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MULTI-DISCIPLINARY REGIONAL ADVISORY GROUP

REPORT ON AN ADVISORY MISSION TO SAFGRAD
ON THE DESIGN OF COUNTRY PROGRAMMES ON
SUSTAINABLE AGRICULTURAL DEVELOPMENT

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I. INTRODUCTION

At the request of the International Coordinator of the Organization of African Unity's Scientific, Technical, and Research Commission (OAU/STRC), the United Nations Economic Commission for Africa's (ECA) Senior Regional Adviser in Food and Agricultural Policy and Planning, Mr. G.I. Abalu undertook a mission to Abidjan, Côte d'Ivoire, from 20 to 24 February, 1995 to undertake a series of technical consultations with staff of the African Development Bank (ADB) on the design of Country on Sustainable agricultural development.

The mission was in conformity with Programme Element 20.48 of the approved United Nations Regular Programme of Technical Cooperation for the 1994-1995 Biennium which calls for the provision of advisory services to member States and Inter-governmental Organizations in the formulation of appropriate policies, plans, and programmes relating to food production and food security.

Terms of Reference

The terms of reference of the mission were to:

1. Define the various components of the country Sub-components of the programme;
2. Define the terms of reference to be used in elaborating country level programmes;
3. Discuss future institutional and management frameworks for the implementation of the Country programmes; and
4. Resolve outstanding issues raised during the joint ad-hoc technical committee meeting held with officials at the ADB in November 1994.

Mission Activities

The mission consulted with officials of the Environment and Social Policy Division, the Multi-lateral Cooperation and African Organizations Division, and the Agriculture Division. working sessions were held with Mr. Lual Deng, Chief, Environment and Social Policy Division and his staff, and Mr. D.L. Matalemu,

Chief, Multi-lateral Cooperation and African Organizations and his staff. Others with whom discussions were held included: Franssen Jacques, Senior Environment Expert, Mr. Magetane Khalikane, Technical Adviser, and Marcel Alens, Environment Officer.

II. THE PROGRAMME PROPOSAL

The proposal for the programme was prompted by the recognition that african agricultural development and the protection of the environment must take place in a mutually reinforceable manner in Africa. The region possesses a varied environment comprising diverse ecological systems. Tropical forests, cool highlands, humid coastal areas, riverine and marshy zones, extensive savannas, semi-arid regions and vast stretches of desert exist side by side throughout the continent. This varied topography super-imposed on highly variable soils and rainfall has resulted in a wide combination of production systems and sub-systems including cultivation, herding, hunting and gathering. The diversity has given rise, over time, to a wide variety of human activities which seek to exploit local and regional specificities to assure food security and sufficiency. As a result, contrasting systems involving shifting cultivation, intensive agriculture, organic fertilizer, intercropping, mixed farming, hill side, wetland and dry plains cultivation, water harvesting and irrigation, soil and forest conservation, and nomadic and transhumance pastoralism, now form part of the traditional production systems of African communities.

It is now, however, clear that environmental degradation caused by soil erosion, desertification, deforestation and unwise agricultural practices is seriously undermining the very resources on which many African farmers and their families depend for their survival. It is also becoming increasingly obvious that, to be successful and sustainable, any effort to increase food and agricultural production in Africa to keep pace with the increased demands of the population, must be strongly linked to complementary strategies to sustainably manage the natural resource base.

Available evidence suggest that environmental constraints are already posing serious limitations to food security in several African countries particularly in areas where population densities are increasing rapidly. Average population growth in

many African countries is in excess of 3.0 per cent per annum resulting in excessive pressure on the land for food and agricultural products. The consequence has been environmentally damaging levels of deforestation and land degradation. Rangelands are being destroyed as a result of overgrazing and wasteful and inadequate management of available water resources. The problem has been compounded by reduced and uncertain levels of rainfall which are aggravating the already deteriorating status of other natural resources. The worsening situation is also being accelerated by destructive cultural practices leading to severe soil problems and loss of valuable agricultural land. The continent's future food security situation will, therefore, depend heavily on the effectiveness of African efforts in reversing this trend and in managing the natural resource base to produce enough food and raw materials to meet and even surpass the needs of the continent's rapidly increasing population without damaging the essential ecological integrity of the food and agricultural systems.

