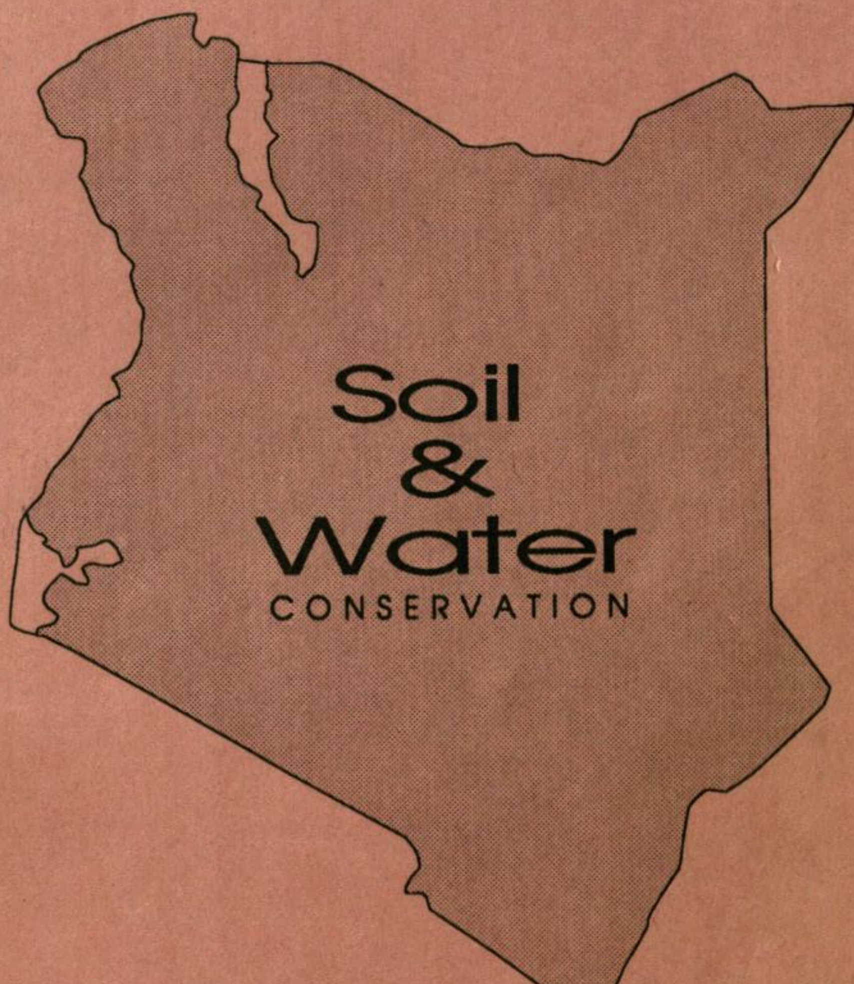
Plan of Operation 1989/90 - 1991/92

Soil & Water Conservation Project (SIDA)



Ministry of Agriculture
Agriculture Engineering Division
Soil & Water Conservation Branch
P.O. Box:30028
NAIROBI

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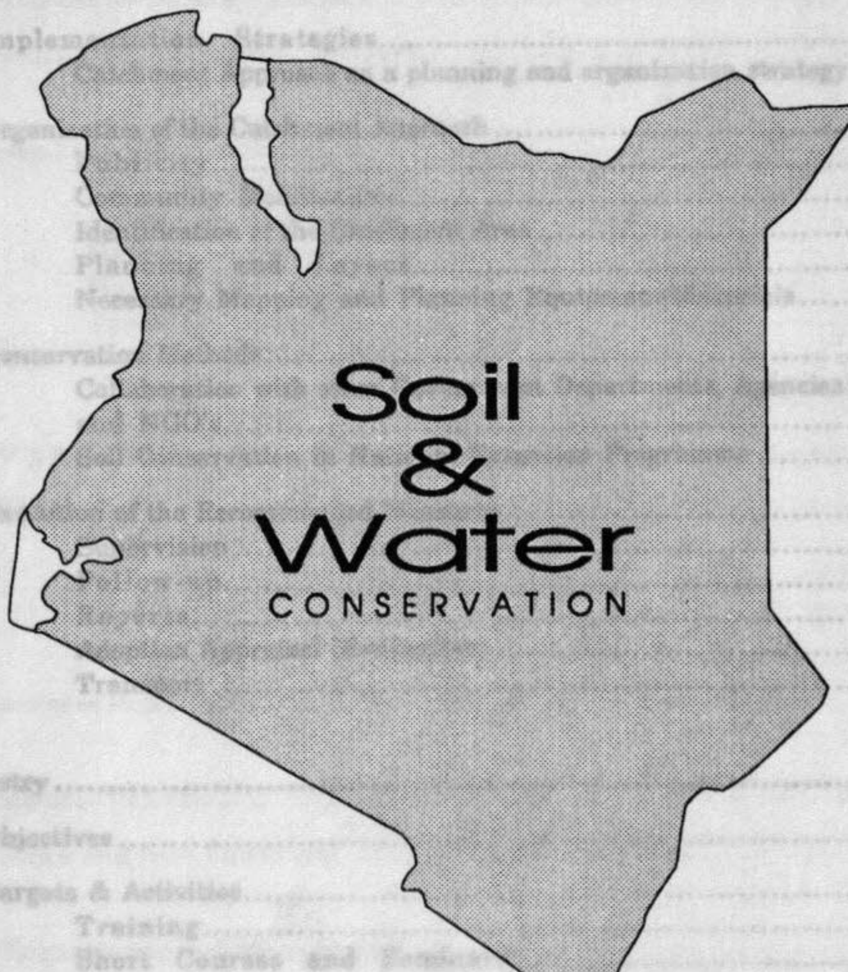

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planning purposes. The Divisional Soil Conservation Officer will work out the conservation plan considering all the available data and the existing physical features, infrastructures and existing conservation structures.The two TAs will be used to lay out the lines for the proposed conservation measures. This team will work closely with the local general extension TA for closer co-ordination. The extension TA operating in the area will supervise the farmers implementing the recommended conservation measures and offer advisory services on construction and maintenance details.

The Divisional Soil Conservation Officer will make regular follow-ups to ensure the correct implementation of the plan. Regular follow-ups will also give a good opportunity for the Divisional SCO to assess the adoption rate and make the necessary adjustment of the plan.

Necessary Mapping and Planning Equipment/Materials

Since the launching of the catchment planning strategy the need to use simple mapping and planning equipments has been emphasized. A lot of these equipments have already been issued to districts and divisions and the project will only top up the requirements. The project will however develop simple and rapid methods of assessing an area for planning purposes. It will not be necessary to produce elaborate maps.

CONSERVATION METHODS

To supplement physical construction methods the project is already giving emphasis to biological and cultural methods. In future a combination of structural, biological and cultural conservation methods will be recommended and farmers will be permitted to choose what is acceptable or feasible under their specific circumstances. A combination of two or more methods will be encourage. According to the Mid-Term Review Report on National Extension Project, (NEP) July 1988, the mission found that the impact of NEP on farming practices has been very favourable. The report further indicates that such practices as intercropping of maize and beans and application of fertilizers and manure, have been very successfully adopted by small scale farmers, and plant populations have generally improved. These contribute to conservation.

The planting of multipurpose vegetative material e.g. grass strips for fodder, fruit trees on stabilizing terrace banks will be actively promoted.

