

## Planning with women for wise use of the environment. Research and practical issues

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### ABSTRACT

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First, a brief overview is given of the linkages between rural women's work in providing basic needs for their families in a deteriorating environment, and increasing poverty, showing the necessity of paying attention to women's tasks and living conditions in policy and planning for sustainable development. This leads on to the problematic concept of participation. In this connection two cases, a negative and a positive one, are used as illustrations. Some research issues are discussed. Finally, suggestions are made on how to organize and stimulate the participation of women in activities directed at sustainable development.

### INTRODUCTION

At the International Conference on Conservation and Development: Implementing the World Conservation Strategy, held in Ottawa, Canada, 1986, it was concluded that "The specific place of women in promoting sustainable development is increasingly appreciated. However, there is still an overall lack of serious consideration of the role of women, their contribution and potential in relation to environment and development, and there has been a failure to allocate sufficient resources to ensure their inclusion and integration."

There is a growing realization that in the rural areas of Third World countries poverty and environmental degradation are two sides of the same coin. On one side the poorest people, of whom the majority are women, bear the heaviest burden of the degradation of living re-

sources. On the other, their very poverty may induce them to put even more pressure on the environment on which they are directly dependent for their daily survival.

Of course this is not to say that poor people are responsible for the world-wide destruction of the environment. They are rather the principal victims, who generally have no other choice than to exploit depleting resources further. Overpopulation in the rural areas of developing countries is often held responsible for environmental degradation. However, the main cause of deforestation, to take only one important aspect, is rather the large-scale commercial use of tropical wood. Rural people preferably use dead wood, for it is easier to cut, lighter to carry and burns better than green material (Dankelman and Davidson, 1988).

Our concern here is not with national and international political and economic relations

which stimulate modernization processes and economic "development" based on a sell-out of resources for commodity production and the adjustment of balances of payment. In this article we concentrate on the situation of women in rural areas.

### POVERTY AND RURAL WOMEN'S WORK

Recently, development strategies to improve the living standards of the rural poor have also taken environmental issues into account. Policies, programmes and projects are increasingly aimed at "sustainable development", which means that natural resources will be utilized and developed in ways that ecological processes and ecosystems will be maintained and biological diversity preserved (IUCN, 1980; Commissie Ecologie en Ontwikkelingssamenwerking, 1986).

In the struggle against rural poverty and environmental degradation, development policies require identification of the key actors and an understanding of their incentives and constraints. Survival tasks, providing the daily sustenance of the family are largely women's responsibilities. Through these responsibilities, women are directly involved in the use and management of natural resources: soil, water, forests. Environmental degradation makes it increasingly difficult for women to cope with their tasks in providing basic needs for their families. Because they are hit first and hardest, they may be most interested to mobilize for sustainable use of natural resources. However, it is then crucial that they are helped to overcome poverty and hunger. This also means that they get some control of the resources they are using, and certainly also of the benefits of any programme or project which introduces sustainable management of resources. To achieve the objectives of policies and projects for sustainable rural development, project design and implementation must reflect these realities. A failure to do so may not only make the project

ineffective, it may also increase the chance of further environmental degradation.

A wealth of detailed empirical studies show that women are important actors in most agricultural production systems, particularly in subsistence food production. It is estimated that in Africa and Asia they produce 60–80% of the food, in Latin America and the Caribbean 30–45% and in North Africa and the Middle East about 35%. Often they may also provide labour for cash-crops. (Blumberg, 1981; Dey, 1984).

In many developing countries national policies stimulate cash-crop production, whereas subsistence agriculture is largely neglected. Allocation of the most fertile lands to cash-crops along with erosion, salinization and other soil deterioration have made it increasingly difficult for women to produce enough food. In these circumstances they are forced to use more and more marginal and fragile soils for subsistence agriculture, which then accelerates environmental degradation (Dankelman and Davison, 1988).