African soils are more fragile, the timing and quantity of rainfall more variable, and the predominance of arid and semi-arid areas greater than in other regions of the world. The continent also has a long history of devastation brought about by droughts, floods, typhoons, diseases and political conflicts. It is a measure of the strength of their resilience and ingenuity that, in the past, African communities were able to evolve systems of natural resource use and management that, by and large, simultaneously secured their livelihood and the integrity of the environment. Post independence initiatives have, however, failed to fully exploit this resilience and ingenuity. Instead, they have focused more on ways by which local people can be persuaded to provide the necessary labour input into environmental projects designed outside the community than on ways in which grassroots initiatives, stemming from indigenous environmental concerns, can inform the development of sustainable environmental interventions.

Fortunately many African Governments and their development partners now appreciate the fact that future environmental efforts will require significant modification in existing mechanisms for planning and implementing activities to curb environmental stress. It is now widely understood that a collaborative and consultative mechanism must be evolved so that African communities can be involved in the definition of

environmental interventions in their iconological systems, based on local priorities and needs. The need for an implementation mechanism at the grassroots level to channel much needed support directly to community based environmental interventions it also widely acknowledged. These are the driving force behind the conceptualization of the programme.

Development Objectives

The primary development objective of the programme is to promote the attainment of food security and self-sufficiency in African countries without damaging the essential environmental integrity of African food and agricultural systems.

Immediate Objectives

The programme has the following immediate objectives:

1. To put in place, on a pilot basis in selected African countries, mechanisms that will provide a better understanding of and communication with local communities with a view to overcoming the most important environmental problems associated with efforts to increase food security and sufficiency;
2. To strengthen the capacities of village, district, and provincial institutions to plan, implement and manage the rural development components of NEAPs and to develop, test, and further improve the procedures for village level management of natural resources in support of sustainable food security and sufficiency;
3. To evolve a community-based village-level natural resource management mechanism that, with time, can be easily extended nation-wide. Such a mechanism will be expected to:
 - a. Integrate existing sub-systems of agricultural production (i.e., cropping, agro-forestry, livestock, forage legumes, fishery, etc..) in an environmentally sustainable manner;
 - b. Prevent degradation of the resource base while concurrently inducing the improvement of soil

fertility through enhancement and recycling of renewable resources between sub-systems of production, for example, cropping and livestock systems;

- c. Strengthen sustainable management of village ecosystems by adopting appropriate traditional and indigenous methods of land conservation and rehabilitation, complimented whenever necessary, by appropriate and relevant new technologies;
 - d. Develop, at the village level, simple and easy to use environmental protection techniques such as those required for water use efficiency, water harvesting and soil conservation;
 - e. Introduce agro-forestry techniques which can reduce soil degradation arising from, among other causes, run-off and erosion on depleted soils; and
 - f. Address the immediate food, shelter, and energy needs of farmers and the long-term conservation needs of villages.
4. To establish a regional mechanism for coordinating rural environmental efforts in African countries so as to promote the exchange of information and experiences between and among government environmental administrators, researchers, farmers and external and non-governmental agencies.

The Regional Perspective

Recognizing that environmental degradation and decline in agricultural productivity are not limited to political frontiers and boundaries, the programme is anchored around a strong regional perspective. The thrust of this perspective is to create the favourable institutional conditions and mechanisms which are essential for solving common problems of food production and environmental degradation.

The programme has been designed to respond to the reality that African countries working alone would find it very difficult to achieve their environmental protection development objectives. This is particularly true in connection with the attainment of their food production objectives. In this regard, sustainable agricultural development in Africa requires that local communities enjoy genuine autonomy, have control over adequate resources and be provided, where necessary, with minimal technical assistance to restore their resource base and re-establish control over natural resources. The technical assistance needs of the project are, therefore, limited to those that will reinforce the capabilities and effectiveness of grassroots arrangements and organisations to manage their natural resources. The focus is to build on a base of existing local knowledge, skills and technology and lessons from participatory experience and experimentation. There will, therefore, be a strong emphasis on indigenous human resource development. The progressive building of skills and know-how of local staff and community administrators will be taken into account in the evaluation of the impact of the project.