Collaboration with other Government Departments, Agencies and NGO's

The project will continue to work closely with other Government departments/agencies and non-governmental organizations (NGOs). Already there are strong links and regular consultations with the Permanent Presidential Commission on Soil Conservation and Afforestation (PPCSCA) who also participate regularly in our training programmes and field exercises with farmers. The local administration in each area (chiefs and their assistants) help in calling and organizing farmers' meetings (barazas) as well as in chairing conservation committees at location and sub-location levels.

The Forest and Prisons departments have been useful sources of fruit and forest tree seedlings. Our staff are being trained by the Forest Department in forest tree seedling production. The project will also work with NGOs, through the Association of Kenya Non-Governmental Organizations (KENGO) to produce more reading and teaching materials. Already the initial collaboration with KENGO resulted in production of calendars which have been distributed to schools. A number of meetings have already been held with representatives of Ministry of Education, the Kenya Institute of Education and a number of teachers' colleges as first steps towards giving conservation increased weight in the curriculum for schools and colleges and generally to develop strategies for effective teaching of conservation at various levels.

The project has also made contacts with research establishment (Kenya Agricultural Institutes) to start to develop linkages that will enable the SWCB to tap useful information and to channel problems to the institute for research or investigation. Similarly, there will be interactions with the local universities(particularly for training) and other bodies with interests in land use.

Soil Conservation in National Extension Programme

By developing a land husbandry approach through the increased application of biological and cultural methods, soil conservation activities will be a year round activity among the rural community. There will be a relevant extension message to be passed to farmers at any given season throughout the year. e.g.

Season	Possible extension messages/activity
Land preparation	- promote unploughed strips; - plough across the slope; - give the river banks adequate reserve;
Planting	- adequate plant population; - intercropping; - application of fertilizer and manures; - selection of good seed; - plant across the slope - consider mulching;
Weeding	- weed across the slope;
Harvesting	- conserve the dead materials for trashlines, and for incorporation as organic matter.

The SWC Branch in collaboration with Extension and Crops Divisions of the Ministry of Agriculture, and the relevant sections of Ministries of Livestock Development and Natural Resources will develop technical messages required for all agro ecological zones of each district. These technical messages will be incorporated in the district extension programme calendar and made available to the extension TA through regular workshops. A lot of these technical messages have been developed during recent workshops and training sessions attended by the soil conservation subject matter specialists at provincial, district and division levels.

Our Divisional Soil Conservation Officer will ensure that each TA in the division is capable and competent in giving the correct messages and guidance on the implementation of the recommended measures. District training sessions will be organized to improve the skill and knowledge of the divisional and location staff.

EXECUTION OF THE RECOMMENDED MEASURES

The execution of the recommended conservation measures will be the responsibility of the land user. The Ministry of Agriculture staff will assist in planning and layout of lines for the proposed soil conservation measures as well as give the necessary technical advice on the actual work, which will be left to the individual farmers. Common measures or those beyond the ability of farmers, such as large gullies, major cut-off drains or rehabilitation of large badly eroded areas will be handled by the affected community. Such organized communities will receive the necessary construction tools and technical advice from the local agricultural staff. Mobilization of the community will be a joint effort between the Ministry staff, local administration, catchment committee and local leaders.

Supervision

Our Divisional planning team will continually be involved in planning and layout of the conservation measures. The supervision of implementation of such proposed conservation structures will be the responsibility of general extension TA. Any difficult issues will be referred to the Division SCO. Social issues will be discussed and agreed upon by the community through their elected catchment committees.

Follow-up

The Divisional and District Soil Conservation Officers will make regular follow-up of the catchment area to monitor, evaluate and assess the adoption rate and to ensure the correct design of various conservation measures in the area. The Provincial and Headquarter staff will make field visits to appraise the adoption rate and give the front line staff the necessary technical advice. These visits will enable the Provincial and Headquarter officers to understand social and technical issues and hence the need for modification of approach or procurements of necessary facilities for faster implementation of the measures.

Reports

Regular monthly progress reports on the implementation of the programme will be made by the Division SCO as well as the District SCO. The Districts will report to PDA with a copy to Headquarters (Head: Soil & Water Conservation Branch). The provincial reports to H:S&WCB will be quarterly, half yearly and annually. These reports will be a necessary channel for two way communications. The reports will enable the headquarters to monitor implementation and to effect any changes. The reports will also enable the Headquarters to draw a more realistic plan for support to the Districts and Provinces.

Adoption Appraisal (Evaluation)

The Division SCO will make regular progress and adoption appraisal reports on the project activities in the division. These progress reports will be made at all stages of implementation i.e. organization and publicity stage, planning stage and execution of measures. The district soil conservation officer will ensure that such appraisal reports are submitted to Provincial Headquarters regularly.

The appraisal reports should highlight the effectiveness of the recommended measures in a specific catchment area, and the community attitude and perception to these measures. When necessary, the Headquarters will initiate specific evaluation studies in selected areas.

Transport

All the project districts will be strengthened with transport facilities for project activities by the end of the 1986/87 - 1988/89 period. The divisions will have at least a motor cycle for the division soil conservation officer. In this phase (1989-92) of the project we shall require to replace a few vehicles which are too old to maintain. Motor cycles supplied in 1986 will require replacement. In addition there will be a need to procure more motor cycles to cater for additional divisions and also replacing the grounded motor cycles.

Supporting Activities to Extension

Training the farmer

The main objective of extension is educating the farmer for adoption of new skills and better management of farm innovations. This will be achieved through:

- field days and on farm demonstrations;
- educational tours to areas of adequate conservation;
- group meetings with farmers to discuss conservation activities
- residential training courses .
- farmer training within National Extension Programme.

Motivation of Farmers

Farmers will be motivated to carry out soil conservation works through:

- increased yields through over-all better farming methods in addition to conservation.
- competition on best conserved farms (for the farmer to earn recognition and praise). Small awards will be made available;
- involvement of farmers in choosing their own catchments;
- encouragement of farmers to select their catchment conservation committees;
- field days, tours and demonstrations.

Use of Opinion Leaders

Influential people in the community will be used as far as possible to lead the others in adoption and implementing recommended measures. Local leaders, politicians, councillors, KANU leaders, church-elders, teachers and other community leaders will be given opportunity to attend short training courses with the aim of influencing their local farmers.

AGROFORESTRY

This section has been in existence for about seven years. People over the years have undergirded growing of trees with production of the crops deliberately or otherwise. The role of soil and water conservation Branch is actually to strengthen the already existing activities related to tree planting, and more precisely to reach the farmers with relevant technical information pertaining to good management of the already existing trees and introduce alternative tree species known or unknown by the farmers and which have been known to have better performance.

In the past the Branch has concentrated its efforts in production of planting materials and this has been accompanied by training of Nursery workers, group representatives as well as other government departments in order to import technical know-how in production of seedlings.

In 1988, the Branch expanded its activities in alleviating the problem of lack of seedlings by assisting materially an average of 10 groups per district to raise seedlings.It is the task of the Branch to see that farmers adopt Agroforestry as a part of total land use.

OBJECTIVES

The objective of the agroforestry programme is to promote wider adoption of trees and other vegetative materials firstly as measures against soil erosion, but also as a way of enhancing farm productivity through increased output of woodfuel, building materials, fodder trees, as well as better soil fertility from nitrogen fixing species. The agroforestry practices will be diversified by including species selection and emphasis on multipurpose trees. This will involve developing:

- Tree/crop interventions suited to specific areas.
- Integrated Agroforestry in various land use systems.