A similar process takes place in the provision of household energy. Throughout the Third World charcoal and wood are the predominant household fuels. Women are generally responsible for household fuel collection, as part of their cooking tasks. Where there is a shortage of woodfuel supplies they have to switch from gathering mainly dead wood and twigs to cutting living trees and shrubs, which adds to the depletion of woodland and forest resources. Where wood supplies are very scarce, women must use less suitable biomass substitutes such as cattle dung, straw and crop residues. These cannot then be used as fertilizers, which seriously affect land fertility and reduce agricultural output (Cecelski, 1985, 1987; ILO, 1987).

In agroforestry or reforestation programs the importance of women's access to forest resources is often not taken into account. Women's land tenure security and rights and access to trees are key points to consider if they are to

participate in wise, sustainable use of those resources (Rocheleau, 1987).

The provision of water for the household is another basic responsibility of rural women. They decide where to collect water for various purposes and in various seasons, and they carry it home, often over great distances, taking several hours per day (Van Wijk-Sijbesma, 1985). In most rural areas, safe and sufficient drinking water is not readily available (WHO, 1988) and in recent years water scarcity through environmental damage has become a dominant problem in many places. Overcultivation of croplands, overgrazing of rangelands, deforestation and irrigation may all change fertile land into deserts; rivers, ponds, wells and springs dry up. The heavy use of groundwater in dry areas lowers the water table and makes water scarcity permanent (Shiva, 1988; Dankelman and Davidson, 1988). Water scarcity leads to health problems and it considerably increases women's workload. Where there is a shortage of water as well as fuel (e.g. Sahel and Sahel-bordering countries; some parts of India) women may have to spend so much time for the provision of these necessities that food production and preparation is seriously affected (Cecelski, 1985).

Another consequence of an increased workload for women in providing basic household needs is lack of time for income generating activities. For rural women most of these activities focus on marketing agricultural surplus, food processing and preparation for the market, and home production of household goods (e.g. pots, mats) or textiles. Particularly food processing and preparation (making beer and snacks, drying vegetables, smoking fish), and making pottery, require large quantities of fuel or water, sometimes both. Constraints in availability of these, combined with lack of time, may force women to give up their once-profitable occupations. In most cases they have no alternative possibilities to earn an income, a decline in family welfare and general poverty is the result (Cecelski, 1985). For men, migra-

tion to search for labour and an income elsewhere may offer literally a way out of worsening living conditions (ILO, 1987; Vaughan, 1987).

Although there is an increasing recognition of the need for women to earn their own income, much development planning and research still does not take into account the fact that men and women, husbands and wives, may have different needs and interests. Accordingly they may be differently motivated and do not perceive the same benefits in development projects (Cloud, 1984; Lewis, 1984). Particularly in Africa south of the Sahara, but also in other places, women often have a traditional responsibility for the provision of a large part of the food and other basic needs of the family. Men have responsibilities toward their own kingroup, and husbands and wives keep their incomes and their budgets separate. This means that improvement of a man's income will not automatically benefit his wife and children, and in difficult circumstances survival of the children may rest entirely in the hands of women (Dey, 1984; Rookhuizen, 1985). Thus, development efforts which address "the household" as an economic unit, with a shared budget and shared responsibilities, may seriously bypass reality.

In addition, there are many households headed by women alone. Estimates place the average percentage of female headed households in rural Africa at 33 (Lewis, 1984). They are usually the poorest and the most neglected section of the population: unmarried or divorced women with children, widows, wives of migrated men. Because of their poverty they may be forced to rely for survival even more heavily than others on overuse and unsound exploitation of natural resources.

Not only have men and women different tasks and separate economic responsibilities, they also have distinct domains of knowledge. Modernization of agriculture, with mechanization, extensive irrigation and the introduction of hybrid crop species has marginalized the

traditional knowledge and experience of women in food production. Development efforts to improve agricultural production usually do not take rural people's knowledge into account, and certainly not women's expertise in soil conditions, seeds, crop varieties and appropriate agricultural methods (Chambers, 1983; Dankelman and Davidson, 1988; Shiva, 1988). Equally overlooked is women's expertise in water and fuel supplies, for example, knowledge of trees and wood and water quality (Hoskins, 1979; Van Wijk-Sijbesma, 1985). Such omissions severely impede finding solutions for sustainable management of natural resources.

