore not a problem in this community. This should however not be interpreted to mean that no change is needed in Katheka. In fact the current technology requires upgrading. Oxen ploughs would help plough the land and dig trenches. Oxen carts for carrying wood, water and other commodities would relieve the women from the back breaking chores and release useful time for other productive activities.

It is now almost universally accepted that links with the outside world are as important as they are inevitable. Events within Katheka best demonstrate this fact. While the Katheka community has done well in the area of resource conservation, it has found it difficult to ward off destructive external threats to its resources. During the last 10 years or so, building contractors from Nairobi have been attracted by high quality sand found on the Katheka river beds. The mining of sand has two major implications on the community: the huge lorries ruin the roads (that the women so painstakingly maintain to ensure that sick people can be taken to hospital) and the water resources are diminished by the removal of river sand.

The community has however not given up and through its usual determination to survive, the men and women have dug deep trenches across the tracks leading to the rivers. Although the lorries occasionally manage to circumvent these barriers, the ingenuity of the people is impressive. But possibly more impressive is the fact that the people clearly see the linkages between resource conservation and increased yields of water, food and trees. This example is in itself a major lesson: these grassroots organisations require policy and other forms of support to protect their hard won sustainable development.

When the research team from the National Environment Secretariat (Kenya) went to Katheka, it was primarily to establish why the village, so remote and isolated had done so well. The team was able to summarize the elements of success in the following way.

1. Viable local institutions -mwethya groups, youth groups and church organisations have been the driving force behind these achievements.

2. Strong and supportive leadership - the Assistant Chief, has promoted local organisations and encouraged them to devote their energies to resource conservation for survival.

3. Manageable and appropriate technology - the community uses tools that can be effectively managed at the village by the community. This has automatically removed the need to import "expertise" to maintain the tools.

4. A challenging environment - resource conservation to increase production was a priority, hence the entire community is involved.

5. Manageable pace of development - development was in harmony with local capabilities e.g. technology.

6. Strong self-help spirit - traditionally, the people, particularly the youth used to form work groups and would on rotational basis carry out all kinds of work in the group member's farms. The mwethya groups therefore were a perfect fit into the society.

Box 14 : Kenyan women resist sand mining threat

WOMEN ARE LEADING the fight against profiteering sand excavators who are damaging the environment in order to supply Nairobi's booming construction industry.

Sand traders in the Machakos District buy permits - which provide about half of the local council's revenue - entitling them to take as much sand as they can transport from designated sites. Fleets of ten-tonne trucks have been ferrying the sand to the capital by day and night.

Water shortages

While the traders and the council make some quick money, the local community - and particularly women - pay the real cost of the operation. In some areas severe erosion caused by the large scale removal of sand has led to water shortages.

These have increased the burden on women who are forced to walk long distances to fetch water - sometimes up to 8 Km a day - or to dig holes in dry river beds in an effort to reach the water table.

"The women benefit little from the trade," says Charity Kabutha, former senior education officer with the government's National Environment Secretariat. "They know that even if they were paid for the sand, the income would hardly compensate for the loss of water."
Kabutha points out that it is mostly the local women who build makeshift dams using stones, branches and sisal to check the rapid run-off of rain from the sandy soil into the river. Their efforts to retain water supplies are undermined by excavators who remove the sand that builds up behind the barriers.

continued ...

Box 14: continued

Further damage is caused by the trucks which make up to four trips a day, damaging vegetation and compacting the soil, making it less permeable to water. The result is lower crop yields from the land bordering the rivers. With many men working away from home, this makes it harder for the women to make ends meet.

Controls have proved only partially effective. "Sand scoopers think that since they own a permit they own sand wherever they find it and trespass on other people's land to collect it," says Julius Mwinde, an ecologist with the National Environment Secretariat.

Laws have been passed allowing sand excavation only during daylight hours in an attempt to prevent excavators from trespassing on undesignated land by cover of night. Even so, night excavating continues.

Women help themselves

To cut costs and maximise profits, some drivers fetch sand from the nearest convenient spot instead of travelling to the sites allocated by the council.

But the women are fighting back, often through mwethya, or self-help groups, of which there are more than 27,000 in Kenya. As well as implementing conservation measures to stop water run-off, they build trenches to stop the lorries from driving onto their farms or along undesignated routes. Vigilante groups are sometimes organised against the unwelcome intruders.

Winnie Ogana in Nairobi
Extracted from "African Business" Sept 1990

Hot tropics and temperate zones

Case Study 3: The Nyakinyua Gitiri women group afforestation project (Kanuro, Muranga District, Kenya)[19].

The Nyakinyua Gitiri women's group afforestation programme represents a women group's determination to reverse environmental degradation to support sustainable development. It operates in a temperate ecological zone, in the high potential highlands of Central Province, Kenya.

This group was possibly little known about until 1989 when it made history by winning the UNEP's Global 500 Award. The award is highly competitive and winning it is no mean achievement. Their winning demonstrates the dynamism of this
44-member women's group brought together in 1980 by the desire to protect an environment threatened by deforestation and consequent soil erosion.

The Nyakinyua Gitiri women's groups is based in Kahuro village, Mugoiri location, Muranga district in the Central Province of Kenya. Ecologically, this is a high potential zone: high bimodal rainfall (March and October), fertile soils and a well developed infrastructure (piped water and electricity generally available, a tarmac road passes through the area). The topography is dominated by steep slopes and ridges, a setting that encourages soil erosion. A cash economy based on these resources has developed; coffee, bananas and dairying are the main cash earners. These favourable conditions have resulted in high population densities, and extreme parcelling of the land. The land is very intensively cultivated and the practice of having fallow periods has, of necessity, been completely discarded in recent years.