In order to achieve the objectives stated, strategies for extension, training and other infrastructures related to agroforestry must be strengthened and streamlined, through a programme to be drawn by SWC Branch working with Ministry of Natural Resources and with outside assistance where necessary.

The goals for implementation by the S&WCB are the following:

- Collaboration with Agroforestry Researchers and translating the findings into an extension package.for promotion through the National Extension Programme.
- Strengthening training and extension services from the Headquarters down to the frontline extension staff and finally to farmers and schools as the main target groups.
- Dissemination of Agroforestry knowledge to the farmers with respect to choice of species and management through training.

- Production of tree seedlings from the central nurseries as well as from group nurseries.
- Increased production of timber, fruits and other tree products and Improved standard of living for farmers through
- Improved soil fertility, through nutrient re-cycling from woody perennials, thus minimizing the use of external farm inputs such as fertilizers.

TARGETS & ACTIVITIES

Activities

The major activities in Agroforestry programme will include;

- Training
- Extension.
- Production.

Training

In training there will be greater collaboration with Government Departments and NGOs for resource materials for use by the Branch. Already a consultant is working on a resource book for extension, under contract with RSCU.

The final target groups are:

- small scale farmers
- extension staff
- self-help groups
- schools

Short Courses and Seminars

Orientation Courses

The District and Provincial subject matter specialists (Soil Conservation Officers/Horticultural Officers) will be given technical courses in Agroforestry. This course will be handled by the Headquarters and also drawing from expertise from other agencies.

Professional Groups

These will be seminars organized on provincial basis and participants will include officers dealing with soil conservation, horticulture and crops at District and Divisional levels. The purpose will be to refine messages for extension by the Technical Assistants.

The objectives of these seminars are:

- Adopt recommendations for proper agroforestry methodologies to fit specific areas.
- To discuss policy issues.

- Strengthen the implementation of Agroforestry.
- To train District Agriculture staff in Agroforestry and enable them to pass the knowledge to the front-line staff.

The seminars will be organized by PDA/PSCO in conjunction with Headquarters. The resource persons will be drawn from those in Agroforestry field from other Government Departments with the Headquarters assisting in teaching and providing training materials.

District Courses

The courses will be conducted by the District staff for the TAs/JTAs that are in constant touch with the farmers. The staff will be trained on technical skills and knowledge with regard to Agroforestry for dissemination to the farmers.

Formal Training

In the past Agroforestry has been difficult to implement because there are no professionals specifically trained in the discipline in the Ministry. However, there are agriculturalists who are involved in its implementation. Training of such officers therefore needs to be done so as improve their skills.

This training is also required because these officers will serve as trainers for extension staff. It is planned that formal training be organized as follows:

Staff at the Headquarters charged with development of technical packages and training for Agroforestry are offered fellowship for MSc. agroforestry/forestry management or any advanced training of a non-degree type.

In-service training and attachment for a period of 3 to 6 months will be done at ICRAF for extension staff.

Training outside the Country

Courses of short or long duration will be given abroad or locally depending on whether or not such training is available locally. At present very few training chances exist within the country basically because the Institutions within have no such specialized training, except for ICRAF which also avails very limited vacancies.

Nursery Management Courses

These courses will be organized by the PSCO/DSCO and will be designed for nursery attendants, group members, individual farmers and staff from other Ministries to improve on their skill especially with regard to fruit tree propagation.

SUMMARY OF TRAINING IN AGROFORESTRY

Name of Course	Target Group	Objectives	Organizers
National Seminar	S.C.O., C.O, H.C.O	Technical& Refresh formal Practical Approach.	Headquarters

Provincial Seminar	DSCO, DCO, DHCO Divisional SCO	Technical, to enable organization of training on District level	HQ's, Provincial staff and other organization
District Courses	TA's & JTA's	Impart Technical information with regard to Agroforestry	PSCO / DSCO & other trainers
Teachers Courses	Secondary schools	Technical information on Agroforestry	PSCO / DSCO & other trainers

Extension in Agroforestry

This is an activity the Branch will take up more actively than in the past. It is appreciated that the farmers are already planting trees and managing them on their own Therefore the task of the Branch in co-operation with RAED (Rural Afforestation and Extension Department) will be to develop local strategies for tree growing that would be relevant for soil conservation.

In extension the aim will be to achieve increased tree growing for the following:

- a more diversified production.
- high economic returns from farming.
- a more sustain-able land use.

The strategies that will be adopted for extension will be as under:

- Incorporation of technical information on agroforestry into the existing National Extension Programme, by ensuring effective dissemination of research findings to the grass-root level.
- Liaising and coordination with other Governmental and Non-Governmental organizations engaged in Agroforestry Research and Extension in order to derive maximum collaboration in implementation activities.
- Support and establishment of necessary infrastructure for Agroforestry such as:

  1. Nurseries and selected groups for propagation of desirable species.
  2. Seed collection, storage and distribution to the nurseries.

- Preparation of Agroforestry manuals, posters, pamphlets.
- Demonstrations for nursery operations and mother orchard establishment in the nurseries run by the Ministry.
- Field days and tours (farmers).

PRODUCTION

Central Nurseries

The Ministry will continue to run at least one central nursery in every district in order to provide tree seedlings for soil conservation and agroforestry purposes.

Over the next three years will be managed as at present, with less emphasis on production but more towards training. The intention is to have at least one nursery per district for the following purposes:

- Training and extension of self-help groups and individuals in all aspects regarding propagation of tree-seedlings and nursery management
- Production and distribution of healthy and high quality mother trees.
- Production and distribution of propagation material as scions, budwood, seeds and cuttings
- Demonstration of management and use of various tree species suitable for agroforestry in the area
- Production of treeseedlings for soil conservation and agroforestry purposes.

The service given by the central nurseries will be available to self-help groups and individuals involved in tree seedling production.

Group Nurseries

The bulk of the planting materials for each District will be produced through nurseries owned and managed by groups of farmers. Each district will have ten assisted nurseries, each receiving polythene bags, hand tools and seeds that are difficult to get in their local areas.

- The assisted nurseries must have experience in raising tree seedlings
- The available nursery site must meet conditions necessary for any nursery establishment (eg. access to water throughout the year)
- Assisted nurseries should be well distributed in the area in that seedlings are produced near the farmers.
- The assisted nurseries have to submit reports twice a year indicating the number of seedlings distributed and their distribution policy
- Groups assisted by other governmental or non-governmental organizations are not qualified for assistance by the S&WCB.

Assistance to selected Group Nurseries

- Training and extension through the Central nurseries.
- Seeds, motherplants, budding and grafting material.
- Inputs not locally available as: polybags, polytubes, budding knives etc

Practical training will be continued and group representatives as well as individuals will be among the participants together with nursery staff. The training will be modified to suit the needs of the nurseries and will last one week. The training is to be carried out by the Districts and Provinces.

Reports

Selected group nurseries have to report twice a year on their activities.

Recording should include the following aspects:

- Inventory of seedlings before long and short rains
- Number of collected seedlings from the nurseries
- Number of members in the group

The information above to be submitted to the DAO for inclusion in the semi-annual and annual reports as at 31st December and 30th June respectively

Cooperation with GK Prison

The cooperation with the Ministry of Home Affairs GK Prisons will be continued as in the past.Through this cooperation additional number of seedlings are raised to supplement the ones produced in MoA nurseries.The GK Prison nurseries are supposed to produce:

Citrus, Mango, Avocado, Pawpaws, assorted fruittrees (Passion fruits, loquats, guavas etc.)