The regional component of the project is intended to ensure that African countries work together so as to attain the critical mass that is essential for tackling each country's environmental problems. The focus will be on the identification of common environmental and agricultural production research and development priorities for solving the food, shelter, and energy production problems of African countries, based on constraints with a regional dimension and the installation of a sustainable mechanism for successfully meeting these priorities. This way, African countries will be able to learn from each other's successes and failures.

The regional perspective will also exploit the wind of political change currently blowing through Africa. Following independence many African governments inherited colonial tendencies that were biased against the involvement of the majority of their indigenous people in the development process which, in turn, has left a legacy of patronage, economic disparities, political contradictions and social divisions. The consequence of this tendency has been a failure to utilize the enormous reserves of traditional African wisdom, creativity and enterprise.

However today, there is a new movement in Africa towards democracy and more popular participation by the masses in the process of development. Such grass-roots participation in the development process should create opportunities which will mobilize the continent's resources and ensure that the path of development responds to the interest of the people. Furthermore, the regional perspective of the project is also designed to pay greater attention to the role of women in sustainable food production. The goal of sustainable food production will be elusive if half of the continent's population continues to be marginalized and discriminated against.

III. RECOMMENDED PROGRAMME ACTIVITIES

The main tool of operation of the programme in each country and village location should be the Village Level Environmental Action Plan (VLEAP). It should serve as the basis for preparing the Annual Environmental Work Programmes (AEWP) for each of the project villages. The activities included in the AEWPs will, of course, vary from village to village and from ecological zone to ecological zone. However, some common programming activities will cut across all the major sub-production systems and agro-ecological zones. These include but are not necessarily limited to the following:

Environmental Protection

Activities to protect and restore the environment through:

1. The regeneration of natural resources;
2. Technically, economically and socially feasible agro-forestry practices including the planting of appropriate trees, in adequate density, for maximum soil fertilization and protection and woody fodder production;
3. Afforestation involving communal forests, village nurseries and tree planting.

Crop Cultivation

1. The acquisition/production and efficient use of organic manure;

2. Use of farming implements that ensure better soil tillage with the recycling of manure;
3. The establishment of anti-erosion infrastructures;
4. The use of improved technologies including resource management technologies and cultural practices;
5. The production of crop residues for livestock feed;

Animal Husbandry

1. Better supervision and management of livestock;
2. Appropriate sedentarization;
3. The conservation of natural fodder and use of crop residues;
4. The production of fodder crops with good feed value;
5. The application of satisfactory health care;
6. The use of genetically improved livestock through mass breeding, introduction of sires and managed castration.

Water Resources Management

1. Greater water conservation for household and animal use and irrigation;
2. Reconstitution of ground water through greater infiltration associated with reduction of run-off;
3. Construction of water catchments and dam to store water at the surface or in the soil and to control run-off.

III. RECOMMENDED PROGRAMME COMPONENT

The principal components of the programme in each country should be designed to address the following needs:

1. The integration of crops and livestock production;
2. Agro-forestry, soil and water management;
3. Integrated resource management; and
4. Training.

The essential aspects of these components are discussed below.

Crop-Livestock Integration

This component of the project activities will focus on crop livestock interrelationships at the farm level. The goal is to enhance intensification of agricultural production to meet the food, fuel and shelter requirements of rapidly expanding rural populations without degrading the environment, through efficient management of on-farm resources. The integration of crops-livestock production systems, which have synergic resource and economic complementarity in maximizing small holder off-take of agriculture per unit of land, will be vigorously pursued.