Landlessness is a common phenomena in Muranga district. Cultivation on river banks and steep slopes (although strictly prohibited) is perhaps a demonstration of the hopelessness of the situation. The net effect of all these activities is accelerated soil erosion which has left the land bare and created deep gulleys. The rivers have turned brown, with soil and silt a permanent reminder to the residents that their environment is in real danger of degradation. Women in this area enjoy high social standing and play an important role in the process of decision-making at the family level. They are allowed to own capital assets and indeed some of them own land. This rather high status for women can be traced to the country's war of independence when many men were killed and others interned and women had to take over the male roles. To a large extent, women in this area control land resources. One good example of this is where women are signatories in coffee accounts.[13] It was therefore not surprising that the women got together to arrest resource degradation without much assistance from men. They took up the challenge as the story below shows.

When the women got together in 1980, they had a vision: to heal the denuded land and to protect all other areas damaged by soil erosion. They, however, did not underestimate the demands of this undertaking; they knew that besides their own labour, some capital input was required to set up the tree nursery that would raise all the seedlings needed to realise their objective. The beginning was difficult for this group; they lacked the basic resources for setting up the tree nursery: money and land. In fact the group initially abandoned the project when they found that it was not profitable. But with encouragement and modest support from the Ministry of Agriculture (polythene paper for raising seedlings and 3 drums for water) the women decided to give it another trial, this time determined to succeed. In an effort to sustain the project, the group combined raising of seedlings with goat rearing and basket making.

When the women were ready to start in 1983, they found themselves without land for a tree nursery. Luck was on their side this time. The local chief allocated the women a small piece of land (0.1 hectare) outside his office for the purpose. In 1983, the group started off by raising 8000 seedlings. In 1985, they had 15,000 seedlings. By 1988, the group had 25,000 in the nursery ready for planting the following year. In 1989 alone, the group raised 35,000 seedlings. To date, the group has raised about 97,000 seedlings. The women themselves have planted some, distributed others to institutions, such as schools, and sold the rest for cash. Besides tree planting, the group undertakes other forms of conservation. They have rehabilitated deep gulleys in the neighbourhood.

The groups also "owns" a one-quarter acre demonstration plot. A man who recognised the commitment and hard work of this group, gave them this plot which has today become a focus of agricultural demonstrations. The women have been taught all aspects of farming. In fact they feel that they no longer need agricultural extension officers. The women have also benefited from training sessions held outside the district. They have been to a neighbouring district to learn more about dairying and food processing. They say that they now easily make juices and jam. Again in recognition of their hard work, the County Council of Muranga have allocated the women a commercial plot which they hope to develop when they get enough funds.

Although the group members have had no individual direct benefits from their project, they indicate that the intangible gains are immense. These include the world fame of the group, afforestation of the area and the social gains which include assistance of the poor members in payment of school fees. The group has also designed a "revolving" loan system to assist the members meet some basic household needs. Each month, each of the members contributes Twenty Kenya shillings (equivalent to about one dollar) and this amount is given to 3 women every month. The members spend the money on items of their own choice but school fees and household items such as cups and plates are the commonest items of expenditure. The group is also notably humanitarian. At least once in a year, they assist an orphanage in the neighbouring location. The assistance is mainly in form of food produce. Considering that the members have hardly enough for the families because of the small-sized farms, this is a commendable gesture.

But what has become of the proceeds from seedling and goat sales? All their profits have been banked but twice they have lost their money through the collapse of local financial institutions. They again have opened another account, this time with a more stable institution. Their dream is to build a shop, start a tailoring business and train young girls who have prematurely dropped out of school.

Analysis of why the group has done that well reveals the following elements of success. 1.The group made a decision to initiate the project to fulfil a felt need and were therefore committed to its success. This unity of purpose meant that the women explored all avenues to ensure that income would be generated to support the primary project.

2. The charismatic leadership embodied in the chairlady of this group. She is a shining example to the group and has their full confidence.

3. Immense support from the administration and the Ministry of Agriculture. The chairlady also recognises the great support provided by the entire community. She says that although she refused to have male members, they are always available when called upon, including her own husband.

4. Sufficient training in all aspects of tree planting husbandry and the fact that children are also taught the technology.

5. Carrying out well understood and accepted activity: Tree planting has a history in this area

and the women had no trouble in distributing the seedlings. The high demand partly explains why the number of seedlings has continued to increase every year. During the annual tree planting week, the group supplies most of the seedlings free of charge.

6. A clear understanding of the linkage between resource degradation and productivity has led to the group's fiery drive to protect the environment. The once eroded slopes are now all green and the deep gullies healed. This success has provided an impetus for future action.

7. An ecologically suitable environment for tree growing. The survival rate for seedlings in this area is very high, and that in itself is a motivating factor.

Case Study 4: The Kyapee land reclamation project, Nimba County, Liberia.

The Kyapee land reclamation project represents a successful grassroots (mixed gender) resource management effort using local techniques. The achievements of the project reflect successful local entrepreneurship, resourcefulness as well as dedicated and committed leadership.