For Prisons located in areas suitable for temperate fruits like Kamiti, Kisii, Nyeri and Eldoret instead of Mango and Citrus, such temperate fruits as apples, pears and plums may be propagated.

Therefore their production targets could be geared towards producing:

Apples, Avocados, Pears, Pawpaws(mountain type), Plums, Assorted fruits like passion fruits, loquats etc.

Inputs like seeds, nursery tools, polybags and chemicals are to be provided by the MoA. The seedlings produced will be distributed by the DAO.

The central nurseries run by the Ministry will make quarterly reports to the Headquarters. The present format will be re-designed to accommodate the additional information required as:

- inventory of seedlings in seedbed
- inventory of seedlings ready for distribution
- number of seedlings distributed.

all the information has to be submited for the different species.

Time Schedule

Schedule of activities will have to be synchronized with soil conservation activities such that as maintenance of soil conservation structures is done, Agroforestry activities will have to be incorporated.

A. S. A. L.

INTRODUCTION

The arid and semi-arid lands (ASAL) are defined as those areas that have an average annual rainfall over the average annual potential evaporation (E) of less than 40%. These areas cover about 47.3 million hectares of the total country area which is about 56.7 million hectares.

These zones are of particular interest for an A.S.A.L. Programme on resources conservation and agricultural development because these are the areas that have the most fragile and unstable environment and high potential for degradation. It is also in these same areas that high migration of people is expected in the coming years.

These areas have major constraints that must be overcome before meaningful development can take place. The constraints are :

- **Environmental limitations:** Limited and erratic rainfall makes the present crop and animal production system marginal and risky in these areas at the present level of technology. The soils are generally shallow and infertile. This results to inadequate food and fodder production to feed the human and livestock population.
- **Limited and unadapted technology:** Kenya's research programmes have in the past focussed on the high potential areas. The plant varieties, farming systems, water and conservation technologies, needed for full productive use of these ASAL areas have not been fully developed or adapted for Kenya. This is a major limiting factor on production in the A.S.A.L. areas.
- **Population and migration constraints:** The land potential and water endowments and their distribution are not able to support the increasing population at certain critical times. The problem is further compounded by immigration from the higher potential areas with people bringing farming systems suitable for the areas they come from but which are potentially destructive to the fragile environment of the A.S.A.L. areas.
- **Infrastructural development:** Public infrastructure like communication networks, health and educational facilities etc. are poorly developed.

OBJECTIVES

To be able to provide a focal point for development of technology necessary for ASAL development especially on resources conservation for all the projects in the A.S.A.L. having soil and water conservation as a component and to plan for new programmes the Ministry of Agriculture has started an A.S.A.L. Section within the Soil and Water Conservation Branch. This section will have the following functions:

- Initiate and implement a resource conservation and agricultural development programme in selected ASAL areas.
- In conjunction with research establishments and local universities, develop soil and water conservation strategies that support sustain-able resources conservation and utilization for agricultural development in the A.S.A.L.

areas. Attempts will be made to promote land use systems consistent with the basic soil and water resources capabilities of these areas.

- To gather and disseminate relevant technologies from different projects and research establishments to ensure access to available techniques by all projects.
- To carry out appropriate on-farm trials of technologies developed by research stations to ascertain their applicability and likely wide adoption in the A.S.A.L areas.

STRATEGY FOR IMPLEMENTATION

There are already several area-based soil and water conservation programmes in the country all attempting to develop their areas of concentration with special emphasis on environmental conservation. The MoA - ASAL programme will increase the pace of conservation in the ASAL area as well as provide liaison for the other programmes. To be able to achieve this the following strategy will be followed:

Initiation and Backstopping

In the next three year period the main effort will be directed at the development of a well defined conservation programme for the ASALs. This programme will include the elements detailed below with necessary modifications after the planned consultations with experts from Universities and elsewhere.

A core of multi-disciplinary senior staff (agricultural engineer, agronomist, agricultural economist and rural sociologist) will be posted at the S&WCB Headquarters. This section will continuously have backstopping services from identified universities both local and international and from research institutes.

Selection of priority areas and implementation

It is envisaged that the programme will start implementation from a few districts (10 in 1989/90) and progressively cover all the districts of the country with arid and semi-arid conditions within a few years. At the same time a lot of efforts will be put into adaptive research and on-farm trials on technologies considered of relevance to the ASAL areas using universities and research institutes.

The ASAL conservation programme will be seen as an extension of the existing soil and water conservation activities in the high potential areas to the arid and semi-arid regions.

Priority for implementation will be mainly on:

- Areas with high density of population where inappropriate farming systems are practised posing a threat to soil and water resources. This is especially so where former large scale farms have been sub-divided into small plots with little consideration for existing conservation measures especially in agro-ecological zone 4.
- Areas where people are settling from the high potential areas and bringing with them technology that is not suitable for these areas. These are characterized by settling in former ranches in zone 5.
- In areas where there are no other programmes dealing with environmental control.

- Specific areas that are considered to be important requiring urgent conservation.

- It is expected that the initial thrust of the programme will be in the agro-ecological zone 4 and parts of 5 and moving on to cover the rest of zones 5 and 6.

Consultancies

Some of the activities to be undertaken will require short-term consultancies from time to time. This is because services offered from the universities and research establishment might be restricted due to unavailability of time or necessary personnel. Examples are as in water harvesting or in the required socio-economic studies for specific areas, or other studies and technical inputs needed from time to time.

PROPOSED ACTIVITIES

The ASAL areas are characterized by fast growing population of both people and livestock resulting to environmental degradation, chronic food shortages (due to the inadequate amounts of rainfall), poor technology base, inadequate water supply,whereby water is quite abundant during the rains but is in very short supply soon after the rains.Due to the low income both from crops and livestock, there is a general lack of capital to invest in agriculture and in environment conservation .The ASAL Programme will hence address itself to the following technological areas to attempt to alleviate the problems:

Soil conservation

- To recommend suitable physical and cultural methods of soil conservation for the ASAL areas.The recommended measures should take into consideration the local soil and rainfall conditions,the slope of the land and the farmers' capabilities.

- In conjunction with research establishments to be involved in studies related to predicting soil losses in the ASAL areas, evaluating results of conservation efforts in order to recommend realistic soil conservation packages.

Water conservation

Since water is limiting in these areas the objectives will be to encourage practices that conserve water *in situ* in the soil profile and to promote use of different types of measures. The following will be addressed:

- Investigate possibilities of water harvesting for crops, fodder or trees growth.

- Construction and renovation of water retention reservoirs e.g.sand and earth dams,springs,ground tanks etc. where applicable with the beneficiaries contributing much of the labour required and accepting to take over the maintenance of structures on completion.

- Assist to ensure that already existing water structures retain water for longer duration by rehabilitation,instituting soil conservation measures,working out better withdrawal system etc.

- Training of local people in techniques for construction and maintenance of water structures.

Crop production and tillage

- To set up on- farm trials to verify the superiority of improved practises and crop varieties recommended from the research stations to ascertain performance in specific
- To ensure availability of appropriate seeds oft the ASAL areas by bulking if necessary through other established Government Programmes.
- Advocate and intensify the campaign on use of manures.
- To evaluate work already undertaken by various organizations with the objective of recommending a package of tillage practices and tillage equipments for the ASAL areas.
- In liaison with the Kenya Forestry Research Institute(KEFRI),Forestry Department, and other relevant organizations recommend and promote establishment of beneficial shrubs, bushes and tree species suitable for the ASAL areas.