Participation in decision making by contributing ideas, experience and local knowledge is seldom seen as constituting a legitimate and helpful form of community involvement. Yet it is precisely this type of contribution which is most likely to bring about a sense of local identification with a policy or project. Any externally designed solution which is not based on people's knowledge about local conditions has a high risk of being inappropriate. And any solution for sustainable development which does not take men and women's different tasks and motivations and their different perceptions of benefits into account, will not attain its objective.

### **PARTICIPATION: ISSUES AND PROBLEMS**

Participation is one of the favourite terms in present-day development discourse. It refers to a democratic context, which may be the reason why it easily rouses feelings of sympathy and agreement. It belongs to a category of words and expressions that come and go with trends in development thinking, for example, take-off, coordination, backstopping, bottom-up planning, integrated rural development. Together they form the rapidly changing development jargon: words that sound pleasant and action-oriented (White, 1987). The problem with

these concepts however, is that they may cover a variety of contents. While the terminology suggests that we are all talking about the same things with the same good intentions, quite different views and interests may lie behind it. To mention a few examples: cutting trees in a Brazilian forest in order to graze cattle to fulfill the hamburger needs of North Americans, seems a perfect way to participate in the world economy. The same may be said about the 20 000 young female factory workers who spoil their eyes in the Singapore branches of the Silicon Valley electronic industry. One cannot deny that this is exactly what the word participation and the expression human resources development mean. Still, most of us would probably prefer to see participation in a different sense, implying the possibility for people to control their own lives, at least to some degree. As long as this has not been stated explicitly, however, the concept of participation does not necessarily carry this meaning. What we want to emphasize is that participation should be seen in the context of existing power structures. Its quality depends entirely on the division of power in a particular society.

A second observation is that participation is often presented as a new and salutary device, which would imply that no such thing existed before. People have been "participating in development" ever since the beginning of human society. Only if development is equated to entering the world market or mastering new forms of technology, it may be said that many rural people do not participate fully. Promoting participation usually means introducing changes in the habits of people because they do too little, or act unwisely. Now it may be quite true that they do wrong in terms of health care, hygiene or food habits; it is almost certain that they are going to do wrong to their physical and cultural environment if they try to enter the world market. Many of them have deeply regretted their participation in large-scale cash cropping once their dependence on the world market prices and the degradation of the soil

resulted in hunger and death. Whether development is "a good thing" or not, depends in the first place on the overall direction of the processes in which people are encouraged to participate. Does the process serve their own interests or someone else's? Does it aim at their survival, or at paying off national debts to private banks? What does it do to the natural environment?

A third observation is closely connected to the first one about power. Conflicting interests may exist between and within different levels of society on an international, national and local scale. It is well known by now, for example, that measures taken to solve a country's debt problems often run counter to the interests of local people, as prices rise while services are reduced. Here, we will focus mainly on the lowest level: that of people living together in one household. It is generally assumed that households are harmonious units, whose members share a set of common interests. It is quite common to write or read about households wanting to maximize production, reacting to price incentives etc. This is a mystification. Members of a household may share some common interests, but in many respects they will differ according to their various positions within the unit. Young and old members, daughters-in-law and mothers, members who control resources and those who work as unpaid assistants all take a different position in the decision-making process.

The most important dividing line is the one that separates the sexes by the ascription of gender roles to each of them. (Gender is the term presently used for the cultural construction of masculinity and femininity. It denotes a set of learned behaviour patterns and cultural ideas about the nature of women and men (see for instance: Oakley, 1972; Caplan, 1987).) The process of commercialization that comes with development, tends to polarize the positions of men and women, as men are taken up in market-oriented activities while women

are left to perform traditional manual, mostly unpaid, labour.

Since we started studying women's work in a more systematic way in the 1970s, the facts about the division of tasks and responsibilities at household level as described in the former section, gradually came to light.

The conclusion to be drawn from these studies, in this context, is that participation is a gender issue. Whoever is talking about people's participation without referring to gender is missing the point. If no account is taken of the fact that women and men each have their own traditional tasks and responsibilities, and that both categories need to have their own access to resources, the gap between them will widen, to the detriment of the family's food and health conditions.