Kyapee village is in Zoe-Geh District, Nimba County, Liberia. It has a small population of possibly no more than 900 people, divided into 3 clusters each of about 300 households. The average household size is about 6. The population falls into two groups: indigenous and migrant. The indigenous Gio (Dan), population is said to have settled in the area during the last century. They are experienced farmers. The migrant Mandigoes from the neighbouring Mali and Guinea settled in the village in the early 1950s and started diamond mining in late 1950s. A look at the geographical setting shows that the village is underlain by metamorphic rocks which are diamondiferous and which extend
into swamps. The climate is tropical high temperatures (18.4 - 33.7 degrees celsius), heavy bimodal rainfall (2000mm per year). The tropical forests which once covered the village have been replaced by secondary forest, through many years of shifting cultivation. Within the swamp vegetation are residual pockets of tropical forest. The prevalence of water and insect carried diseases which include malaria, filaria, hookworm and diarrhoea brings out some of the difficulties the village has to live with.

Some of the key environmental problems facing Kyapee village are associated with the effects of a rapidly increasing population and indiscriminate diamond mining. The village community fully understands the linkages between resource degradation and production for survival. The diamond mines reclamation programme is an attempt to halt this degradation process and to create productive land. The reclamation process is tedious and lengthy. It begins with the weeding of the vegetation around the pits and the weeds are left in the pit to decay. The decayed vegetable matter is spread out in the pit as a first layer, and is then covered with soil generated by the mining activity. This process of layering (vegetation and soil) is repeated until the pit is full. When full, the compost is mixed manually (by feet). This composting technique ensures and sustains the fertility of the soil for continuous cultivation. This ingenious technique was initiated by one farmer in the village and the results were so encouraging that the chief acquired an extensive tract of abandoned diamond mines in the swamp from an individual owner in the village on behalf of the village for utilisation.

The reclaimed land has been divided into 32 pieces each of 0.3 hectare. Rectangular ridges are built around these plots to trap water and nutrients in the swamp for rice cultivation. Each plot is separated form one another by narrow channels through which the swamp water flows freely to every section of the rice field. During land preparation, the soil is turned thoroughly to remove all the unwanted weeds that would stunt the growth of the rice seedlings. The rice is rotated with groundnuts, beans and potatoes during the dry season. Through this process, the village has reclaimed 25 acres of land.

One of the factors behind this tremendous success has been strong community organisation and social cohesion. The unity of purpose generated by this organisation has had immense influence on the success of this village. Two well-organised agricultural groups each with 300 members, have, through their dynamism and commitment, rallied the support of the entire village. Each of the groups has a chairperson and a secretary. These two officials are appointed by the town chief with the approval and consent of the entire village. The social cohesion and the democratic decision making process amongst this working groups is indeed very remarkable. All acknowledge the traditional authority in the village. Absenteeism is rare but when it occurs is punishable by a fine. These groups have received a lot of encouragement and support from the town chief who chairs all development meetings. In fact, the chief was instrumental to the village acquiring communal land for rice growing; the two Agricultural Working Groups are accountable to him.
The substantial gains made by Kyapee village speak for themselves. The reclaimed communal swamp has become a major source of development funds for the whole village. The proceeds from the rice growing efforts have been used to undertake a number of self-help project such as the construction of an access road to the village and building an elementary school. The success of the Kyapee village initiative can be explained in the following ways:

1. The programme was recognised as a priority to the community. The people's survival was threatened by high population increases coupled with increased resource degradation and extra land was required to ensure survival.

2. Local institutional support. The two strong Agricultural Groups mobilized enough labour for the challenging reclamation work. The unity of purpose among these groups has sustained dynamism and commitment.

3. Strong and supportive local leadership. The town chief acquired the land from a land owner for the project. He chairs all development meetings in the village and the working groups are accountable to him. This political support has been a source of tremendous strength for the village.

6. An easily manageable technology. All able-bodied members of the community could contribute.

Case Study 5: Agroforestry Practices in Goviefe - Agodome, Ghana.[14]

The Goviefe-Agodome afforestation programme is an example of how a local institution can be mobilised by an outside organisation to initiate productive activities. In the case of Ghana, the outside body was the Mobilisation Squad (Mobisquad), a government body, which revitalised the existing local groups and jointly embarked on an ambitious afforestation programme.

The Giovefe-Agodome is a small village of approximately 500 people located 250 kilometres to the north-east of Accra. It is low lying (200 metres) and has a hot and generally humid climate (30 degrees centigrade). Annual rainfall averages 1200mm per year and is biannual i.e. March-July and September-November. The vegetation is predominantly savanna with only scattered pockets of deciduous forests along river valleys and on high ground. No primary forest remains, all having been cut down in the last 50 years. The residents depend on agriculture for survival. Maize and cassava are the staple foods of the area. Coffee and cocoa, which used to be extensively grown have been abandoned due to declining soil fertility, falling world prices and farm inputs are too expensive. The land area under yams is also diminishing due to declining yields. There is no open market in the village but some local exchange of commodities occurs at the household level.

One unique feature of the village of Goviefe-Agodome is the large number of trees, both exotic and indigenous, which have been planted for various purposes. Every household maintains at least a tree either for shade, for its fruits or ornamental purposes. The main road which passes through the village is lined with a well-trimmed, evergreen hedge. These features are not recent creations. They have grown up with the people and the village and a high premium is attached to trees. Traditional and social meetings are conducted under the shade and protection of trees. Traditionally, when the big, old trees fell, there was an organised ceremony in honour of the fallen tree and a symbolic planting of a new one in its place. This background is necessary for one to appreciate the activities and the determined effort demonstrated by the Goviefe-Agodome Afforestation project.