The component would serve as the basis for establishing an efficient management of on-farm renewable resources. Crops-livestock husbandry will be viewed as an integrated enterprise. The thrust here would be on enhancing the resource and economic complementarities between crop and livestock production systems. For example, the collection, processing and utilization of animal manure to sustain soil fertility, will form an important activity in this component of the project. Crop residues and other lignocellulosic biomass from livestock would be converted into high value marketable commodities, such as meat, milk etc. Animal traction will be promoted to reduce labour bottlenecks and the drudgery of labour. The cultivation of forage legumes will be encouraged not only to provide quality animal feed, but also to enrich the soil with nitrogen.

The essential aspects of this component of the programme activities will include but not necessarily be limited to:

1. Measures to promote the integration of crops and livestock production;
2. Measures to reverse the degradation of rangelands;
3. Measures to increase the availability of animal feed;
4. Measures to reduce the incidence of animal diseases;
5. Measures to reduce conflict between crop and livestock producers;
6. Measures to increase participation of women in livestock activities;
7. Measures to promote the marketing of animal products and crop by-products; and

Systematic pursuit of the above measures will lead to the regeneration of the resource base by improving the fertility and raising the water absorbing and cation exchange capacity of the soil with a view to eventually attaining optimum accumulation of organic matter (i.e, through the application of animal manure, return of crop residue, green manuring and integration of useful trees into the cropping system). The goal is to rejuvenate fragile ecosystems through efficient management of the renewable resources of the mixed crops-livestock systems.

Agro-forestry, Soil and Water Management

Agro-forestry

This component of the programme activities will involve the growing of trees along with crops. Also included in the component will be the planting of trees as windbreaks in homesteads for provision of shade and shelter, and for soil conservation. The growing of trees in rows with food crops planted between the rows (alley cropping) will also form an important part of this component. The objective here would be to reduce the incidence of diseases, weeds, pests and soil loss; to enable different plants to exploit different soil regimes; to

provide continuous supply of food and to increase overall agricultural productivity of the land.

The villagers will be assisted to select appropriate indigenous leguminous tree and shrub species. Furthermore, they will be provided with appropriate information on how to develop their nurseries and care for the young trees. Suitable information on tree species for shade and windbreak around homesteads and schools and the right tree and shrub species for planting along contour lines on their farms to prevent soil loss will also be provided to them. In general, certain species of multipurpose leguminous trees such as Precipice, Albizia, Acacia, Leucaena, Gliricidia, Casuarina, Sesbania and Cassia, which are commonly used in agro-forestry, will be experimented with as appropriate.

Development of Fuelwood for Village Development

A piece of land for growing trees specifically for the provision of fuelwood will be set aside in each project village. The growing of trees on public land, generally known as communal forestry, will be the responsibility of the Village Environment Committees who will administer the establishment and harvesting of trees from the communal forest. Proper knowledge of fast growing trees with other desirable characteristics such as high calorific value will be provided. The use of fuel efficient stoves as well as the development and exploitation of alternative renewable sources of energy in order to give time to the planted seedlings to grow and mature, will be encouraged.

This component of the project will also emphasize measures to relieve women and female children from having to spend most their working hours collecting firewood from distant places for the household needs.

Soil Conservation Measures

This component of the project will identify the factors which cause land degradation in the village so that remedial actions can be taken. Some of the likely remedial actions to be taken will involve measures to reduce water run-off as well as those which increase vegetative cover over the land surface. Furthermore, soil conservation measures to stabilize and increase crop yields through the percolation and retention of ground water

and plant nutrients, will also be pursued. These measures will include but not necessarily be limited to: terracing as appropriate, contour farming reinforced by planting of permanent grass trips such as vetiveria zizanioides; and construction of earthen or stone bands and stone lines along contours.

Water Resource Management

This component will attempt to reduce water run-off in order to maximize water infiltration into the soil. This will involve, among other things, the construction of gibbons as well as the inclusion of a cover-crop and crop-mulch in the cropping system. Collection of run-off water from large catchment areas such as hill tops using stone bands and conveying the harvested water through channels to cultivated fields will be explored. Ways of reducing surface evaporation from water storage reservoirs will also be explored.

