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Discussion Paper 13

CONSTRAINTS TO ENVIRONMENTAL REHABILITATION THROUGH PEOPLE'S PARTICIPATION IN THE NORTHERN ETHIOPIAN HIGHLANDS

by
Michael Ståhl

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Preface

The following paper reports on the environmental problems facing the people of the northern Ethiopian highlands, ongoing attempts to arrest environmental degradation in the area, and the factors which influence the outcome of such attempts. The paper was prepared as part of the UNRISD research programme on **Sustainable Development through People's Participation in Resource Management**, which explores the dynamics of local-level initiatives concerned with environmental degradation, examines and analyses traditionally sustainable resource management practices, and investigates the factors which facilitate or constrain community participation in externally initiated resource management projects and programmes. The programme is being co-ordinated within UNRISD by Jessica Vivian.

Michael Ståhl, the author of this paper, has been involved for many years in development research in Africa. He has been a lecturer of political science in Ethiopia, a Senior Research Fellow with BRALUP in Tanzania, a Senior Programme Officer with SIDA, and the Director of the Scandinavian Institute of African Studies. He is presently a Research Officer with the Swedish Agency for Research Cooperation with Developing Countries (SAREC).

The paper opens with a discussion of the context of environmental degradation in the Ethiopian highlands, and of the government resource conservation programmes. Attempts to arrest soil erosion and regenerate vegetation in this region are supported by the World Food Programme and other international agencies, and are organized as food-for-work projects. The author demonstrates that the peasants are well aware, not only that soil erosion is having deleterious effects on their crop yields, but also that their own agricultural practices are hastening soil erosion. Nevertheless, the peasants are unwilling to undertake soil conservation measures unless they are supported by food-for-work programmes.

Local people's participation is crucial for the success of soil conservation activities in rural areas. The reluctance of the farmers of the Ethiopian highlands to participate in soil conservation initiatives unless they are externally supported, therefore, means that efforts to rehabilitate the environment will be successful only in the limited areas which can be reached by food-for-work programmes. In his analysis of the factors which underlie this position taken by the peasants, the author emphasizes structural factors. In spite of the celebrated land reform in Ethiopia, peasants do not own the land they till, and government villagization and resettlement programmes have left the people with little certainty even over their continued land tenure.

The author gives several examples of the coercive and authoritarian nature of government policies in the rural areas of Ethiopia. He argues that the attitude of the peasants towards soil conservation, which some have interpreted as "careless", is the result of their "alienation from the whole official development strategy." The state in Ethiopia has in recent years appropriated resources from rural areas, not in order to improve conditions there, but rather for "consolidating the bureaucracy and waging war on political opponents". Peasants are therefore understandably reluctant to engage in conservation efforts which have no short-term benefits, because such efforts entail immediate costs, and the likelihood of their collecting the long-term benefits is small.

The paper closes by outlining a possible way towards sustainability in the Ethiopian highlands. The author demonstrates that there are real possibilities for environmental rehabilitation in the area, based on widespread people's participation. To bring about such an outcome, however, the government will have to orchestrate a political formula which will make possible both the co-operation of the peasants and increased support from external sources.

Ongoing UNRISD work on the theme of sustainable development and people's participation will investigate further some of the issues raised by this paper. As one of the programme's areas of focus, the structural factors which constrain the full participation of people in resource management and conservation projects will be examined. Particular emphasis will be placed on the implications of the UNRISD studies for national and international development policy.

Dharam Ghai
Director

June 1990

Table of Contents

	Page
Introduction	1
Environmental Degradation in Ethiopia	1
The Wider Context of Goverment Policy	7
Popular Participation, the State and Environmental Rehabilitation	9
Towards Sustainability?	13
Concluding Remarks	17
Bibliography	19

Introduction

This paper, which discusses environmental degradation in the northern highlands of Ethiopia, is a contribution to UNRISD's programme on people's participation in sustainable resource management. Many forms of "participation" are relevant to the topic of environmental sustainability, but this paper focuses on one form in particular: a programme in which local people are involved in massive campaigns to dig trenches, move stones and plant trees in exchange for food. The emphasis of the paper is on examining the policies and politics which hamper a more responsible participation by the people of the Ethiopian highlands in the rehabilitation of their farmlands, pastures and hillsides.

The first section of the paper provides a general description of the character of environmental degradation in the highlands, as well as of the policies designed to combat it. Examples are drawn from Wollo region, which has become notorious for its repeated crop failures and famines. The paper then discusses the potential for environmental rehabilitation, with a particular concentration on government policies and people's responses to them. The analysis emphasizes these human and institutional factors because degradation and rehabilitation are here considered to be consequences of decision-making by land users who, directly or indirectly, act in response to government policy.[1]

The presentation refers to the period 1985-1988. Since that time, vast parts of the northern highlands south of Tigray have been overrun by opposition movements and government programmes have ground to a halt.

1. This conceptualization draws on the theoretical frameworks outlined in Blaikie and Brookfield (1987) and in Dixon, James and Sherman (1990).

Environmental Degradation in Ethiopia

Trends in Natural Resources Use

The thick volcanic soils in the Ethiopian highlands[2] have high inherent fertility and once supported large forests with diversified flora and fauna (Westphal, 1975). The cool climate and ample rainfall attracted early human settlement, and mixed agriculture and stock keeping emerged three thousand years ago. The use of draft animals and ploughs (the ard) was introduced and stable agricultural communities developed. The historical Abyssinian kingdom flourished in these mountains, where peasant production could support a royal bureaucracy and a feudal military aristocracy. Environmental degradation occurred in the vicinity of settlements, but at that time an ample supply of virgin land was available to support the expansion of the growing communities.