Official or formal planting of trees in the area has a long history. During the colonial administration, especially between 1919 and 1939, tree planting was encouraged and a lot of ornamental, shade and fruit trees were planted in the area as a whole. After the World War II, however, many able bodied men moved out to other parts of the country in search of job opportunities. The remaining population cultivated the land indiscriminately without concern for the forest. The people of Goviefe-Agodome began to observe the adverse effects of deforestation in the early seventies and individuals reactivated tree planting activities with emphasis on commercial trees. This was the environment in which the project started its work.

As mentioned above, the afforestation programme was a response to threatened resource productivity in the face of increasing population. The economic hardships occasioned by resource degradation and supported by a strong tradition in treeplanting signalled success for the project right from the onset. Strong and well-structured institutions have also played a significant role as explained below.

Ghana's national pattern of institutions is replicated at all levels of administration. The three

main bodies at the national level (Committee for Defence and Revolution, the Mobilisation Squad and the 31 December Women's Organisation), are replicated, at the village level. At the head of the village is the Chief with his Council of elders, the Youth Group embraces the mandate of the Mobisquad and the Queen Mother and her Council assume the duties of the 31 December Women's Organisation. These organisations, particularly the Mobisquad, have played a major role in the development of Giovefe-Agodome. The Mobisquad, whose mandate was to "translate the aims of the Revolution into practice" had a responsibility for providing basic social services and farming assistance in the rural areas. They are movements of men and women united by a common goal; to improve the quality of life of rural communities through provision of social services. For decision making and co-ordination, the Mobisquads have executive committees elected by the members.

Giovefe-Agodome village Mobisquad was established in 1981 but was initially sluggish. In 1985, the village leadership recognised the potential of the organisation in mobilising the traditional groups for development. The Chief and his Council of Elders, the Queen Mother and her Council, church groups such as the World Vision gave full support to the Mobisquad and other traditional organisations.

The fact that the Mobisquad took about 4 years to become fully operational is possibly an indication that forces external to a community, be they national or even lower levels, have to be legitimised by the local communities and organisations. The Giovefe Mobisquad embarked on active community development programmes in 1986. Although its mandate is primarily provision of services, afforestation became the first activity. The Mobisquad was trained by a Forestry Extension Officer and because of the available local knowledge and the simplicity of the techniques used, the group quickly grasped the principles of 'modern' tree growing. This activity was selected because it had multiple benefits; it would reduce soil erosion, provide energy, and cash which would support the development of social services. The main afforestation species are leucaena and teak. Leucaena is quick growing and provides woodfuel, fodder and improves the soil by nitrogen fixation. The teak, on the other hand, is slow growing (10 years) but fetches good prices. The group also grows cassava, yams and maize to raise funds to benefit individual members and support community development efforts. Quick benefits have sustained the enthusiasm and the zeal of the group. This is what gave rise to the short-term and long term goals of the programme. The programme has recorded major successes in the last four years and below is a summary of its history.

In 1986, the Mobisquad received seedlings from the Department of Forestry and with these, their programme started. In the same year, they planted cassava, yams and maize and raised 750,000 cedis from their proceeds. The groups set aside 30,000 cedis for community development (community toilet and clinic) and divided the rest among the members. In 1987, the group established its own tree nursery with about 5000 seedlings which were planted on both private and communal land. The Mobisquad set aside one day per week for communal work. By 1989, the group had 9.6 hectares of crop and tree nursery. In 1988, half the proceeds from the sale of crops was used to buy shares for the members to belong to a co-operative society. The group now has a co-operative certificate. Work on a day care centre and a village pleasure garden has been initiated. The group has to date (1986-1989) generated 5 million cedis (about US$16,700). By local standards, this is no mean achievement. The success of the Giovefe afforestation

programme can be traced to the following factors:

1. Afforestation is a traditionally accepted activity and was thus well received and adopted.

2. Although the idea was "externally" introduced (the national level Mobisquad), the details of the project were conceived and implemented by the local members with very little assistance from outside. The establishment of a tree nursery, the preparation of the land for cultivation and transplanting of seedlings and maintenance of the farms have all been undertaken by members who share the respective responsibilties.

3. The project has brought some immediate benefits to the members of the group. This is an incentive and encouragement to invest more in terms of time and energy.

4. The wealth of local knowledge and tree planting husbandry has been a useful asset during the implementation of the project. The advisory services of a local agricultural extension officer has however enhanced the local skills by injecting a "modern scientific" dimension.

5. The existence of well structured and strong institutions in the village has been a major asset. The Chief and his Council of Elders, the Youth Group, etc., are all formally recognised institutions that command a lot of respect from the village. Their contribution to the success of the project has been immense.

6. The existence of a communal spirit has made it possible for people to come together to contribute their own labour for the common good.

7. The fact that the people had already recognised the dangers of environmental degradation and had initiated planting of trees made it much easier for the programme to take off.

Women's groups in Kenya

Case Study 6: Women's groups and Conservation in Kenya[15].

Over the last two decades, hundreds of women's groups have been formed in Kenya with two specific aims: combating environmental degradation and generating household income. These groups are composed of a 20-100 members, and it is estimated that depending on its size, each group might have a capacity for producing between 2,000 to 10,000 tree seedlings in one season. Quite often, the stated objectives of these women's groups are to mobilise women for environmental conservation, developing and enhancing women's leadership roles in environmental management and, promoting women as equal participants in environmental conservation.