Integrated Resource and Crop Management

This component of the project will focus on measures for simultaneously increasing soil productivity and sustaining the resource potential of the project villages. For each village the project will review and identify available resource management technologies and if found to be valid for the conditions of the village, disseminated to village farmers for village-wide use. Attention will also be paid to other resource constraints including, labour shortages, access to markets and the villagers's ability to obtain access to farm implements and inputs. The critical interdependence between short-term productivity and longer-term resource conservation will be addressed through a series of on-farm adaptive trials which will centre around known and available technologies, and will be used to modify existing resource management practices as appropriate or to design new ones which are capable of stabilizing or increasing output while avoiding degradation of the resource base. The search will be for sustainable and productive cropping and animal sub-systems that are compatible with the resource and livelihood objectives of the villagers and farmers.

The main technological options on offer include: alley farming, mulches and cover crops, land clearing and development, tillage methods, fertilizers and soil additives, and improved fallow systems. These technologies are briefly described below.

Alley Farming

The inclusion of woody species in food crop production systems holds considerable promise as an important and suitable approach for maintaining productivity in the degradable soils of many areas of Africa. The main problems with this technology are the extensive reserves of land needed for the system to function and the high labour requirements to clear land that has been in fallow for extended periods. In many cases, adequate land and/or labour are no longer available to sustain this system. An alternative approach which merges the crop and wooded phases is "alley farming," an agroforestry system in which food crops are grown between rows of nitrogen-fixing, leguminous trees. Under many conditions, alley farming can make possible continuous cultivation of food crops while at the same time providing numerous other benefits. The trees are pruned before and during the cropping period to prevent shading and to reduce competition with food crops. The pruning are used as mulch to increase soil fertility, conserve water, and suppress weeds. Pruning from the leguminous species can provide as much as 60 kilograms of nitrogen per hectare per year for the crops. The system also provides other beneficial outputs, including animal fodder for cattle and small ruminants, staking material for other crops, firewood, and partial weed control. When the hedgerows are planted on the contour lines of sloping land, they can also help prevent erosion.

Compared with traditional practices, alley farming, with hedgerows of *Leucaena leucaena*, *Leucocephala* or *Gliricidia Sepium*, has been shown to be capable of producing relatively high yields of maize and other crops, without fertilizer on a sustainable basis on nonacid soils in the transition and moist savanna zones. On acid soils in the humid zone, other species are generally necessary, and some other elements of the system will probably have to be adapted. Species currently being tested for use on acid soils include *Acioa barterii*, *Cassia siamea*, *Flemingia congesta*, and *Cajanus cajan*. The suitability of various intercropping combinations in this system and their interactions with the tree species would need to be tested on-farm in the project sites under different conditions. Modified forms of alley farming which involve alteration of existing systems to varying extent-but which incorporate the basic principles of alley farming - would also be evaluated.

Mulches and Cover Crops

Various forms of mulch farming have been investigated for use under diverse conditions. These include a number of species of live mulches, which are generally quick-growing leguminous cover crops. These can provide a constant soil cover before, during, and after the cropping phase to prevent or retard soil degradation, and, in many cases, to suppress weeds. A number of useful species have been identified and selected, and experiments have been carried out to test their compatibility with different cropping systems and performance under various conditions. Simple hand-drawn equipment for planting crop seeds through the mulch cover has also been developed. Promising mulch farming will be tried in selected village sites as appropriate.

Land Clearing and Development

In Many areas of the continent, land clearing for cultivation requires the removal of trees and shrubs. On small and medium-sized farms, land clearing is done manually. This has a distinct advantage over machine clearing since the area cleared is normally quite small, and the problems of soil compaction and erosion are reduced. The drudgery involved, however, makes some degree of mechanized clearing an attractive alternative. In some areas, where there are fewer trees, mechanized land clearing is becoming more common on large commercial farms. Available research suggests that, when heavy equipment is used, soil disturbance and subsequent erosion can be kept to a minimum with implements such as the shear blade, which cuts the vegetation at ground level. Minimum or zero-tillage with use of cover crops, mulches, and herbicides also show good promise when the land is cleared in this way. When necessary, available technology for land clearing and development will be introduced in selected pilot villages.