2. Highlands are defined as being above 1,500 metres.

Population growth in the twentieth century, enhanced by the partial control of epidemics and by the relatively peaceful period of Haile Selassie's reign after the Second World War, has given a new dimension to the pressure on land. The population growth rate is now estimated to be 2.9 per cent per annum (Central Statistical Office, 1985), and the

scope for further expansion of cropland is negligible in many parts of the highlands: the land frontier is closed. The impacts of the increased land pressure have been severe. Long fallow periods can no longer be maintained, and arable land comes under continuous cultivation. Soil fertilization through organic manuring has become less frequent because the scarcity of firewood forces people to use cow-dung as household fuel. In the northern parts of the highlands the landscape is generally barren. After centuries of exploitation the forests have been cleared.

A detailed study of the land degradation process in Ethiopia which was carried out in the mid-1980s indicated that erosion is heaviest on sloping agricultural land (Ministry of Agriculture and FAO, 1984). Parts of Eritrea and Tigray have already been badly eroded, while the densely populated and intensively cultivated regions of Gondar, Wollo and northern Shoa are now in the frontline of environmental degradation. It is estimated that soil erosion in these areas reduces crop yields by 1 per cent per annum, while biological degradation (a decline in organic matter) may cause a further 1 per cent reduction (Ministry of Agriculture and FAO, 1984). Eroded land has progressively shifted to less productive uses as crop yields decrease and the nutritional composition of grasses deteriorate, providing poor grazing for livestock. Eventually, the land produces neither crops nor feed for cattle.

The process of soil erosion in the Ethiopian highlands is exacerbated by both natural factors and agricultural practices. Highly erosive rainstorms hit a landscape that has been stripped bare, with little mitigating cover to protect the soil from the bombardment of the raindrops. Land husbandry practices contribute to the problem. The major crops grown (barley, wheat, teff and sorghum) have small seeds and require a seedbed with fine tilth, which increases the vulnerability of the soil. The consequence is that a high proportion of the rain water runs off sloping lands either as sheet wash or as torrents, which form deep gullies.

Water erosion is destructive for agriculture in two ways.[3] One is that the uppermost layer of the soil, which is relatively rich in humus, is carried away. The nutrient supply for crops is thus reduced and the soil structure deteriorates. The other negative aspect is that a large part of the water itself runs downstream, ending up in rivers which so far have been underutilized for agriculture in Ethiopia. The availability of water for plant growth is thus reduced. During times when the landscape was generously covered with trees, bushes and grasses, a much higher proportion of the rain water percolated into the soil and was available in the root zone. High yields in agriculture are, therefore, more dependent today than ever before on a rainfall pattern which guarantees an even distribution of rain over the critical stages of the crop growth cycle. The tendency in the 1980s has been the opposite, however: rainfall has become more erratically distributed, with the result that, even in years where the total annual amount of rain is theoretically sufficient for successful crop growth, poor rainfall distributions often lead to crop failures.

3. For an exhaustive treaty on the subject, see Russell (1973).

Various scenarios for natural resource use in the highlands have been developed to predict the future situation in the country in the absence of major changes in agricultural practices, in the rate of population growth or in the rates of resource degradation. One scenario suggests that between 1985 and 2010 soil erosion will cause an increase in the land incapable of supporting agriculture from 2 million hectares to 10 million hectares - an area which covers some 17 per cent of the highlands. Another study suggests that by the same date agricultural production in almost three quarters of the *awrajas* (administrative districts) will not be enough to provide subsistence for their inhabitants (Ministry of Agriculture and FAO, 1984; FAO/UNDP, 1984).

A major survey of peasant attitudes to degradation and conservation work has shown that people in the affected areas are well aware of the links between environmental degradation and decreasing agricultural production (Yeraswork Admassie, Mulugeta Abebe, Markos Ezra and Gay, 1983). In a sample of 2,000 heads of households in 20 peasant associations, the most common factors mentioned as causing soil degradation and erosion were overcultivation, lack of organic fertilizer and the inability to rotate crops. Peasants considered their most serious problem to be the land shortage, which forces them to cultivate their land every year. At the same time, peasants complained about lack of work oxen. A majority of the peasants have only one ox or none, which means that they have to rent oxen from neighbours, and agricultural work proceeds slowly.

When asked why they did not do more to stop soil erosion, the peasants' typical response was that they were too poor and weak, and that they lacked the necessary tools and seeds to do something substantial to arrest erosion. Moreover, the low official market prices paid for the staple crops was mentioned as a disincentive to investing in long-term land improvement. On the other hand, the peasants did not feel that the situation was hopeless. With good leadership in the peasant associations together with technical advice from agricultural experts and assistance, including the provision of improved tools and supplementary food in critical months, they thought it would be possible to reverse the trend towards degradation.

Government Policy to Combat Degradation

Government programmes to combat degradation include the building of terraces, the closure of hillsides, the planting of trees and the construction of irrigation schemes, as well as the relocation of people on a local level (villagization) and on a regional or national level (resettlement).

Several organizations co-operate in the implementation of these programmes. The World Food Programme (WFP) and the European Economic Community (EEC) provide grain and edible oil, while other donors provide hand tools and technical equipment. The peasants, organized in huge working teams, provide the physical labour (such as digging, pitting, and planting), while the Ministry of Agriculture (MOA)

organizes the work and provides technical supervision as well as training to the peasants. The operations are run as food-for-work programmes.

Overview of the Activities

Terraces. Terracing is the recommended treatment for sloping agricultural land, where erosion is most damaging. Stone and soil bunds, which are gradually developed into bench terraces, are constructed, along with grassed waterways and check-dams to lead away surplus rain water. These structures are instrumental in reducing the rate of soil erosion, and in improving the water retention capacity of the soil. In newly terraced areas, springs which have been dried up for years gradually return.