The majority of groups own and operate community nurseries, while in rare case some groups might encourage women to form on-farm or individual nurseries. There are three options through which members of these groups contribute to environmental conservation and generate income. One, women's groups can sell seedlings directly to villagers; two, women can plant some of the

seedlings from their nurseries on their own farms; three, women's groups can sell seedlings for cash in the market.
The groups are characterised by a high level of community involvement. They rely on grassroots support from local leaders and extension agents and sometimes monetary support from rural elites and politicians. Nursery sites are sometimes donated by a group member, but some groups have managed to elicit land from public institutions such as schools, churches and local administration. Women provide voluntary labour on a duty roster basis, but sometimes members contribute through the Kenyan "Harambee" system a nominal fee to hire a nursery labourer. Women use their own farm tools in most cases and augment seed supplies from NGOs and government Ministries by collecting seeds locally. The majority of women's nurseries have a multi-purpose role in that they also produce vegetables for consumption and sale. The key to success of women's groups is that they own the nursery produce, the proceeds of which might be divided amongst the women or ploughed back for nursery maintenance.

In most cases , women's groups operate independently; however, many initially require an initial injection of technical and capital input in the form of technical assistance, materials such as seed, poly tubes and nursery tools. There are various non-governmental organisations, church groups and local institutions which promote and/or support women's groups by providing this initial input. While it is not possible to discuss the role of all these NGOs and institutions here, three examples have been provided. These are the Green Belt Movement (indigenous NGO), CARE International in Kenya (international PVO) and KANU Maendeleo Ya Wanawake Organisation (KANU-MYWO) which is a local institution.

The Green Belt Movement

The Green Belt Movement was originally formed by the National Council of Women of Kenya, but now operates independently. The Movement has promoted the formation of hundreds of women's group nurseries, mostly located in the high potential and marginal zones of Kenya. The Movement buys seedlings from women and issues them free of charge for planting of green belts in many parts of Kenya. Women also plant green belts around their nurseries and take some of the seedlings to grow trees on their own farms.

Groups assisted by CARE-Kenya

CARE-Kenya has been working with women's groups in Siaya district, Western Kenya, since 1985. Many of the groups assisted by CARE were existing on a clan or village basis and CARE's input has been to provide materials such as watering cans, nursery implements, seed and technical advice. Although generally known as women's groups, the groups in Siaya have a male membership. Hundreds of small scale farmers have benefitted from the activities of groups assisted by CARE in Siaya, and the women's groups supported by CARE have made a tremendous contribution to environmental conservation and diversification of household income and nutrition resources.

Groups Affiliated to KANU-Maendeleo ya Wanawake
KANU Maendeleo Ya Wanawake (KANU-MYWO) started originally as a national organisation aimed at promoting women in development. A few years ago this organisation was adopted by

Kenya's only political and ruling party, KANU. Women's groups affiliated to the original MYWO were automatically adopted by KANU-MYWO. The organisation supports women's conservation groups by, providing access to external and local sources of funding for materials, equipment, and providing institutional support. The programmes promoted by KANU-MYWO range from rural energy and conservation to tree planting and soil conservation efforts. The key to the success of groups operating under this organisation is emphasis on a grassroots approach, reliance on local resources, and an integrated approach to development. For example a typical KANU-MYWO affiliated group might engaged in a variety of activities such as management of tree nurseries, selling of tree seedlings, tree planting on individual farms, making and marketing local crafts, constructing energy saving stoves, and marketing agricultural produce.

In spite of their high rate of success, women's groups in Kenya face many problems. Because their nurseries are often located near the road or on public land, the nurseries require fencing to keep animals out. Fencing wire is extremely expensive and without input from various sources the women would not succeed. Pests, flooding, poor selection of species and organisational weaknesses are other problems that affect women's conservation activities. At the farm level, some women may experience lack of support due to traditions which discourage women from tree growing and management. This is especially prevalent in some parts of western Kenya. At the organisational level, women chance being exploited by unscrupulous middlemen and even some of their own members.

It is intriguing, however, that in spite of these problems, women's groups in Kenya have been so successful. Listed below are the core reasons for success of women's conservation efforts in Kenya:

1. A social climate that is committed to and supports women's participation in conservation efforts.

2. Policies that recognise, emphasise and support women's role in development.

3. Traditions that have promoted women to form and manage mutually supportive groups.

4. The spirit of Harambee (self-reliance) which permeates Kenyan society.

5. Availability of organisations and institutions that inject initial capital and technical training.

6. The district focus for rural development policy which has been implemented by the government of Kenya.
7. Availability of a cadre of locally trained
extension staff who speak local languages, and more often than not live within rural villages.

LESSONS FROM THE CASE STUDIES

The case studies above have demonstrated that women are important actors in environmental conservation. The case studies also indicate that communities (both men and women) are

becoming increasingly aware of the linkage between resource degradation and the deteriorating quality of life. For example, it is now recognised within many communities that soil degradation contributes to low agricultural yields. In particular people have found that the total involvement of community members has a crucial role to play in environmental conservation. Thus communities are now emphasising that effective conservation can only be achieved with the participation of all members of the community. Women in particular appear to have demonstrated the potential for group efforts.

Some of the case studies show the dynamism of women as environmental managers. Others demonstrate that women and men can work together successfully to complement each other for a common goal. This demonstrates the importance of gender complementary roles. In Katheka while women have found it easy to construct terraces, they alone would not have been able to keep away the sand scooping lorries. Men are able to do this, and can spend nights out in the fields protecting the water sources. Men also prepare and repair farm implements, such as handles for hoes and mattocks, and hand them over to the women for conservation work.