Tillage Methods

Various studies have shown the advantages of minimum or no-tillage farming. To be successful, this must be combined with appropriate land clearing and subsequent management practices, including the use of mulches. Weeds are generally controlled with herbicides. This system has decided advantages in conserving soil and water and maintaining lower soil temperatures and higher levels of soil organic matter. However, on-farm

adaptive trials will be needed to determine the conditions under which it would be most practical for the project villages that need to use it.

Fertilizers and Soil Additives

There is clearly growing interest by small-scale farmers in much of Africa in the use of fertilizers and other chemical additives. In addition to increasing short-term output, these can delay or modify some aspects of soil degradation. However, available research has shown that, because of the greatly reduced buffering capacity of the weathered soils in many regions, excessive and inappropriate use of nitrogen fertilizers can cause severe acidification and soil toxicity problems. Appropriate fertilizer and soil additive technologies will be tested on-farm and adapted to village conditions as appropriate.

Improved Fallows

Some research information is available on improved fallow management practices that will be more efficient in restoring soil fertility than unmanaged bush fallows. Some of the species used in alley farming experiments, such as *Leucaena*, can be beneficial in a managed fallow system. Moreover, there are areas in which farmers already plant or select certain fallow species,

especially in the humid forest zone. This can provide the basis for further work, although the particular mix of species used may be quite site-specific.

XV. SUGGESTIONS FOR DEVELOPING COUNTRY PROGRAMMES

The main premise of the programme at the country level is that it is the combined impact of individual community based activities - either constructive or destructive - undertaken by the vast majority of community members which will determine the fate of each African country's natural resources and ecosystems. The project strategy at the country level is, therefore, based on the proposition that most African peasants have a greater interest in the integrity of their environment than any outside parties since their very existence and way of life is at stake. The fact that many of their activities may now contribute to the degradation of the very resources on which their future and

livelihood depends can be attributed to the breakdown of their customary systems of resource management and consequent loss of group control, local autonomy and responsibility. Community participation is, therefore, essential if the advantages of these customary systems are to be restored.

The country programmes are, therefore, intended to:

1. Provide technical support to enhance the collective resource management operations of the communities involved;
2. Provide the needed technical support for the development of human, institutional, and infrastructural capacities at the local level; and
3. Effectively utilize existing technical talents and facilities of participating countries to build up the desired "critical mass" in the management of agricultural production and the environment at regional and national levels.

Community Participation

It should be emphasized that the term community participation is seen by the project not simply as an alternative more efficient management style to be used by African Governments and their development partners to increase the success of national environmental conservation projects but, more constructively, to reflect the desire of many communities to develop rules and structures which ensure that resources are not over-exploited or destructively exploited by any individual or groups. This is not to say, however, that "grassroots environmental action" at the national level is by itself sufficient to prevent or reverse environmental degradation in situations where national policies or global-level ecological changes create major destructive forces, but to emphasize that local level participation is a pre-requisite for sustainable development.

Obvious examples of the importance of local-level participation in sustainable development range from situations where needed environmental conservation actions such as those involving tree-planting are so overwhelming that widespread

cooperation from everyone involved becomes imperative, to instances where the prevention of continued environmental degradation requires group action such as in situations in which pastoralists must maintain social controls in order to prevent the over-exploitation of resources. In many cases, social mobilization has also proven very effective in successfully opposing the destructive resource management practices of external agents.

This focus on grassroots participation is supported by compelling logic and impressive evidence. Indigenous communities in Africa have a deep and intimate knowledge of their local ecology, flora, and fauna born out of centuries of constant interaction with the environment and handed down from generation to generation. Local communities are also in a very good position to assess the relevance and validity of solutions to their environmental problems devised by outsiders. The project's logic is, therefore, centred around the proposition that effective participation of local people in devising and implementing programmes and activities of environmental conservation provides the best guarantee for achieving the objectives of sustainable food security and sufficiency. There are many success stories of indigenous African inventiveness and creativity in devising environmentally harmonious adaptations in production systems to changes in social and material conditions and environmental projects which combine external resources with community initiatives and participation.