Livestock and grazing improvement

The economy of the ASAL will continue for a long time to depend on livestock and this must be borne in mind right from the onset. Hence introduction of more yielding and adaptable breeds of livestock to these areas and organized markets are seen as important long term strategies for the Ministry of Livestock Development in these areas. The change from keeping of the large stock (cattle) to keeping small stock (goats and sheep) has been advocated in certain dry areas especially where the land size per family is rather small.This issue also needs to be looked into by the Ministry of Livestock Development. The ASAL programme will together with the Ministry of Livestock Development be more directly involved in grazing improvement through:

- pasture improvement techniques
- introduction of appropriate fodders
- promotion of conservation of fodder for dry seasons
- increased productivity of dry woodlands
- rehabilitation of degraded grazing lands

Training

To be executed as part of the general activity training for the Branch.

Community participation

In the ASAL areas, as in the high potential areas, it will be necessary to involve the communities in the phases of project identification, planning and implementation. This is especially so that they identify fully with the project and sustain-ability is guarantied. In this connection much of the inputs including labour and required materials will be provided by the farmers.

Crop production

Poor availability of early maturing high yielding seeds for the ASAL areas is due to lack of a comprehensive commercial supply scheme. Apart from such food crops as beans and maize, other seeds like sorghum, millets, cowpeas, pigeon peas etc. are not available commercially. The programme will facilitate bulking of these suitable seeds for distribution to the farmers at a cost. This could be by direct production through the district set up or by purchase from other projects carrying out bulking of these seeds.

Group nurseries and seedlings distribution

In the arid and semi-arid areas trees and shrubs are considered to be important in providing fodder for livestock, for reducing soil erosion from wind and water and for soil improvement as well as providing fuel wood. The programme in conjunction with the agroforestry section will assist groups to start their own nurseries by giving necessary inputs, the programme will also encourage direct seeding techniques to the farmers.

Water conservation

Many farmers/pastoralists in these areas, are very keen to be involved in water development activities. The programme will hence be involved in these activities. The involvement will be mainly in small community water structures where farmers will participate in either construction and/or in maintenance. Large water development schemes are the responsibility of the Ministry of Water Development(MoWD). There might however be instances where cooperation with Ministry of Water Development will be necessary, for instance where they have constructed earth dams and soil conservation measures are necessary to reduce siltation.

Specifically the programme will be involved in sub-surface dams, small earth dams, spring development, water tanks.

Grazing improvement and land reclamation

There are many denuded areas in the ASAL areas which are not productive and which could be used for production of crops, grasses and other forage for livestock.The programme in conjunction with the Ministry of Livestock Development will endeavour to encourage reclamation of denuded areas by providing seeds of suitable grass species which will be collected locally. In this connection a request has been made to the Ministry of Livestock Development to second a range ecologist to the section.

Research priorities

The programme will continuously identify social and technical areas requiring investigation by the universities and the research establishments. Proper research packages will then be agreed on and the task will then be given to the research establishments to execute. It is proposed that basic and adaptive research be left to the research stations to carry out, but the on-farm trials should be carried out by the field staff. The main areas of research will be in:

- water harvesting;
- evaluation/development of appropriate tillage practices and equipment;
- evaluation and adaptation of present soil conservation techniques;
- socio-economic aspects related to adaptation of new innovations/techniques.

Staffing

The Headquarters will be strengthened with four officers, However, where these officers are not immediately available use will be made of staff in other sections of the Ministry or in other Departments of the Government, or from outside organizations.

At the field level it is expected that the ASAL activities will be implemented by the already existing staff, who will be. It will be necessary in some cases to redeploy some field staff where necessary to ensure better coverage in the ASAL areas.

Proposed Budget

The figures in the budget summary are detailed only for the first year and more brief for the next two years. More specific budget figures will be worked out later and discussed during the yearly workplan discussions.

TRAINING

OBJECTIVES

The goal for the training programme is to reach the majority of our farmers by soil conservation messages which can lead to increased and sustain-able production. The messages will be conveyed in such a form that the farmer will accept them and apply them on his farm.

Target Groups

In order to effectively convey the soil conservation messages to the farmers all levels of civil servants and leaders in contact with the farmers have to be informed and trained on soil conservation. The project aims to reach approximately 10,000 people per year (civil servants, local leaders and party members) with different courses within this category per year.

Further the programme will drastically increase its focus on the youth in primary and secondary schools in order to assure sound environmental conservation practices for the future. To reach these students with soil conservation messages we must consider activities reaching about 3 million people yearly.

Last, but not least more than one million farmers shall continue to get information about soil conservation every year through the national extension system, out of these about 150,000 will be specially trained during farmers field days.

Strategy to reach the target groups

The strategy for the training programme will mainly encompass seven areas namely:

- **Formal upgrading for agricultural staff(to Diploma, B.Sc. and MSc.);**
- **Short courses for agricultural staff;**
- **Short courses for other civil servants and leaders;**
- **Training of farmers;**
- **Primary and secondary schools (revision of syllabuses):**
- **Production of training material;**
- **Purchase and development of training equipment.**

There is need to upgrade soil conservation staff within the Ministry. This will be achieved by sending a few officers for further studies in a **formal training programme.** This will encompass all levels from Master of Science courses to short upgrading courses.

Further, short **courses and seminars** for agricultural staff will continue at a slightly increased level compared to the past. Due to the relatively large turnover of the soil conservation officers more training of the staff must be continued. Headquarters will concentrate on officers who are mainly dealing with soil conservation and continue to decentralize training of other agricultural staff to provinces and districts. New courses, with the aim to increase not only the technical skills but also communication and extension capacity among the soil conservation officers will be introduced.

Training for other civil servants, like officers from other ministries, administration and leaders at different levels will be continued at approximately the same rate as before. The duration of the courses will be slightly extended.

Farmers training will be executed through residential courses, field days demonstrations, and tours.

The majority of the farmers are however expected to get new ideas, and learn about soil conservation within the national extension programme.

A drastic change will take place within the **school approach programme.** Instead of focusing on a few selected schools in some districts, we will now spread out our activities to all primary and secondary schools in Kenya. The Ministry of Education will execute this activity with back-up from the Soil and Water Conservation Branch. Firstly, we will have a close look into and eventually review the curriculum concerned with soil conservation in primary and secondary schools and teachers colleges. Secondly, a diversified training package for the teachers will be worked out and applied in order to make them better prepared to teach soil conservation in the schools. Thirdly, in cooperation with the Ministry of Education diversified teaching material in soil conservation will be produced to be used by teachers and students. Lastly, the schools will also receive assistance in form of equipment, teaching material etc.

Initial contacts with Ministry of Education have already been made and a number of meetings have taken place involving the Branch, MoE, teachers colleges and the Kenya Institute of Education.

Production of training materials will continue and be increased. More specific material for different target groups should be developed. Some of the old training material will be revised.

Finally in order to make the training more interesting and effective there will be need to purchase and develop some **teaching equipment,** like films, slides, projectors etc.

Formal Training

In order to develop high level expertise among the soil conservation staff and also to develop capacity to conduct high level on-the-job training there is need to offer staff actively involved in soil conservation, opportunities for further education. This possibility will also serve as a tool to boost the morale among dedicated and gifted field staff.

The formal training programme will give some soil conservation officers at AO level possibility for a Master of Science Course (2 years). Further for the same category the one year post graduate diploma will be reintroduced. TOs will have the opportunities for Bachelor of Science Degree (3 years) and TAs can be selected for a Diploma course (3 years)

The proposed plan for the formal training is shown in Table 1 and will take care of all the formal training needs for soil conservation including Agroforestry and ASAL.