Although few systematic studies on the relation between physical structures and agricultural productivity have been undertaken, the information available indicates that soil bunding has a positive impact on crop yields. The peasants themselves believe, moreover, that on-farm soil conservation activities help stabilize production, mainly through improving the retention of moisture for crops (Yeraswork Admassie, 1988).

Hillside Closures. The closure of degraded hillsides is also part of the conservation measures undertaken in the Ethiopian highlands. Under this programme, the MOA and the local peasant association agree to close certain hillsides from further grazing, cultivation and fuelwood collecting (although cut-and-carry operations to harvest grass are often allowed). Peasant guards enforce the closing. In some cases, trees and grasses are planted, but often the closure is left for natural recolonization. The result is generally impressive. Vegetation returns within a few years and erosion is significantly reduced.

Tree Planting. Hundreds of large tree nurseries are run by the government, and thousands of small nurseries are operated by peasant associations in the northern highlands. Together these nursuries have the capacity to raise more than a 100 million seedlings annually. *Eucalyptus* are the most common species planted, followed by *cupressus* and *acacia*. Some of the nurseries also produce grass seeds for terrace stabilization and pasture improvement. Trees are planted both on steep slopes, for the purpose of soil stabilization, and in conventional woodlots for fuelwood production.

Irrigation. During the 1984-1985 famine, the government launched a campaign for the construction of large dams for irrigation purposes, as well as small river diversions for micro-irrigation. The MOA is responsible for small-scale irrigation schemes (below 300 hectares and in actual fact often only around 10 hectares). These schemes are cheap and can be constructed and managed by peasant associations. The purpose of micro-irrigation is not to create an alternative to rainfed agriculture, but rather to provide facilities for supplementary irrigation. The water sources used are perennial streams and springs. During the 1984 drought, the interest for such micro-irrigation schemes increased, and they

mushroomed everywhere. Initially all the schemes were used for cultivation of cereal food crops, but gradually a diversification towards the production of vegetables for sale in local markets has taken place.

Organization of Activities

In the early 1980s, when environmental rehabilitation programmes were first supported by the World Food Programme on a large scale, the emphasis was on stone and earth structures. Since then, the emphasis has gradually shifted to include vegetative measures. Trials are currently being conducted to integrate crop and livestock production with conservation.

Terracing and tree planting are organized in large-scale food-for-work campaigns. Food-for-work is the motivating force in people's participation as workers. With support from WFP, bilateral donors and NGOs, the MOA runs food-for-work activities in nine regions, involving some 800,000 persons and food subsidies of more than 100,000 metric tons per annum. It is the second biggest programme of its kind in the world. In the 1980s, with people mobilized for the work through the peasant associations, more than 1 million kilometres of soil and stone bunds were constructed on agricultural land, close to half a million kilometres of hillside terraces were built, 80,000 hectares of hillsides closed off and 300,000 hectares afforested.

Participating peasants are entitled to a daily ration of wheat (2-3 kilograms) and edible oil (120 grams). In theory the food should be delivered each month. The peasant associations and the MOA are in charge of distribution. Logistical problems with deliveries have been frequent, however, with deliveries sometimes delayed up to six months.

Although food-for-work programmes are sometimes criticized for having a detrimental effect on local food production, in the Ethiopian highlands no such negative impact has been observed. The conservation work takes place during agricultural slack seasons, with the exception of the planting of tree seedlings, which must take place at the onset of rains. Due to the serious food shortages during the 1980s, food deliveries under the food-for-work programme have been a welcome supplement to the locally produced food (Office of the National Committee for Central Planning, 1986; Yeraswork Admassie, Soloman Gebre and Holt, 1985).

Technical Problems

The numerous problems affecting rehabilitation activities have been described and analysed in depth by Yeraswork Admassie (1988) and others.[4] A short summary is given here.

Terracing encroaches on the area available for cultivation and provides favourite hiding places for rodents. Terracing may also bring sub-soil to the surface and thereby reduce crop yields.

4. This report provides a thorough analysis of the impact of on-farm conservation structures, tree planting and hillside closures as well as a discussion of factors facilitating and hampering the social sustainability of such rehabilitation measures.

Most closures lack well-articulated management plans. In the closed hillsides, species with low palatability and nutritional values tend to become dominant, while fodder grasses are further reduced if the hillsides are planted with trees. In addition, the transfer of grazing pressure from the closed areas to the nearby hillsides means that the latter suffer doubly (Fruhling, 1988; Hultin, 1988).

The survival rate of tree seedlings is reportedly around 40 per cent. The reasons for this low success rate are that planted species and provenances are not always suitable for local ecological conditions (such as altitude, temperature and soil depth), and that labour for the necessary forest management (thinning, for instance) is insufficient once the plantations have been established. The land assigned to afforestation projects, moreover, is often too marginal to support mature trees.

In 1987, the MOA commissioned an evaluation of the community forestry programme in Ethiopia. Among the socio-economic reasons discovered for the rather weak performance of the programme was that peasants were reluctant to establish woodlots because of their uncertainty concerning the ownership and use rights of these trees and woodlots (Markos Ezra and Kassahun Berhanu, 1988). The incentive structure will be further discussed below.