While communities are often well aware of local problems and needs, they may not always have the resources to address the problems which do not have simple solutions. No community exists in isolation of others, or of the national government (and the international economic and political situation) and therefore traditional groups in developing countries require this kind of support.

The support can take various forms e.g. material inputs, technical assistance, financial and in some cases, policy measures that protect their work. In nearly all the cases studied, the communities and women's groups were found to be lacking in some skills or were in some ways vulnerable. For example the Katheka case showed that people's efforts could be threatened by sand mining. Another example was the Kyapee village in Liberia, where migrants were threatened by abandoned diamond pits.

It is also apparent that most practices have been carried out not solely for conservation but as a vehicle for achieving another primary objective. The Mwethya groups, for example, build bench terraces to increase agricultural production on their individual farms. The case studies indicate that for local conservation activities to be successful there must be motivating factors. Such a factor might be perceived need or extreme threat to survival. Other factors might be awareness campaigns conducted by
non-community members or even direct benefits to the individual. The Giovefe Mobisquad profits from the cash cropping activities are, for the most part, distributed to the members and only a small percentage is used for communal purposes. The Katheka women's groups devote most of their group effort to individual members' farms and much less on communal work. Even work on communal land is done to improve the livelihood of the women; the ditches to limit sand scooping, roads to reach health centres are examples. A supportive political and social system is always a prerequisite for group conservation efforts. The case studies from Kyapee in Liberia and Katheka in Kenya bring this out clearly. In both cases village groups relied on administrative officials for support.

The case studies also show that, in many instances, work leading to effective resource management is not undertaken until the local situation has deteriorated to the extent of

undermining survival and assurance of basic needs. The Kyapee example in Liberia, the Nyakinyua Women's group afforestation project in Kenya confirm this phenomenon.

The case studies have also shown that external agencies promoting conservation need local input to succeed in promoting action. For example in Sudan, SOS Sahel had to hire a local woman to work with the women. The participation of local people appears to legitimise agency intervention. Even where local governments are involved, for example the mobilisation squads of Ghana the involvement of local people is critical in promoting action.

Deliberate respect for cultural and social norms is another prerequisite for successful conservation activities, especially where the activities are initiated by outsiders. The case of SOS Sahel in Sudan underlines this fact as do the women's traditional groups in Kenya.

The technologies used for conservation have to be simple and appropriate for local conditions. In Katheka, there is a blacksmith who repairs implements made of iron. These technologies will be even more successful if there are local people, such as the retired agricultural officer, who can provide technical assistance. People are more likely to sustain conservation technologies when they can look inwards for support from within their own communities.

Plate 17 - Water, a resource for life. Credit: FAO.

Plate 18 - Training for women is a prerequisite for sustainable conservation efforts. Young women farmers in Ethiopia. Credit: FAO.

Because women lack training, when they initiate conservation efforts they have to involve men for technical support. Cases where such support is available from other women have demonstrated that the process is smoother and more participatory. However, gender complementality must not be overlooked.

Financial management skills are often lacking amongst women. This is a major deterrent to conservation, and development projects of all kinds. Women need to maintain oversight and control of their money in order to protect their own interests. Training in financial management would be welcomed by many African women's groups.

Conservation projects are most popular and spontaneous if accompanied by other benefits such as income generating activities. This has been demonstrated in Kenya, where thousands of women's groups have combined conservation with income generating activities and are seen by communities as a means to a better life. Another example is Liberia, where the farmers are conscious of the value of increasing land productivity.

The core elements of success can be summarised as:

a) Organisational structures that favour women's participation in development. Even within gender mixed groups, the role of women must be fully recognised and put within the right perspective.

b) Policies that favour and promote the role of women in development and create the right environment for their participation.

c) Respect for cultural and social norms, which may, however, need to be circumvented to promote women's participation in conservation efforts where necessary.

RECOMMENDATIONS

a) Recognition and support for local groups is a crucial factor in promotion of conservation.

b) Use of local expertise is not only desirable in local communities, but also a necessary condition for success.

c) Understanding and respect for cultural and social norms creates the right atmosphere for successful conservation efforts, but this does not mean that culture is static and unchanging or that women must not challenge injustices against women.

d) Training of women is a prerequisite for sustainable conservation efforts. Training is required in all fields, but management skills are a priority.

e) It is important that policy makers are sensitized to women's needs in development. The Katheka case study from Kenya shows how licencing for sand mining has militated against the conservation efforts of the community and ignored the women's views and interests.

f) The use of simple, locally available technologies is extremely important. Training in technology must be sensitive to women's needs and physical ability. It is hard work for the women of Katheka to establish terraces. If a simple technology could be found it would ease their burden.

POTENTIAL FOR CASE STUDY REPLICATION

The case studies have demonstrated how certain factors influence women's activities in agriculture and conservation. Since the case studies are used here to demonstrate "successes and lessons learned", the question of whether these successes are replicable is pertinent.

Some of the case studies might be easily replicated in areas with the same ecological, economic, cultural and religious setting. For example, in Sudan the SVES experience has already been replicated. Experiences from women's groups in Kenya have been replicated over and over, with a high level of success.

However, in considering whether these case examples can be replicated it is important to recognise the great variety of ecological zones, group constitutions, social, cultural and economic backgrounds. These factors indicate that it is impossible to use any of the case studies as a "blue print" for success. But this is not necessarily a disadvantage: it serves to re-emphasise the dangers of assuming women to be a homogenous group. Women all over the world may have parrallel problems and aspirations. But they live under very diverse conditions, and these have to be taken into consideration in planning for development activities. This does not however, prevent cautious use of the case study experience as relevant background information for planning purposes.