Table 1
Formal Training

Location/Duration	Number of students/Year 1988/89	1989/90	1990/91	1991/92
Master of Science	5	7	7	6
Post graduate diploma	-	5	5	5
Bachelor of Science	11	11	16	10
Diploma - Agriculture Engineering	-	5	10	15
Total no. of candidates	**16**	**28**	**38**	**37**

Short Courses

Soil conservation officers can enrich their experience and knowledge in soil conservation by short courses. They must also develop their understanding in community leadership and mobilization skills, project management, elementary accounting and rural development which also can be done through short courses. Hopefully these courses also can serve as a way to promote good serving officers, hence also stimulating the moral among the staff.

Officers should be trained in the following fields:

- Land use Planning and Design of soil conservation structures;
- Extension, communication and Training Methodology;
- Project Development and Management;
- Rural Development and Community mobilization;
- Elementary Accounting and Management;
- Agroforestry. etc.

Suitable venues and courses within these fields can be identified in Kenya, on the African continent and Overseas. Table 2 shows the proposed plan for short courses during the project period. It also includes the needs of the ASAL and Agroforestry sections. Courses outside Kenya are meant for senior staff. Costs are shown in table (2)

Table 2
short courses

Location/Duration	Number of candidates/Year 1989/90	1990/91	1991/92
Kenya (3 months)	20	20	20
ICRAF (6 months)	2	2	2
Africa (6 weeks)	4	4	4
Overseas (4-6 weeks)	4	4	4
Total no. of candidates	28	28	28

Study trips abroad

Study trips to other countries for hardworking and dedicated staff members have been a good incentive to boost the morale among the officers. Many good ideas have also been picked up from these trips and applied in practical work. Therefore this component of the training programme should continue .

It is suggested that about 68 hardworking officers per year should be given the opportunity for a study trip. The proposed countries to be visited have been selected in such a way that they will offer all aspects of Soil and Water Conservation including Agroforestry. See the appendix for details.

Inservice Training

This form of training can be divided into two categories:

- For Agricultural staff, organized through S&WCB headquarters, Provinces and Districts; and
- Other Civil Servants and leaders organized through Provinces and Districts.

Training of trainers

This course has the objective to make PSCOs, DSCOs and some selected Divisional Soil Conservation Officers better trainers. The course is of 2 weeks duration and the topics mainly deal with communication skills,production of training material, curriculum and course organization. The officers are given opportunities to strengthen the skills through practicals.

This course is one of the most important steps in the decentralization of the training, and it is organized by headquarters. Resource persons for the course will be drawn from the Regional Soil Conservation Unit and other suitable institutions.

National Seminars, (General Soil Conservation)

The objective for these courses is to give soil conservation and extension officers confidence in soil conservation techniques and introduce them to policy matters. The primary target groups are soil conservation officers and extension officers down to divisional and locational level. Participants are also drawn from other countries in the East African Region and a few participants can be from NGOs, research organizations etc. The course is practical oriented and is organized through headquarters.

National Seminar, Agroforestry

The objective for this course is to increase the extension staffs skills in the subject of Agroforestry. The target groups will be soil conservation and crops officers on provincial and district level. This seminar will be of one week duration, to be organized by SWCB with assistance from outside consultants.

National Seminar, ASAL

With the dry areas, there will be a need to train senior staff in dryland techniques, DAOs, Soil Conservation Officers, Range Officers etc. in the concerned districts will be trained during two weeks in courses organized by headquarters.

Soil Conservation Officers Retraining

These courses have earlier been organized through headquarters. covering topics like correction of mistakes in the field, development of T&V messages in soil conservation and catchment planning.

The target group has been all soil conservation officers.

In an effort towards making the soil conservation officers more competent and skilled, these courses will be given increased importance. However, in line with the continuing decentralization we intend to give the provinces the responsibility to organize these courses. It is however expected that headquarters have to give considerable backing to these courses during the first one year. This training by provinces will be strengthened through setting aside funds for consultancy services for planning and implementation. Later will headquarters will mainly assist through support in lectures development of curriculum or to teach certain key topics.

These courses will be a step by step programme in a full training package which all soil conservation officers shall undergo. Within a three year period the packages will involve the following blocks, each of about two weeks duration.

Block 1.	General soil conservation techniques and polices (The present national seminars/Headquarters level).
Block 2.	Design of physical soil conservation structures.
Block 3.	Catchment planning, development of T&V messages, correction of technical mistakes(the latest is an existing course)
Block 4.	Agroforestry, Biological Soil Conservation Measures.
Block 5.	Communication skills, Training of trainers.(the existing "Training of Trainers")
Block 6.	Project Development and Management, Monitoring and Evaluation, Accounting (for some officers) Rapid Rural Appraisal.

Provincial seminar, Soil Conservation

The objectives for these courses are to give the general agricultural extension staff a reasonable knowledge about soil conservation techniques and policies. The target group for these seminars are all Agricultural Officers except soil conservation officers, and some extension officers, crops officers, home economics officers, marketing officers and others.

The duration of the course should be about one week and the organization is the responsibility of the Province.

Provincial Seminar, Agroforestry

With the start of the Agroforestry Programme special provincial seminars for this subject will be organized. The target group for these seminars will be restricted to Soil Conservation Officers, crops officers and Horticultural officers. These courses will be incorporated under block 4. The provinces will organize the courses but the teaching will be done by experts from the Hqs and specialized Agencies.

TAs - Course

The objective for these course sis to give new TAs a practical approach and confidence in soil conservation techniques, and also introduce them policy matters, work organization and extension techniques.

The duration of the seminars will be two weeks. The responsibility for the organization and implementation of this course is under the District.

TAs Course, ASAL

With the start up of the ASAL programme, TAs working in the project areas will be specially trained on techniques for drylands during 2 weeks. It is estimated that these courses will be started up from the financial year 1990/91.

TAs - Retraining

The objective of this course is to tune the TA in soil conservation when he has about one years working experience after the basic course. Common mistakes and weaknesses shall be corrected and exchange of ideas and experiences be stimulated.

New subjects like communication skills, community mobilization, project monitoring will be introduced. With the introduction of the Agroforestry programme, Agroforestry will be a main subject within many of these seminars (course A.13).

It is important that these courses are very practical oriented with exercises mainly conducted in real working situations in farms and catchments.

The organization and implementation of these courses is the responsibility of the district.

Nursery Course

Some special courses for the MoA nursery staff, group nursery, members, and nursery staff from other ministries in nursery management will be introduced through the agroforestry section.

Rapid Rural Appraisal

This course will be introduced to equip the soil conservation offices with techniques of diagnosing erosion problem and finding quick solutions.

Courses for Civil Servants, and Leaders

Courses for Government Officers

The objective for these courses is to:

- clarify policy matters related to soil and water conservation;

- stimulate and enhance interministerial collaboration;
- mobilize key persons for the soil conservation programme (catchment approach);

The participants will to be introduced to soil conservation techniques and fruitful discussions on key issues are will be held. The target group are Senior Provincial Administration and Civil Servants from other relevant ministries at district and provincial level like the Ministries of Livestock Development, Water, Transport and Communication, Environment and Natural Resources,Public Work, Education Social services and others..

The duration will be to be 5 days and the seminars should be organized through the provinces.

Leadership II (courses for higher level leadership)

These courses have as an objective to increase leaders awareness of the dangers of soil conservation and what measures can be taken. In such a way we will seek the leaders support to publicize and spearhead the soil conservation campaign both locally and nationally.