The programme should aim to capitalize on these successful African experiences by emphasizing: meaningful democratic participation by the local people; adequate preparation and focus on livelihood concerns; use of community organizations; reliance on locally available tools, materials and skills; preference for low-risk activities with attractive pay-offs; use of existing systems of marketing and extension and government and donor support and commitment.

Gender Focus

In many ways, women in rural areas have been the most affected by the environmental crisis facing African agricultural production. Nearly 80 per cent of the economically active women in sub-Saharan Africa are in agriculture and are responsible for over 70 per cent of the region's food production. In their

capacity as food producers, they have seen the returns to their labour reduced by declining soil fertility and cultivation in marginal areas. The migration of male members of the household induced by scarce or degraded resources has further increased their responsibilities and work load. Labour force surveys estimate the total working time for women in Africa at 67 hours per week. Micro-studies suggest that women and girls spend, on average, 5 to 17 hours per week collecting and carrying water and fuelwood with adverse effect on family nutrition and health.

Country programmes should be designed so as to have a positive effect on the women members of the village. Mechanisms will be put in place including separate village environmental committees for women, whenever necessary, to ensure that gender focus is maintained. For example, the annual work programmes will pay special attention to strengthening women tenure rights. The provision of additional water sources, if required, will also focus on the reduction of the time and effort required for water collection, an activity normally undertaken by women. Afforestation activities will be designed to reduce the time required for fuelwood collection, another task normally performed by women in many African countries. Commercial and marketing opportunities of direct importance to women will also be promoted.

The Role of External and Non-Governmental Organizations

Most African nations have a large number of foreign agencies, including multilateral, bilateral, and non-Government Organizations (NGOs), active in the different villages of their countries. Many of these agencies are engaged directly in rural development. A number of the bilateral and multilateral agencies are also financing projects in several African countries which include strong environmental and agricultural development components. Furthermore, many of these NGOs are now reformulating their country programmes to better address environmental concerns. In this regard, many of them have gained invaluable local experience in implementing projects for a variety of donors. African development projects, however, have had a history of insufficient consultation between external agencies and NGOs and local administrations and a lack of consistency among the programmes of different agencies. To avoid this problem and to fully exploit the complementary benefits derivable from involving both government agencies and NGOS in the implementation of the

present project, whenever possible and feasible, NGOs will be encouraged to integrate their activities with those of the present project in the different country sites.

VI. SUGGESTIONS FOR THE MANAGEMENT OF THE PROGRAMME

Each country will have a National Steering Committee comprising one representative each from the principal ministries of concern, i.e., agriculture, livestock, forestry, water, health, fisheries, etc. Other agencies and organizations such as research institutes, universities, development projects and NGOs will also be represented as appropriate, in the Steering Committee. The Permanent Secretary (Secretary General) of the Ministry of Environment and Natural Resources will chair the meetings. The National Coordinator for Grassroots Environmental Activities will serve as the Secretary to the committee. The functions of the committee will include the following:

1. Provide guidance on the identification and implementation of VLEAPs and AEWPs;
2. Review, adjust, and approve VLEAPs and AEWPs and make recommendations on village level activities and annual budgets;
3. Ensure the provision of support by all the concerned agencies including line ministries, research institutes, universities, NGOs, etc. and establish, maintain and follow up on the needed relationships between project villages, districts, provinces and the central government;
4. Provide other support as requested by the National Coordinator.

Grassroots Environmental Support Teams

Each country project will have a national Grassroots Environmental and Agricultural Development Support Team (GEST) based in the project village and comprising a Team Leader (a routine ministry field staff chosen according to the environmental priority of the village) and technical assistants representing the major production systems in the community, and

representatives of NGOs and development projects operating in the village. The team will be based in the village and its primary responsibility will be to provide the needed support to the Village Environmental Committee on all aspects of its work.