Unfortunately, awareness of these facts is a complicating factor in development activities because gender relations differ from one society, class or caste to another. This means that participation in development will have to take different forms according to cultural conditioned gender roles. Development experts cannot just travel around with suitcases full of useful technical knowledge, giving advice in different places. They will have to start listening and wait for the local participants, women and men, to define their own ways of participation.

In the beginning of 1989, women from 20 African countries came together in a workshop on sustainable development in Harare. Ms. Shimwaayi Muntemba, a Zambian sociologist and executive director of the Environment Liaison Centre International, a worldwide coalition of non-governmental organizations (NGO), stressed that women should be given the right to control resources. Building upon local knowledge, she said, is essential for sound environmental policies. One of the most persistent recommendations of the conference was to build upon local women's expertise and experience and to provide women with locally oriented technology.

## PARTICIPATION IN PRACTICE

The following examples may serve to illustrate some of the issues raised above and to connect these to the ecology of wetlands. The material is taken from a rural development project in South Mauritania which is supported by The Netherlands. Since the outburst of ethnic conflicts in the area in 1988, the project is stagnant. The territories of Mauritania and Senegal are separated by the Senegal River, whose main sources lie in Mali. Once a year, the river overflows its banks and provides natural irrigation to the forelands, that cover an area of several kilometres on both sides. This happens after the rainy season in July and August. The inhabitants have adjusted their agricultural activities to the environment for a long time. They developed an ingenious system, in which a number of different agricultural practices are (or rather were) applied in different seasons and locations. Until recently, their most important activity was subsistence cultivation of sorghum and beans on the flooded plains, the so-called walo. As soon as the river retreats within its banks, people start sowing. Harvest time is in March, before the time of the great drought.

In the hills and plains at some distance from the river, smaller fields are cultivated with a series of different crops. This type of agriculture is more risky, as it depends on rainfall. If all goes well, it contributes a variety of minerals and vitamins to the diet. The period of sowing and harvesting almost entirely precedes that of walo cultivation. Both kinds of agriculture are practised by women as well as men, with some of the activities being ascribed to either sex, while others are carried out jointly.

A third kind of agriculture is falo: growing vegetables on the steep riverbanks at low water. This is predominantly the work of women, who carry the water up from the river in buckets. At the beginning of this century, a French technical engineer had ambitious plans to bridle the

tremendous mass of water streaming down the Senegal River. Since then, several technicians have elaborated this idea in many forms. In the 1980s, their dreams came true: large-scale water works were built with international support, among others from the World Bank. From the Malinese border to the ocean, the stream of the Senegal River is regulated.

At an international level, several different interests play a role in this enterprise. A priority for Senegal is a supply of electricity for its growing capital, Dakar. Mauritania's main interest at that time was to become self-supporting in rice, for which it wanted to develop a vast area of artificially irrigated fields. Other groups depend on the river for such economic activities as transport and fisheries. The prime interest of local farm families is of course their food subsistence and in the second place a surplus for sale. However, they are the least powerful players in the game, and so their voices are hardly ever heard. In spite of earlier promises, the water management of the river ended the seasonal floods of the Senegal River. The intricate system, by which risks in food production were spread over three types of agriculture and a variety of crops in different seasons, has gradually been replaced by a system of monocropping on mechanically irrigated fields (Smale, 1980). Male heads of households are taken up in cooperatives as managers of the farms. Women help cultivating the family fields, however without any access to information, credit or material support. This is how the project started some 10 years ago. After some time, women began to organize themselves in local groups and to press for action on their behalf, after which gradually some additional activities were taken up. Meanwhile, the variety of crops grown by a farm family has decreased, while rice growing turns out to be a risky business, for the state, as production costs in Mauritania are far above world market prices, and for the farmers, as their income is often below the level of investment.

One of the results is that women desperately

try to get access to at least some irrigated fields, or to other kinds of income generating activities. In some areas, men cut the last bits of tropical forest to sell it as charcoal to the cities, in order to make ends meet.