Soil bunds on agricultural land, on the other hand, are generally perceived as having positive production benefits. One study reports an increment in production of some 60 per cent on farms where soil bunds were constructed, as compared with nearby farms without bunds (Yohannes Gebre Michael, 1988).[5]

5. The thesis is quoted in Yeraswork Admassie (1988).

Lack of Sustainability

Despite all the efforts enumerated above, the major environmental trend in this area continues to be degradation. The conservation programmes affect only a small proportion of the highlands. Away from the major roads, where the great majority of highlanders live, few conservation activities are to be seen. The scope and financing of the programmes are far below needs. However, more important for our discussion is the observation that the conservation programmes in their present form appear to be unsustainable without food-for-work. This is the case in spite of the fact, demonstrated by the above-mentioned survey of peasant attitudes, that people realize the reasons for degradation and are willing to learn and implement improved land reclamation techniques if they receive external help.

It is argued here that a major factor in the lack of independent peasant support for Ethiopia's conservation programmes is the coercive nature of government policies, which have removed people's sense of responsibility for participation in environmental rehabilitation. Before discussing the socio-economic sustainability of the rehabilitation programme, it is necessary to briefly comment on the agricultural policy in a wider context.

The Wider Context of Government Policy

In the eroded highlands, in addition to the rehabilitation activities reviewed above, government policy has emphasized resettlement. Resettlement would, in the official thinking, serve the dual purpose of reducing land pressure in the highlands and mobilizing labour to exploit the vast lowland areas in the south and south-west, which traditionally have been sparsely populated.

When drought struck in 1984, the authorities carried out a large-scale resettlement campaign. More than half a million people were resettled in 1984-1986, but the campaign has thereafter lost momentum. This is partly due to a lack of resources to administer the resettlement efforts, and partly to the realization among the policy makers that resettlement creates many problems, while it has not yet proven to solve any. The potential and the constraints, including the health hazards, of the lowlands are yet to be systematically explored.

The situation in the eroded northern highlands is furthermore affected by the general development policy of the government.[6] According to the Constitution of the People's Democratic Revolutionary Republic of Ethiopia, the Workers' Party of Ethiopia (WPE) is the leading force of the state and of the entire society. The WPE systematically promotes a transition to socialism in the countryside. The major ingredients of its programme include state control of the grain trade, the establishment of collective production units (state farms, resettlements and - in the traditional peasant sector - producers' co-operatives) and villagization.[7]

The Agricultural Marketing Corporation (AMC) is the official procurement agency for grains. It establishes prices and requires all peasant households to deliver a grain quota. The producers' co-operatives are agricultural production collectives, in which individual peasant households are encouraged to pool their land, labour and working tools in order to cultivate collectively. Agricultural extension services are wholly concentrated on assistance to these co-operatives. The traditional dispersed settlement pattern is changed by moving all the households which belong to a peasant association into planned, nucleated villages.

The administrative achievements of the state have been substantial in grain marketing, where private traders have been forced either to close business or to function as agents for the AMC. Villagization has also had a substantial impact on rural life, with more than 15 million people now living in planned villages. The resettlement schemes, although now largely abandoned, were important for a number of years. Collectivization, however, is a disappointment to the officials. Despite continuous agitation, less than 5 per cent of peasant households have joined producers' co-operatives.

6. An analysis of the agricultural policy is found in Ståhl (1989).

7. In 1989 the government announced changes in the agricultural policy including some liberalization of grain trade and increases in producer prices.

The WPE and the state authorities show considerable arrogance in their use of power. They can demand that peasants move into a village within the local peasant association, resettle their households to a foreign environment, or join a producers' co-operative. This arrogance is no doubt responsible for much of the peasants' resistance to government plans. The crux of the matter, however, is that this "transition to socialism" programme has not proven to be an economic success and offers few opportunities for raising productivity. Surveys indicate that crop yields on co-operative farms are equivalent to or less than those of traditional peasant farms, and that the settlements require continuous subsidies to keep their farms going and to feed the settlers. The AMC's procurement of grain is inefficient and fraught with logistical problems. Villagization has diverted labour and resources - not least trees for new house construction - from production to relocation of homes.

One reason behind the economic failure of these state supported activities is that their focus has been on ideology and organization. Technical and agronomic innovations have received little attention, and no incentives for increased production have been systematically deliberated. A common sight in the agricultural landscape is soil bunds that have been broken down, either by stray livestock or heavy rains, and lie unrepaired. The physical structures need annual maintenance and repair, otherwise they disintegrate, and the transformation of bunds into bench terraces requires continuous build-up and maintenance.

A survey of peasant attitudes to conservation in Wollo clearly demonstrated that, even though peasants appreciate the short-term benefits to increased production from soil bunds, and the potential long-term benefits of trees and revegetated hillsides, they are not prepared to continue conservation work unless supported by food-for-work (Yeraswork Admassie, 1988). Among the reasons mentioned for this attitude in the report on the survey were that peasants had come to expect food payment for maintenance work, and that some conservation measures can decrease agricultural production - terraces, for instance, are sometimes thought to "steal land".

The peasants' "careless" attitude to conservation structures can be interpreted as an alienation from the whole official development strategy. Government policy is designed and implemented in the conventional top-down fashion, with little room for adaption to individual and local conditions. Party and administration officials visit peasant associations and issue instructions and regulations. The often arrogant ways of party and government officials are bound to create frustration, because people are seldom consulted in a genuine way. They are told what to do and opposition is considered a counter-revolutionary attitude. Consequently, peasants participate in environmental rehabilitation only when food-for-work is arranged. Their relation to the rehabilitation programme is thus that of paid workers (by the participating peasants the programme is called "work-for-food") rather than responsible landowners. This clearly shows that the massive popular participa-

tion in the official rehabilitation programmes has nothing to do with the empowerment of the people.