What is more important is to use the core elements of success in the process of planning and intervention. For example, the demonstrated respect of cultural norms as a core element of success should be practised within each cultural setting. Cultures might differ from one place to another and even within similar ecological zones, but the need to work sensitively within cultures will remain a core element of success in development initiatives. Another core element is the need to recognise and place within the right perspective women's role within the social and economic system. All over the developing world, there have been many instances where women's work load, and even marital problems have been made worse through efforts to bring them into the mainstream of social and economic activity.

The factors raised above indicate that attempts to replicate successful experiences should not seek to replicate or create identical activities from one place to another. Rather emphasis should be given to lessons learned from processes and methods that have worked. This means that, for example, instead of replicating the Nyakinyua Gitiri group, other organisations should seek to emulate the spirit of this group. Key questions are: what process did they follow? How did they get together? What were the triggering factors? How have they shared their workload? How have they maintained group cohesion and achieved their common goals?

These questions underline the fact that knowledge of successful experiences, is not enough by itself; the need for detailed knowledge of women's social and economic setting, their felt needs

and problems are key elements of success, and are integral to the successful replication of experiences from the above case studies.

NOTES FOR TRAINERS

Case studies are a very useful means of bringing to life the experiences of women's groups working in conservation. Trainers can use the six case studies provided as a basis for discussions on the practical lessons to be learned from each case. Alternatively they may prefer to use their own case study material, to make the discussions more focussed on the local area.

Below are some exercises which you, the trainer may find useful. Use them to get some ideas, and adapt them to your own needs.

Exercise 4: Indicators of success

Background
This exercise is designed to allow the training participants to identify, describe and assess the applicability of different indicators for measuring the success of development activities.

Method
Ask the participants to divide into working groups of 3 or 4 people. Assign each group one of the case studies described in this section of the manual (or use your own material if it is more appropriate). Allow each group to spend 40 to 60 minutes reading through the case study, and discussing and answering the following questions:

* What indicators are used in this case study to measure the success of the activity?

* What type of indicators are they (qualitative, quantitative, or proxy measures)?
* How might these indicators be relevant to the area you are working in?

Ask a spokesperson from each group to report back on their discussions. Compile an overall list of the indicators identified, and discuss how they could be measured in practice.

Exercise 5 : Lessons from the Ndimbo Land Use Project

Background

The case study here of the Ndimbo land use project illustrates some of the problems associated with planning an activity which requires the cooperation of women for its success but which does not take account of the women's priorities from the start.

Methods

Ask the participants to divide into working groups of 3 or 4 people. Allow them 40 to 60 minutes to read the case study below and answer the list of questions provided. Ask each group to summarise their ideas on large sheets of paper, to briefly present their findings to plenary.

Case study example

The village of Ndimbo is situated in East Africa, near a small lake which is part of a gazetted national park. The people of Ndimbo are traditionally hunters and gatherers, who have over the years lost their hunting grounds through nationalisation and demarcation of their traditional land into a national park. In the past, the Ndimbo lived in a peaceful environment with an abundance of land and engaged in barter trade with other communities living on the other side of the lake. When the park was established near their village in 1965, the rights remaining to the natural environment were taken away from the people of Ndimbo, and they found themselves surrounded by a forest which they were not supposed to utilise. Even the road going into and out of their village was only a "buffer zone" which they could walk through but not utilise for economic and other purposes.

To secure some permanent claim to the little land left to them, the Ndimbo started cultivation on a permanent basis. They found themselves lacking in agricultural skills, but over the years they learned how to cultivate crops traditionally grown by agriculturalists living on the other side of the park. The men of Ndimbo learned how to make farming tools instead of hunting tools, and one man became the local tools expert. His skills were later handed over to his four sons.

Over the years, the Ndimbo found that try as they might, their women could not avoid going into the national park for firewood, wild vegetables and fruits; Ndimbo men on the other hand went into the park in search of honey, and the occasional
animal hunted furtively to supplement their diet. Noting this infringement on park resources the government employed park wardens and guards to keep people out of the park. The Ndimbos, who were on the verge of starvation, started thinking of how they could improve their environment to make it more productive. They appealed for help, and the government after acquiring some project funds decided to post an agricultural officer, a forester and a veterinarian to assist the Ndimbos improve their resource base and conserve their small farms.

Ecological, social and economic data derived from various research programme carried out by people who helped the Ndimbo to bring their plight into the limelight indicates that the soils are reasonably fertile, rainfall is adequate for production of crops such as millet, sorghum, legumes

and seasonal vegetables; average land holding is 1.5 hectare. Men own land in Ndimbo, but women have traditionally played a key role in procuring food, managing homes and gathering firewood, and they had a strong position in society. In the past the men of Ndimbo were always within two days walk from their homes, but many men migrated to the urban areas in search of jobs when land shortage ensued. In the majority of households, only old men and young boys were left with the women. The women have survived through sheer determination and a social system that operates on the basis of strong clan groupings. These groups were previously lead by men, but their absence meant that women took charge of social leadership.

The Ndimbo land use project was started in 1972 with the objective of improving land use management practices, initiating resource conservation and introducing new agricultural crops. The project was implemented by a group of experts who came from outside the Ndimbo community. The group assumed that since this was "an African society where men dominate social and economic activities" the project would address men as a target group. The Project established an extension system dominated by men, who would give extension messages to the community. To enable the community to use modern land use management practices, the project decided to implement a small scale income generating project which would make tools for agriculture in the area.