Participants will be drawn from KANU, churches, women leaders, youth leaders. The courses will be organized through the Provinces and districts. Some assistance can be given from headquarters if need be.

Chiefs/Assistant Chiefs

This course aims at involving chiefs and their assistants in order to enlist their support. The chiefs and assistant chiefs have been given an increased role in the mobilizing of people through the introduction of the catchment approach.

This course will be organized at the district level.

Farmers training

Will continue along two main lines. The first one is for a limited number were soil conservation will be taught during some days at an organized venue. Some farmers can also be taken for field trips to other areas in order to get new ideas.

The majority of the farmers are however expected to pick new ideas, and learn about soil conservation during farmers field days and within the national extension programme.

A drastic change will take place with the former school approach programme. Instead of focusing on a few selected schools in some districts, we will now spread out our activities to all primary and secondary schools in Kenya. This will encompass on a diversified training package of the teachers, in order to make them more apt to teach soil conservation in the schools.

Further, together with the Ministry of Education a diversified teaching material in soil conservation, will be produced to be used by the students.

The schools should also receive some help in form of equipment, teaching aids etc. which will help the teacher when talking about soil conservation to the students.

Schools Approach Programme

The Approach to Schools component will be expanded drastically to cater for the ever increasing population of the Kenyan Youth. Unlike in the previous Plan of Operation, the approach to schools will be primarily implemented by the Ministry of Education in collaboration with the SWCB. The role of the SWCB will be to provide the necessary technical back-up to both KIE and MoE. In order to reach as many schools as possible within the period in plan, both the primary and secondary school teachers dealing with Agriculture as a subject in the 8-4-4 System have to be trained. This will be done as follows:

The Kenya Institute of Education and the Ministries of Education and Agriculture have to review the syllabi for primary and diploma teachers. Initial preparatory meetings have already been held.

Examine the relevant materials and information being produced by various organizations and make them available to the teachers.

Involve experts from specialized organizations (e.g ICRAF, NES, RSCU, etc.) together with the KIE and SWCB to develop new teaching materials for the school children.

Develop the school farms by involving the school children in putting up appropriate soil and water conservation measures as well as agroforestry as may be deemed necessary. These farms will then become useful demonstrations for the whole school and for the community around.

Utilize the sub location and catchment conservation staff to plan, advise and supervise the development of the school farm which will be treated as one of the farms in a given catchment area.

The main objective for the training programme within schools is to:

- Orientate youth in soil and water conservation with the aim of making them appreciate the importance and the reasons behind all activities in soil conservation in order to practice it in the future;
- Use children as agents of change within the rural community in the area of soil conservation, since they can influence their parents on accepting conservation measures.

Estimation of number of students to reach

There are about 25 million people in Kenya. If it can be assumed that 20% of these are in primary school this adds up to 5 million students. In the 8-4-4 system, it will then be about 600,000 students in each year-group in primary schools. According to the 8-4-4 curriculum soil conservation shall be taught in standard IV, V, VI and VII. That means that Soil Conservation messages shall reach **2.4 million primary** school students yearly, within the frame of the curriculum. In an effort to estimate the number of students to be reached in secondary schools we assume that 20% of the students leaving primary schools are proceeding to secondary. That gives a yearly intake of 120,000 students or totally around **half a million** students in secondary schools. Hence, we will aim at giving support for soil conservation education for 2.4 million students in primary schools and half a million in secondary, totaling **3 million students.**

PROPOSAL FOR STRATEGY (SCHOOLS)

The schools will be approached by a diversified strategy as follows:

A. *Review of the curriculum in Primary and Secondary schools and at teachers training institutions.*

B. *Basic Education for Teachers*

Teachers will be trained in soil conservation for about two weeks while still in college.

C. *Retraining of Teachers*

Teachers who are already out in the field will be trained as indicated earlier within the Soil Conservation Programme. However, the course will be extended from 3 to 5 days. This category also includes supervision and school inspectors within the Ministry of Education.

D. *Guidance*

The schools need guidance and help from the Ministry of Agriculture staff at Provincial and District level in order to incorporate conservation more effectively.Part of this will be done when the schools are within the catchment areas.

E. *Production and Distribution of Teaching Equipment*

These are different audio visual aids and equipment which will help the teachers when talking about Soil Conservation.

F. *Teaching Material*

It includes posters calendars, pamphlets etc. which will be produced in sufficient quantities and in most cases to be kept by the students.

Purchase production and Distribution of teaching equipment

In order to facilitate the training some materials should be produced and stored at District Headquarters for circulation within the schools in the District. Some tools to be used in the Agricultural training should also be distributed to schools. Line levels can be given to schools on special request. Furthermore, materials (e.g. caps, T-shirts, bags, etc.) will be purchased to be given out as prizes during soil and water conservation competitions.

Production and distribution of teaching materials

This will be a huge undertaking because the intention is to reach the whole target group. The materials will include:

- Posters and calendars to be distributed in a limited number to each school.
- Leaflets in soil conservation to be distributed and kept for 4-K club/young farmers club member in the classes where soil conservation is taught in primary and secondary schools.
- A book in Agriculture, with emphasis on soil conservation for all primary school children.

- The development of these materials will mainly be done with help of selected soil conservation officers in collaboration with the Ministry of Education and Rural Youth Branch. Posters, calendars and pamphlets will be given free of charge while the Agricultural book will be bought by the students.

ADDITIONAL RESOURCE PERSONS

Considering that the training Programme will be expanded to accommodate and give specific knowledge and skills to the whole range of soil conservation officers, there will be need to draw resource persons from the provinces and some selected districts. Experts from other relevant Ministries, Agencies and institutions will be called upon to supplement the expertise which is not available at the Soil and Water Conservation Branch.

The only courses that would require input from outside the Ministry of Agriculture are the Technical course (on Land use planning and design) and one on Agroforestry. The resource persons will be drawn from Agencies such as SIDA (RSCU) and ICRAF, and the institutions like the Universities of Nairobi and Egerton.

Table 3
Resource Mandays for planning and conducting of courses

Course	No of course/year	Consultancy days/course		Mandays	
		Other Insti.	MoA	Other Insti.	MoA
Land use planning & design of soil conservation struc.	1	90	-	90	-
Training of Trainers	2	26	-	52	-
National Seminar SC	3	1	2	3	6
National Seminar Agrof.	2	6	-	12	-
National Seminar ASAL	1	4	3	4	3
SCO - retraining	10	6	-	60	-
RRA	1	13	-	13	-
Total	20			234	9
Total Mandays				243	

DEVELOPMENT OF TRAINING MATERIAL

Considerable efforts has to be put into development of new training materials as much of the material currently in use dates back to the late seventies. Alot of new experience has been gained since that time, and there are also new target groups and approaches. The training materials can be divided into the following groups:

A *Technical material for Agricultural staff.*

B *Material for other staff at residential courses.*

C *Material for farmers.*

D *Material for schools.*

E *Teaching Aids for training.*

Technical material for Agricultural staff

Most of the technical teaching is still done on basis of "Soil Conservation in Kenya". It is still felt that the book is good and it can serve its purpose after a revision, the new material should incorporate tables reviewed etc. Therefore we need to use local experts to do the work together with the SWCB staff.

The TAs are in need to get more area specific guide-lines for soil conservation. Therefore it is intended to give them a handbook with recommendations on soil conservation based on agroecological zones, slopes, soils etc. Also for this task there will be need to employ other experts on short term basis.

With the start up of the Agroforestry programme there will be need for a manual in this field. A specialist is supposed to do this work.