Peasants' insecurity also contributes to the land rehabilitation programme's lack of sustainability. The peasants have little room for manoeuvre because, despite the celebrated land reform in Ethiopia, peasants do not own the land they till. The reform abolished absentee landlordism and feudal obligations, and gave use rights to tenants and to former owners who were prepared to cultivate the land with their own labour. But ownership is vested in the state, and the state has shown that it does not respect peasants' use rights when designing grand schemes such as state farms, forest plantations and irrigation projects.

In addition, within the specific context of the rehabilitation policy, the official approach is prescriptive and commandist rather than consultative and supportive of local initiatives. The emphasis is on the number of seedlings planted, rather than on the survival, management and utilization of planted trees; the concern is with how many hectares of hillsides have been closed off, rather than on how to manipulate revegetation. The effect of this commandist approach, combined with the WFP's policy of paying for maintenance work, has been to inculcate attitudes of dependence among the peasant communities when it comes to rehabilitation activities.

One can argue, taking a long-term view, that the main feature of the structural changes in the Ethiopian countryside since the revolution has been to substitute the state for feudal lords as the supreme appropriator of peasant produce and labour. From the point of view of the state, this is a logical step in its attempts at centralization and state-building. From the point of view of the peasants, this is something to be avoided, since the state does not use the appropriated resources for improvement of the conditions in the rural areas but rather for consolidating the bureaucracy and waging war on political opponents.

Popular Participation, the State and Environmental Rehabilitation

Popular Participation - Some Remarks

Popular participation is a recurrent theme in discussions on rural development. It emerged as a counter-strategy to efforts to modernize the countryside under large-scale, commercial, mechanized enterprises, which often pushed away the local population. At the most general level the "participatory approach" calls for rural people to be active participants in efforts to develop their communities in beneficial ways (Yeraswork Admassie, 1990).

The literature on popular participation is voluminous and has produced a multitude of classifications. The concept of participation can be seen as a goal in itself (if the emphasis is on democratic values) or as an instrument in project implementation (if the emphasis is on efficiency). It can focus on contributions to public work schemes, on

sensitizing people about development alternatives, on people's involvement in decision-making processes as well as on their control over resources.

UNRISD's research programme on popular participation in the 1970s focused on participation as a question of power, defining the concept as "the organized efforts to increase control over resources and regulative institutions in given social situations, on the part of groups and movements of those hitherto excluded from such control" (Pearse and Stiefel, 1979). This type of definition of participation is sometimes avoided, since it raises questions about the distribution of power and appropriation of resources in a society. Among donor agencies and national authorities, a more favoured approach is to view popular participation as a vehicle for more efficient project implementation at the local level. Nevertheless, in all these conceptualizations, the state, in one form or another, whether the central government, the ministry of agriculture, or the district commissioner, is in opposition to the people. These conceptualizations are reductionist to the extent that they ignore social differentiation.

Since environmental degradation and rehabilitation issues have emerged in the international development debate, the issue of the relationship between popular participation and environment has come to the fore. This relationship is complicated and varies according to such factors as ecological zones, degree of demographic pressure, the options for off-farm employment and land tenure systems. The situation prevailing in the Ethiopian highlands is characterized by high population pressure, almost total lack of non-agricultural employment, widely shared poverty, technological stagnation and few possibilities for migration (there are strict regulations limiting migration to other peasant associations and to towns). Under these circumstances traditional land husbandry practices, which under former conditions were sustainable, now facilitate degradation and eat into the natural resource base.

In such a situation *the destruction of environment creates value* (Redclift, 1990). The challenge now is to reverse the situation in ways which will enable peasants to gain profits out of land husbandry methods that rehabilitate the environment. UNRISD's research programme on Sustainable Development through People's Participation in Resource Management states the problem thus:

> "The environmental problem must now be defined not just in terms of the defense of the environment against human use, but how *natural resources can best be managed and exploited creatively for people's benefit*, to optimize their usefulness to the present generation and to maintain and enhance their ability to sustain future ones (emphasis added)." (UNRISD, 1989)

The Ethiopian peasantry is today too exhausted from repeated droughts and civil strife to embark on a transition to sustainable resource

use within their local communities. It is obvious that the state and the international community must intervene constructively in this area. As a prelude to our concluding discussion, it is necessary to briefly characterize the Ethiopian state and its capacity for development.

The State

Although Ethiopia has a long political tradition, the attempts to build a centralized state are recent. Until the late nineteenth century Ethiopia was known to most foreigners as "Abyssinia", a region which roughly corresponded to the northern and central highlands in contemporary Ethiopia. This territory was loosely held together by a common culture, of which Monophysite Christianity and the royal tradition of the Solomonic dynasty were the outstanding characteristics. The social structure in these highlands had clearly feudal traits. At the bottom of society were the peasants, who were obliged to render personal services and agricultural produce to their superiors and to follow them in war.

Abyssinia expanded and contracted from time to time. When strong kings ruled, the central administration was enlarged and the power of local lords restricted. At other times, real power was in the hands of regionally based feudal lords. Political and military alliances shifted constantly and warfare was common (Teshome Kebede, 1984; Pankhurst, 1966).

In the latter half of the nineteenth century, centralized political control grew, in part as a response to European imperialism. Eventually Menilek, the king of Shoa, was crowned emperor and embarked on a series of combined diplomatic and military campaigns which gave him hegemony over historical Abyssinia and control over vast tracts of land to the south of Addis Ababa. In this way, the modern state of Ethiopia was created around the turn of the century. To the north, Ethiopia clashed with Italian colonialism. The coastal strip and the Tigray highlands down to the river Mareb, which Italy carved out, became Eritrea.