After two years of project operations, hardly 20 farms had adopted the farming techniques initiated by the project. The villagers, lead by the women farmers, boycotted the modern tools and purchased their tools - sometimes on credit or through barter trade from the four village tool makers. When the project was evaluated after three years, it was recommended that the project should do a 'baseline survey' and to re-define the needs of the villagers before going into the next phase.

You, the reader are requested to imagine that you are leading the team which will carry out this basic research and plan the second phase of the project. The following questions are meant to assist you in defining your research and identifying issues vital to the success of the project.

a) Describe the key lessons learned from the Ndimbo land use project. What issues might have reduced the effect of the the project at the household level?

b) Describe the methods you would use to find out about the needs of the villagers.

c) List the key information you would need to know before planning the second phase of the project.

d) In your own opinion what would be an ideal strategy for extension to improve land use and resource conservation.

Exercise 6: The Bidii Women's Group Irrigation Project

Background

The reasons why conservation projects fail can be explored using this case study. The need to start small, taking into account the existing responsibilities and workload of the local women and men, can be highlighted.

Method

Ask the participants to divide into groups of 3 or 4 people. Allow them 40 to 60 minutes to read the case study below and answer the list of questions provided. Ask each group to summarise their ideas on large sheets of paper, to briefly present their findings to plenary.

Case study example

Kiiako village, situated in East Africa, is a small village that was little known even in its neighbourhood before 1985 when one of the many women's groups in area (group known as "Bidii") came to prominence through massive assistance to start an irrigation project. The village is remote and is situated about 100 kilometres from the regional capital and 300 kilometres from the national capital. Literacy levels, particularly for women, are low (30%). Low rainfall, sparse vegetation, black cotton soils that are difficult to work characterise Kiiako's environment. Roads are dusty in the dry season and impassable during the rains; there is neither electricity nor telephone communication. Access to drinkable water and health facilities are limited. Production technology is fairly simple; oxen plough being the only advanced farming implement. As a result of the constricted economic opportunities, there is heavy male outmigration to the urban areas for paid employment. The absence of men in this community has made it necessary for the women to take up some roles originally carried out by men. To say the least, life is difficult in this area.

Remittances from the men working outside the area are small and intermittent mainly because jobs that pay well are difficult to come by. Women therefore engage in small income-generating activities to meet some of the family needs. Because the women lack capital and other production skills, they engage in small businesses which such as basketry, pottery and livestock keeping. This the women do in groups rather than individually. In this community of 10,000 people, 40 such groups are to be found. Most of the groups have male members. The presence of men in the groups is found to be an asset when manual jobs need to be done.

The above is the environment in which the "Bidii" women's group operates. Today, perhaps the most regularly asked question is how this group was picked for assistance in the midst of so many other groups. This is the explanation: the group's patron was at the time a politician with strong external connections. Through this connections, the patron was able to interest a donor to consider assisting this particular group. The available donor wished to support an irrigation project. Through the project, the group would be provided with equipment such as diesel pumps, fibre glass pipes, sprinklers, cold storage, lorries and saloon cars. The donor projected that after 5 years, at least 200 hectares would be under irrigation and would support at least 2000 women.

The donor would carry out a comprehensive technical survey and design the project on the basis of the survey findings. To ensure the success of the project, a Technical Advisor would be attached to the project for a period of 2 years after which the women would take over the entire management of the project. The patron was overwhelmed by the offer. The terms of this assistance were totally accepted and what remained was the signing of the contract. To the women, the offer signalled the end of a 5-year struggle to make a living through poultry and goat keeping. The news about massive assistance that would bring about an economic revolution to Kiiako village spread far and wide.

Project implementation was almost on schedule. The technical survey and design was completed within 6 months of signing the contract, the equipment arrived 3 months after and actual irrigation started within a period of another 4 months. Irrigation was initially started on 15 hectares of land. The rationale was to use this as training ground for the women and the area would be extended as the women became familiar with the technology and general management. The yields matched the high inputs and there was every sign that the women would make good money through the project once the area was extended. The two-year contract for the Advisor soon ended and he was soon to leave. How much had he achieved during that period? Some of the women had learned how to operate the equipment, and rudimentary understanding of book-keeping but not much else about the technology. The land under irrigation was only 25 hectares, less than the plan had anticipated. Two years after the departure of the Advisor, this is the situation. The group only operated during the first year and then closed down, the women found that the enterprise was not viable because they had to hire a technician to maintain the equipment, they needed an accounts clerk to keep the books and with the escalating fuel prices, they could no longer keep the pumps running. Today,
the equipment is lying idle and the women have employed a watchman to keep vigil
while they look for another donor to revive the project. In order to raise funds for the watchman's wages, the women are leasing out some of the tractors.

This is perhaps one of the many examples of projects that failed thus causing suffering to the "target" group and disappointment to the donor.

You are responsible fore briefing the donor on the problems the project has faced, to begin negotiations and planning so as to avoid a similar catastrophe again.

Consider the following questions:

a) What factors contributed to the project failure? Illustrate, with a flow diagram, the negative impacts of the project, and the root causes of these impacts.

b) Draw up a checklist of strategies which the women's group would need to follow in dealing with the donor to ensure a longer term success than before.

c) Draw up a similar list for the donor, to ensure their involvement is a success also.

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C. KABUTHA

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