Still, the project explicitly aims at improving the lives of small farmers and acknowledges the need to protect natural resources. The total power structure in which it is embedded, however, is such that none of these two ideals in fact stands a fair chance against national governments, foreign agencies or the pressure of an international market.

As regards participation in decision making, this was practised within the limits of the project, and then mainly for male farmers. The higher levels of national and international water management were of course completely out of reach for anyone involved in the project, let alone for the farmers themselves. Clearly, if the levels of decision making are so far removed one from another, participation in the sense of helping to give shape to one's own society, will always be a problem, except perhaps in a perfectly functioning, purely democratic system.

Organization and empowerment of the poorer sections of society, whose interests are often more closely connected to those of the natural environment than the interests of an urban elite, is not a panacea. Still, it may be quite effective, as has been demonstrated in many joint actions by women defending their natural resources. Dankelman and Davidson (1988) give a number of impressive cases, of which we will just briefly mention one, as a counterweight to the former, mainly negative one.

The organization Friends of the Earth in Brazil is implementing a combined environment and development project, coordinated by women, in reaction to the destructive effects of Green Revolution policy on both the land and the social structure of peasant society in south Brazil. The project involves the management of a farm and training centre, with a pro-

gramme for peasants, extension workers and students from agronomy and veterinary faculties. In contrast to the monoculture characteristic of modern agricultural techniques, the farm of the project at Vacaria is managed to include "cropping, gardening, fruit growing, animal husbandry and agroforestry... The approach aims to protect the environment, keep the energy balance, and to control erosion without using chemical fertilizers and pesticides and by integrating a diversity of crops and animal production. Most of the inputs are locally or regionally produced so that food production is freed from international arrangements and trends that create dependency" (Dankelman and Davidson, 1988). In spite of initial criticism, both against the introduction of a new agricultural concept, and against the change in gender-roles, with two young women as leaders, the project has become very successful. Sustainable agriculture techniques are winning ground in the surrounding area (Dankelman and Davidson, 1988).

## RESEARCH ISSUES

The importance of women's contribution to food production and the provision of other basic needs is now routinely mentioned in development policy and planning, but often without a realistic assessment of women's actual work, their needs, motivations and limitations as participants in their own right. This information is crucial if women are to be involved in a meaningful way.

Also, very little systematic research is presently available about differences in women's and men's access to resources and their different use of natural resources in various ecosystems. To organize the rather complex research needs for projects like the one described in an earlier section of this article, it is advisable to have a checklist for data on women's work and living conditions, that can be used in different population groups. A short checklist (Table 1) may state the most important indicators (see

TABLE I

Checklist for data on women's work and living conditions

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- 1 Family and kinship structure (only general data are necessary); composition of households; migration patterns
  - 2 Property rights and rights of usufruct (differentiated by sex) of:
    - land
    - cattle (milk)
    - fish, fishing gear
    - trees, wood
    - water
  - 3 Division of labour (differentiated by sex and age):
    - subsistence tasks, provision of basic needs
    - labour for the market, self-employment
    - wage-labour
    - unpaid services
 It should be noted that an accurate picture of the division of labour requires a time-budget study
  - 4 Income and expenditure; decisions on income, expenditure and property (differentiated by sex and age)
  - 5 Access to (differentiated by sex):
    - education and information
    - health care
    - credit and saving systems
    - mobility, markets
  - 6 Participation in community decision making structures; organization (differentiated by sex)
  - 7 Knowledge, experience (differentiated by sex), concerning:
    - the environment, including soils, trees, wood, plants, animals, wildlife, water, fish
    - agriculture, livestock
    - food and its nutritional value, food preparation
    - health care, medicines, treatments
    - other special skills
- 

also Boesveld and Korthof, 1988). Information on these points is crucial in planning and implementing any rural development programme. It is not uncommon to find projects where essential data is lacking on almost all these issues.