The reigns of Menilek and his successor Haile Selassie can be characterized as vigourous attempts at state building. Boundaries were defined and internationally recognized. The power of regional lords was gradually diminished, and centrally appointed governors were put in place. After the brief period of Italian occupation, which dealt a death blow to the armies and the prestige of the feudal lords, the Ethiopian state has continued its programme of administrative penetration in the countryside. A European-type administration and a standing army were introduced and feudal obligations were transformed into direct and indirect taxes. A thin network of physical infrastructure was built (Clapham, 1969; Perham, 1968).

The pace of these developments was substantially increased, and their scope broadened, after the revolution in 1974. As indicated above, the state can be said to have been succesful in "capturing" the peasantry. But the efforts by the Ethiopian state to penetrate the territory and control the inhabitants have not proceeded without disturbances. The

most serious challenges to the Ethiopian state are the wars in Eritrea and Tigray. Ironically, the war in Eritrea is closely related to the most conspicuous achievement of the Ethiopian state during Haile Selassie's rule. The former Italian colony of Eritrea was federated with Ethiopia in 1952 through a United Nations resolution. Eritrea was to have its own institutions for internal affairs, but the Imperial government gradually imposed its decisions on the federated territory. In 1962, the Eritrean parliament was dissolved and Eritrea was incorporated into the Ethiopian state as an administrative region ruled by a governor appointed by Addis Ababa. This created resentment and armed insurrection increased during the 1960s. During the Ethiopian revolution, it was made clear that the military government was not prepared to give Eritrea a special status, and the conflict escalated. The Eritrean People's Liberation Front (EPLF) emerged as the major organization representing the independence movement.[8]

8. On the emergence of liberation fronts in Eritrea, see Markakis (1988) and Bondestam (1989).

During the last decade, the EPLF has built up a military apparatus which challenges the Ethiopian army in Eritrea, and a civil administration which operates in areas outside government control. The EPLF claims the right to self-determination for the Eritrean people, including secession from the Ethiopian state. Eritrea is war-torn. Almost every year the Ethiopian armed forces mount offensives which ravage the countryside, and which are followed by EPLF counter-offensives.

No less serious for the Ethiopian government is the challenge from the Tigray People's Liberation Front (TPLF). The region of Tigray has traditionally guarded its autonomous status and resisted the hegemony of the central government in Addis Ababa. When the military government dismissed the traditional aristocratic lord as regional governor in 1975 and showed signs of extending direct control, the opposition movement in the region gained momentum. The TPLF emerged as the major resistance movement in the late 1970s and became a military factor of importance. Since then, the area under control by the Ethiopian army and administration has shrunk to only a few towns and trunk roads. In 1989, the government lost its last strongholds in the region.

The TPLF also operates in the northern parts of Gondar and Wollo provinces. Military operations roll back and forth in these areas, devastating the countryside. Most parts of the region lack effective administration from the central government, while the TPLF attempts to impose its own order. The TPLF is not for secession. The organization considers Tigray to be an integral part of Ethiopia, but it maintains that the central government in Addis Ababa lacks legitimacy.

Since 1989, the insurgency has expanded southward in Wollo and spilled into Shoa. It appears that the TPLF has joined hands with the Ethiopian People's Democratic Movement (EPDM) to form a military front called the Ethiopian People's Revolutionary Democratic Front (EPRDF), which is taking over control of the countryside throughout Wollo and in northern Shoa.

Thus it can be argued that there is a long tradition of government and administration in the Ethiopian highlands. During the twentieth century the Ethiopian state has built up a considerable administrative capacity, but no consensus on the nature of the Ethiopian nation-building project has been achieved. The authoritarian nature of the government administration and political system precludes dialogue, and civil strife has therefore become the only way to articulate opposition. The government diverts the lion's share of state resources to combat the insurgents and to reassert its authority.[9] As a result, budgetary allocations to development programmes are squeezed. In the process the development programmes have taken on an increasingly *extractive* character (including the procurement of grain at low prices, collection of taxes, unpaid labour campaigns and obligatory financial contributions to "revolutionary" tasks) and have developed *penetrative* aspects (including villagization and resettlement schemes, collectivization of agriculture, and the establishment of state-controlled mass organizations).

9. Although no official figures are available, it is estimated that 40-50 per cent of government spendings are consumed by the military apparatus and another 10 per cent by security.

The system appears to be locked in a self-defeating circuit. The state uses coercion to extract resources from the population in order to finance the military crushing of its opponents. But its authoritarian measures create more opposition. Even when drought strikes, military and security budgets are given priority in the allocation of resources. The overall result is deprivation for the people, brutalization of society and impoverishment of the country. It would be futile to think that environmental rehabilitation through people's participation is a viable alternative under such circumstances. In order to achieve lasting results in the battle against environmental degradation, the Ethiopian state would need to marshal substantial economic and human resources as well as popular support. At present the resources are not available because the priority is given to the army and state security.

Towards Sustainability?

No attempt will be made here to go into the intricacies of the concept of sustainability. Reference is made to Redclift's suggestion that sustainable development meets human needs and is capable of maintaining economic growth and conserving natural capital (Redclift, 1987, 1990). Instead of probing into the difficulties and complexities of the concept as such, I shall try to outline what sustainable development in the northern Ethiopian highlands would require during the 1990s in terms of political accommodation, participation of and incentives for the peasants, and modifications in the agricultural production.

Political sustainability

A political settlement between the government and the opposition movements is a precondition for large-scale environmental rehabilitation in the northern highlands. But peace alone will not solve the problem of degradation. The processes which underlie the problem

remain. After a decade with two major famines, which were only separated by "normal" food shortages and sufferings, the peasants are exhausted. It cannot be expected that the peasant society by its own inherent dynamic will propel itself into innovative development. The role of the state is hence critical in breaking the vicious circle of the degradation process. But the replacement of one central government in Addis Ababa with another, if the successors to power also have a monistic concept of the state, would not bring about much improvement. Neither would the mere cutting up of the present territory of Ethiopia into two or more new state formations.