NATIONAL COORDINATOR

Each country programme will appoint a National Coordinator for Grassroots Environmental Activities (NCGEA) to carry out overall coordination of the project's activities in the country. The NCGEA should be an experienced Agronomist or Agricultural Economist with requisite experience in environmental and farming systems

Training

Since the programme is inward looking and community based, local level training should feature prominently in its activities. The training component should be managed and supervised by the National Coordinator for Grassroots Environmental and Agricultural Development Activities in collaboration with the resident village project Coordinator. He/she will prepare annual plans of training including estimates of costs and will, every six months, prepare a report evaluating the training programme. These reports will be submitted to the National Coordinator for Grassroots Environmental and Agricultural Development Activities who will transmit them to the National Steering Committee for approval.

The implementation agreement to be signed by the Village Environmental and Agricultural Development Committee and the Government will provide details on the training to be conducted and the responsibilities of each of the participating institutions and agencies. The agreement will also specify time tables for the training activities to be executed and the required logistic requirements. The Regional Coordinator will complement the training programme with the needed technical assistance as required. The village Environmental Support Team will monitor the training needs and the execution of training activities at the village, district, and provincial levels. Training priorities and content will be guided by the needs identified by the Village Environmental committee at the village level and those identified by the support team at the provincial and district levels.

VII. RECOMMENDATIONS FOR OPERATIONALIZING COUNTRY PROGRAMMES

The following recommendations are made for operationalizing the programme in the deferent pilot countries.

Socio-economic Considerations

Review and consider the following:

1. The rights of households to land and other natural resources;
2. The nature of existing land rights including the rights of herders to land, grazing areas, and water - customary controls and practice vis-a-vis government practice and administration;
3. Availability of basic village services such as schools, adult literacy classes, health services, water, transport, communication, credit, etc.;
4. The existence of an enabling environment in government in general and in public institutions in particular for motivating local people to manage their natural resources properly while at the same time improving their livelihood;
5. Inventory of non-farm occupations such as blacksmith to make implements;
6. Inventory of farm-related production activities such as poultry raising, beekeeping, horticultural crops gardening;
7. Access of women to land and credit and to related agricultural support services;
8. The nature of the operating legal system and the mechanisms for adjudicating conflicts regarding access to land and natural resources;
9. Trends in the structure and growth of the population.

Technical considerations

Review and consider the following:

1. The level and extent of the degradation of the natural resource base including soil erosion, loss of vegetative cover, frequency of drought, decrease in bio-diversity;
2. Decline in agricultural productivity;
3. Inputs used and practice followed by the local people;
4. Available endogenous knowledge and practices employed in agricultural production and the management of natural resources;
5. Agro-ecological characterization of the soil.

Programme Implementation Training

1. Start with local people and their diagnosis of problems associated with resource management (i.e., depletion of soil fertility, acidity, water and land use systems, etc.);
2. Clarify existing rules of tenure systems, including customary practice, rights of local communities to manage their own resources;
3. Conduct participatory diagnosis (i.e., local communities, NGOs, technical experts, etc.), of agricultural, social, environmental, economic and institutional problems;
4. Elaborate village programme based on local priorities and detail the nature of improvements.

Defining Components of the Programme

1. Involve beneficiaries and multidisciplinary technical teams drawn largely from national institutions to elaborate project components in consultation with village communities;

2. Ensure that programme activities: lead to a minimization of environmental degradation, and as enhancement of food production and security; meet fuel and shelter requirements; and achieve integrated resource management and sustenance of biodiversity.

Capacity Building

1. Engage in training to enable local people play key role in the diagnosis of problems, and the definition of priorities;
2. Identify training needs to improve skills of local people in the conservation of the environment and management of agricultural activities;
3. Undertake an inventory of available manpower to form multidisciplinary teams at the national level;
4. Undertake an inventory of existing training institutions;
5. Provide regional technical support.

Management of Programme Activities

1. Decentralization of decision making from public institutions and government agencies to local people;
2. Building of confidence in local people to properly manage natural resources (land, water, forest, etc.);
3. Organization and election (democratically) of local committee or teams at village level to be responsible for carrying out specific tasks within a given time frame (the scope of representation in the committee to include women, settled farmers, transhumance herders, etc);
4. Establishment of national steering committee (comprising local people, technical experts, NGOs, etc) to follow-up on the implementation of programme activities as agreed and approved by the village community;

5. Linkages to on-going project activities and regional collaboration.