Additional important research questions may concern specific issues relevant in a particular context. In the Senegal River valley project described above, as in many other rural development projects, especially in Africa, people with very different ethnic and cultural backgrounds live in the same area. Beside the original inhabitants with their age-old tradition of agriculture, nomads have recently set-

tled in the area because they lost most of their cattle during the years of the great drought. In their traditional production system, women played an important part in tending cattle and managing the dairy production. They sold milk and other products at local markets. In the project, little attention was given to women's traditional roles in production, while the men were taken as members of an agricultural co-operation. Projects covering a wide area may meet with groups of people who make their living in different ways, for instance by gathering natural products, fishing or herding cattle or goats. As these occupations are usually defined in terms of a male gender (fishermen, herds-men etc.) the contribution of women tends to be overlooked. From these considerations we may derive the following topics for research that will be relevant in many cases.

Ethnic and cultural differences should be taken into consideration. It is important to know people's different traditional production systems and how these fit into the social structure of their community. Great differences may exist in the traditional division of tasks and responsibilities between women and men. In some cases, as that of the nomads just mentioned, women were much more economically independent than they will be in the average rural development project, unless appropriate opportunities are created for them to make use of the skills they have.

Differences in the use and management of natural resources by women of the different groups who live in the area concerned should be considered. Wetlands in particular provide a variety of possibilities for people to make a living. Each group uses partly different and partly the same natural resources. When some of these become scarce (e.g. drinking water, fuelwood, grazing land, pastures) how do people of the different groups work together to promote wise use or compete to get for themselves the most and the best?

Communication with existing formal and informal women's organizations, at local and



national levels, is needed. Organizations may support women's participation, strengthen decision making and promote women's control over resources.

### WOMEN'S MOVEMENTS AND ORGANIZATIONS

"Wise use of the environment" has to rely heavily on local initiatives and knowledge. One of the main problems in this connection is that local knowledge is often circulating in informal ways and may easily be overruled by the power of western technology. The famous Hobbesian adage that knowledge is power is only one aspect of the picture. The other is that knowledge must be supported by the power structure of a society in order to be transmitted and to influence people's behaviour.

Over the last 20 years or so the importance of local non-governmental organizations has increased substantially in many countries. In the struggle against further destruction of the natural environment, they have played a crucial role. Women were prominent in such movements and organizations, even where cultural barriers had to be overcome for them to enter the public stage. In view of their role as the main food providers for their families and the direct interest they subsequently have in protecting their natural resources, this is not surprising.

One of the first and most famous examples of women uniting for the defence of their means of subsistence is the Chipko Movement in the North of India. In 1974, women in the Chamoli District, Uttar Pradesh were confronted with the prospect of 2500 trees being destroyed by commercial enterprise. When the contractors arrived, they followed the example set by a woman called Amrita Devi, who was the leader of a movement to protect sacred trees in Rajasthan 300 years ago. They went into the forest, joined hands and encircled the trees, protecting them with their own lives. Thereupon, the contractors withdrew and the

forest was saved (Shiva, 1988; Dankelman and Davidson, 1988).

The increased importance of local NGO is evidence of the growing self-confidence and capacity for organization of groups of people (women and men) who want to participate in shaping the society in which they live. In more and more developing countries the value of self-help is being recognized and the professionalism of the NGO is on the increase (Verhagen, 1987).

It is now widely recognized, also by donor organizations, that their counterparts in the Third World should be able to shape and control their own development. Certainly, NGO in the donor countries have a greater potential to communicate with local grass roots organizations than is possible in bilateral or multilateral aid relations. Besides, they have closer contacts with the grass roots in their own countries and some of them may have shown their commitment to the struggle for better use of natural resources in the north, which enhances the credibility of their interventions.

One caution should be made in the context of this article: as we hope to have demonstrated, gender issues are very much at stake in rural development. Not only because women are the most directly affected by degradation of the natural environment, but also in view of their involvement in managing natural resources, according to traditional patterns of task division and separate responsibilities.

Western based NGO until now have shown remarkably little affinity with gender issues. In general, they have developed little experience in identifying the different needs and interests of women and men in their target groups or counterpart organizations. Active participation of the people concerned (men and women) is a precondition for sustainable development and, even more important, for resisting further attacks on natural resources. Recently, NGO originating from local women's initiatives seem to have been the most successful in this respect. That is the reason

why these groups will be indispensable partners in future efforts to shape conditions for wise use of the environment.

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