A constructive political challenge facing Ethiopia is to find a political formula within which efficient development administration could be combined with power-sharing and cultural pluralism, not only between the educated élites of the various nationalities but also between the members of the thousands of peasant associations and the authorities at district and regional level.

Socio-economic Sustainability

From a social science perspective, land degradation can be viewed as a consequence of human decision-making regarding land use (Dixon, James and Sherman, 1990). Decision-making is influenced by perceived incentives and disincentives within differing time horizons. The incentive pattern is set by government policy and includes land tenure systems, administrative regulations, and pricing and marketing arrangements, among other factors. In the official Ethiopian "socialist" context, all these regulations tend to discourage peasants from long-term investments in land rehabilitation. Moreover, since the peasantry lives under conditions of extreme poverty, the time-horizon of land use decisions is bound to be short. All efforts are concentrated on the current cropping season.

Rehabilitation is ultimately dependent on the day-to-day decision-making of peasant households. Hence the economic incentive structure and the regulations on land tenure would have to be recast so that peasants think it is worthwhile to invest their labour in land and water management projects with medium- to long-term gestation periods.

Land tenure is therefore extremely important. Legal rules related to the use, transfer and succession of land must be specified, and a machinery for enforcement established. In order to facilitate long-term sustainability, the rules must be designed to encourage household investment in permanent structures which diminish erosion, stabilize vegetation and increase water infiltration. The legal rules must be consistent with the incentive systems of taxes, prices and subsidies. The incentives must be directed to households and individuals, as well as to common resources such as village woodlots. Villagers do not plant and tend

woodlots productively unless there are rules and procedures for how households can benefit from the collective enterprise by securing fuelwood and construction material for their individual needs.[10]

10. This point is clearly spelled out in Bandyopadhyay (1990).

Ecological Sustainability

In the present ecological and socio-economic conditions in the northern Ethiopian highlands, intensification of agricultural production, in the sense of greater input of labour into the conventional farming system, can neither stop further degradation nor feed the population. There is a need for innovations in the manner in which factors of production are used and combined.

The physical, biological and technical aspects of sustainable land management receive increasing attention in Ethiopia, both from the Ministry of Agriculture and from donors. It is agreed that the point of departure for improving land management practices should be the ongoing soil conservation programmes. But these programmes need to be modified and improved. Two major aspects will be mentioned here, namely, vegetative soil conservation and innovative water engineering.

Soil conservation has so far emphasized physical structures such as bunds and terraces. But trials show that the efficiency of these structures can be greatly improved if they are combined with vegetative measures. Trials are under way to test means to integrate the cultivation of forage crops and shrubs with farming systems. Increased use of legumes, forage strips, alley farming and perennial herbaceous vegetation are encouraged. Peasants have responded positively to these programmes since such measures both reduce soil erosion and provide feed for livestock. This is a concrete example of a "conservation plus production" approach.

Hillside closures also have an untapped potential for resource management. Most of the closed hillsides are left untouched, and the composition of species invading the hills is sub-optimal from a production point of view. However, the closed hillsides could become productive for fuelwood, fodder and building material. This would require the closures to be carefully managed, and divided into compartments for various purposes (such as fodder grasses, fuelwood, building poles and domestic water supplies).

Work on water conservation and irrigation is also needed. There seems to be a major potential in the micro-irrigation schemes, but overall there is a need for more innovative solutions to water engineering and year-long water storage. Techniques for *water harvesting* try to concentrate the rain water infiltration over a wide area into a smaller area where crops are grown. Techniques for *water spreading* collect seasonal torrents in rock dams from which water is distributed to cultivated fields as supplementary irrigation (Harrison, 1987).

The above-mentioned options provide a broad spectrum for research that hardly fits into the conventional agricultural research system. Single factor experiments and solutions must be abandoned in favour of research combining production and conservation using a multi-factor approach. This means, inter alia, that research stations would need to be moved from fertile flat land to eroded slopes.

Furthermore, the development of management plans for natural resource utilization at the local level is a precondition for successful rehabilitation. This means, inter alia, that the "land managers", the farmers, should be incorporated as resource persons in research programmes.

Although there still is a potential for developing sustainable production systems in degraded highland areas in northern Ethiopia, the realization of this potential would require massive external support. A drastic intervention would be to take selected parts of the land out of production for some years. The exhausted state of much agricultural land in Ethiopia requires that it "rest" and be "doctored" before going back into production.

The consequences for the peasant society of such an intervention would be far-reaching. Not only would land have to be taken out of immediate production, but much peasant labour would have to be directed toward rehabilitation work at the expense of cultivation. This means that the food deficit would be substantial. A new approach would therefore have to be designed on the basis of long-term agreements between peasant associations, the authorities and donors. The long-term nature of rehabilitation requires a decade-long agreement, under which peasant associations would undertake to implement rehabilitation programmes in accordance with a plan of operation emanating from research findings, and agreed upon by all parties. While the peasants would leave areas out of cultivation and close them to grazing, the authorities would undertake to distribute food, in compensation for food production foregone by the substitution of rehabilitation efforts for cultivation. The food itself would have to be provided by international donors under the auspices of WFP.

This approach has the disadvantage of requiring massive external support for a period of many years. Such support is perhaps inevitable, since the peasants are now in a state of exhaustion which precludes an enthusiastic attitude toward risk-taking and innovative activities. However, it is important that the period of dependence be as short as possible.

Rehabilitation entails economic costs, and an assessment must therefore be made of its relative costs and benefits. The further degradation has proceeded, the higher the costs of rehabilitation will be, and, more importantly, the fewer the productive options will be. In hilly areas where most of the vegetation and topsoil have disappeared, the only realistic conservation measure may be the planting of drought-resistant shrubs with little production potential. The area to be rehabilitated must

therefore be subdivided in accordance with differing degrees of degradation, and with varying prospects for restoring the production of crops, fibres and feed.

Concluding Remarks

These examples may suffice to indicate that there are real opportunities for ecological rehabilitation and the development of modified agricultural production systems in the northern highlands of Ethiopia. It is also evident that such sustainable development would require an active and massive effort by the millions of peasants living there. Rehabilitation can only come about through people's participation based on incentives and empowerment. But the efforts must be guided by a state administration, and resources must be brought in from external sources. Thus the future of the northern Ethiopian highlands depends on whether the people, the government and international donors can find a constructive political formula for co-operation. The outcome will spell the difference between ecological collapse and human disaster on the one hand, and gradual rehabilitation on the other.



Bibliography

Note that Ethiopian authors are cited by their first names.

Bandyopadhyay, J.
From Natural Resource Conflicts to Sustainable Development in the Himalaya - Critical Reflections on the Scope for People's Participation, paper presented at the UNRISD Workshop on Sustainable Development through People's Participation in Resource Management, Geneva, 9-11 May 1990.

Blaikie, P. and H. Brookfield
Land Degradation and Society, Methuen, London, 1987.

Bondestam, L.
Eritrea - med rätt till självbestämmande, Clavis, Lysekil, 1989.

Central Statistical Office
National Census, Addis Ababa, 1985.

Clapham, C.
Haile Selassie's Government, Longman, London, 1969.

Dixon, J.A. , D.E. James and P.B. Sherman
The Economics of Dryland Management, Earthscan, London, 1990.

FAO/UNDP
Ethiopia: A Land Resources Inventory for Land Use Planning, Technical Reports 1-6, FAO, Rome, 1984.

Fruhling, P.
Utveckling bättre än nödhjälp. Om Röda korsets katastrofförebyggande arbete i Wollo, Röda Korset, Stockholm, 1988.

Harrison, P.
The Greening of Africa. Breaking through in the battle for land and food, Paladin, London, 1987.

Hultin, J.
Farmers' Participation in the Wollo Programme, SIDA, Stockholm, 1988.

Markakis, J.
"The Nationalist Revolution in Eritrea", **The Journal of Modern African Studies**, 26:1, 1988.

Markos Ezra and Kassahun Berhanu
A Review of the Community Forestry Programme and an Evaluation of its Achievements, Institute of Development Research, Addis Ababa University, Addis Ababa, 1988.

Ministry of Agriculture and FAO
Ethiopian Highlands Reclamation Study, 2 volumes, 17 working papers, Addis Ababa, 1984.

Office of the National Committee for Central Planning
Workshop on Food-for-Work in Ethiopia, Addis Ababa, 1986.

Pankhurst, R.
State and Land in Ethiopian History, Oxford University Press, Addis Ababa, 1966.

Pearse, A. and M. Stiefel
Inquiry into Participation - A Research Approach, UNRISD, Geneva, 1979.

Perham, M.
The Government of Ethiopia, Faber and Faber, London, 1968.

Redclift, M.
Sustainable Development: Exploring the Contradictions, Routledge, London, 1987.

Sustainable Development through Popular Participation: A Framework for Analysis, paper presented at the UNRISD Workshop on Sustainable Development through People's Participation in Resource Management, Geneva, 9-11 May 1990.

Russell, E.W.
Soil Conditions and Plant Growth, Longman, London, 1973.

Ståhl, M.
"Capturing the Peasants through Cooperatives - the Case of Ethiopia" in B. Gyllström and F.M. Rundquist (eds.), **State, Cooperatives and Rural Change**, Lund Studies in Geography, Ser.B. Human Geography 53, Lund University Press, Lund, 1989.

Teshome Kebede
"Some Aspects of Feudalism in Ethiopia", in Rubenson (ed.), **Proceedings of the Seventh International Conference of Ethiopian Studies**, Scandinavian Institute of African Studies, Uppsala, 1984.

UNRISD
Sustainable Development through Popular Participation in Resource Management, UNRISD research proposal, 1989.

Westphal, E.
Agricultural Systems in Ethiopia, CAPD, Wageningen, 1975.

Yeraswork Admassie

Impact and Sustainability of Activities of Rehabilitation of Forest, Grazing and Agricultural Lands Supported by WFP Project 2488, Report to WFP and to the Natural Resources Main Department of the Ministry of Agriculture, Addis Ababa, 1988.

Emerging Paradigms of Participatory Rural Development, Dept. of Sociology, Uppsala University, Uppsala, 1990.

Yeraswork Admassie, Mulugeta Abebe, Markos Ezra and J. Gay

Ethiopian Highlands Reclamation Study: Report on the Sociological Survey and Sociological Considerations in Preparing a Development Strategy, Ministry of Agriculture and FAO, Addis Ababa, 1983.

Yeraswork Admassie, Soloman Gebre and J. Holt

Food-for-Work in Ethiopia. A Socio-Economic Survey, Institute of Development Research, Addis Ababa University, Addis Ababa, 1985.

Yohannes Gebre Michael

Land Use, Agricultural Production and Soil Conservation Methods in Andit-Tid Area, Shewa Region, M.A. Thesis, Addis Ababa University, 1988.

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