The ASAL Programme will also need to develop guide-lines in water harvesting, management of grazing lands etc. It is intended to make this in form of smaller booklets. With the start up of new courses new curriculums have to be developed and the current ones will have to be revised during the period. The aim should also be to publicize as much as possible of handouts, reports, etc. produced during the different seminars.

Material for other staff at residential courses

In general this category does not need so much technical knowledge. Therefore it is proposed that an "Out line of soil conservation" in Kenya should be used as a base for a booklet directed to target groups like teachers, leaders etc. Local experts will also be needed for this work to be done.

Material for farmers

The Comic book or Farmers booklet already produced will be distributed to farmers during the field days and training. As a complement to this 5 pamphlets with not more than 10 pages each, should be developed to complement the messages from the farmers booklet. This will need be done by the local experts in consultation with the SWCB staff.

Material for schools

Development of material for schools will require considerable resources. The comic book is also supposed to be used for distribution to schools. Further four small pamphlets should be developed for distribution mainly to 4-K club members when the topics are taught according to the Ministry of Education curriculum. These pamphlets will be developed by Ministry of Agriculture, Ministry of Education and the Kenya Institute of Education.

The Branch is also aiming at producing a book in Agriculture with strong emphasis on soil conservation. However this book will not be distributed free of charge.

Teaching equipment

This involves different material to be used by trainers. We are aiming at four new posters, with messages, e.g. on ASAL and Agroforestry. Further calendars with soil conservation messages will be produced. To help the TAs in the extension work some flipcharts, i.e. big sheets with photographs, pictures, drawings etc. will be produced centrally. The district and provincial trainers are also supposed to develop simple flipcharts themselves, to be used in the local training.

We are also intending to develop slideseries, both for technical training of staff and also to be used in the schools. The local trainers should also be stimulated to develop their own slideseries if we assist them by purchase and development of films.

In cooperation with Agricultural Information Centre new films with a duration of about 10 minutes each should be developed. Further the existing "Save our Soils" will be duplicated for use in schools and staff training.

Purchase of Audio visual equipment

In order to make the training more effective there will be need to purchase some audio visual aids mainly to be stationed at districts and provinces. The requirements need for the three year period is shown below:

Table 5
Purchase of Audio visual equipment

Item	Number/Year			For whom
	1989/90	1990/91	1991/92	
Film projectors	2	6		Hq., Provinces
Video sets	1		1	Hq.
Overhead projector	30			Districts
Slide projector	30			Districts
Screens	30			Districts
Stationary for Audio Visual				Hq, Province District

MONITORING AND EVALUATION

District and Divisional planners (Soil Conservation Officers) need continuous information, in qualitative and quantitative terms, about the implementation of the programme. This will enable them to supervise on-going activities as well as improve on planning.

There is also a need to evaluate the production situation and capacity (fertility) on the individual farms. The overall erosion situation must also be followed and evaluated.

OBJECTIVE

The evaluation efforts should provide systematic, reliable and valid information to planners, decision makers and implementers from technical and socio-economic studies, which can be translated into appropriate conservation strategies.

Evaluation of the overall erosion situation

Overall assessment of the on-going erosion should be done in a country wide basis. The task for the SWC Branch is to initiate studies and to follow up and report on the situation. This means that the headquarter will follow up what has been done to assess the rate of desertification, deforestation and siltation in rivers and dams and to include summaries of the information in short technical reports. This work will achieved through a number of short investigations by soil conservation staff with guidance from the consultant on methology and analysis.

Reporting and Planning

The implementation is based on yearly workplans prepared by the Divisional staff and compiled at District level. In order to be able to prepare realistic plans there must be proper and accurate reports. The divisional soil conservation officers present progress reports quarterly to the District headquarters. These reports include progress in the catchment areas as well as on individual farms. They also report on problems both technical and socio-economic. DSCOs compile and analyse the divisional reports and submit quarterly and semi annual reports to the headquarter in Nairobi. These reports form the basis for further training, development of techniques and for budget purposes.

Specific Studies

The Branch will engage a short-term consultant to further develop a the methodology for technical and socio-economic studies.

Small studies will be carried out within the project and mainly by the staff already employed by the Ministry. The studies will serve different purposes as they will give information on adoption rate of certain messages, on technical solutions and bottle-necks in the implementation. They will also educate the officers doing the studies and give them more confidence and make them more efficient. The studies will also provide the extension agents with arguments to be used to convince farmers to adopt certain soil conservation measures:

Rapid Rural Appraisal surveys - These simple surveys will be made by the planners of catchments with support from headquarters. The surveys should not take more than two weeks and the findings should be presented in summarized form (3-5 pages). In order to develop a simple and clear method there will be a need for a consultant to design a format and carry out training for a number of trainers selected from various areas. Action will start in July 1989 with a course organized by IIED.

- *Measurement of yields-* Soil conservation is in a broad sence,to maintain or even increase the fertility of the soil. One way to measure the fertility of a soil is to study the production from a specific area both in the long run and compared with other soils with similar treatment. During these studies the farm practices will be recorded and the harvests recorded. These studies will be done by the soil conservation officers and as consultancy work.

- *Profiles* - The aim of these profiles is to get a guide and comprehensive picture of the present state of the soil conservation in a specific area (location or division). This will be done through interviewing the TAs in their areas of operation. This will be conducted by the PSCO, DSCO and Division SCO.

- *Socio economic case studies* - These should be more in-depth studies. Farmers and extension staff should be interviewed and perhaps also local leaders and officers from other institutions and ministries such studies will be carried out on consultancy basis.

- *Technical evaluations* - By making field observations on a small sample of farms the technical solutions can be evaluated. From these studies information on technical solutions will be fed back to the training and extension personnel. It will also give an indication of how the technical personnel have understood and implemented the technical measures on the ground. These studies will be carried out by headquarters staff in Nairobi and PSCOs. Such a study requires about 4-6 weeks.

- *Soil loss measurements* - In some areas it is difficult to argue with farmers about the on-going erosion unless there is a gully developing. In order to give the soil conservation officers an extension tool in this respect soil-traps will be offered to SCO to be used for this purpose. In one area per district at least detailed records will be kept and presented.

- *Monitoring* - The Provincial Soil Conservation Officer will regularly visit their districts to follow-up the implementation of the programme. As he is responsible for the training in his province he will include his findings in future training programmes and extension messages. The District Soil Conservation Officer has overall responsibility for the soil conservation work in the district. He will conduct regular field visits to the divisions in order to supervise the on-going activities. In the division and chosen catchments there are soil conservation committees and they will monitor the work in their area.

In order to check on the reporting and implementation officers from the headquarters in Nairobi , at least once a year will conduct field follow-ups and during these visits look into:

- the effectiveness of various conservation practices, land use and vegetation cover in preventing and minimizing soil erosion;

- extension approaches (people's participation) and their effectiveness;

- utilization of funds.

- *Training* - As most of the monitoring and evaluation will be made by the soil conservation officers there will be a need for training and development of simple evaluation techniques, such as RRA.
- *Research Workshops* - The results from the researchers must be spread to the field workers. An efficient way to inform the soil conservation officers of the results for the on-going research is to arrange yearly workshops. The ministry should take the initiative to arrange for such workshops, where PSCO and SCOs should be invited and where researchers from KARI and the University will present their findings. The university should also invite soil conservation officers (PSCO, DSCO and Division SCOs) to come to the presentations of the masters thesis if it cannot be combined with the presentations from KARI.
- *Trials* - The SWCB staff will work in close co-operation with KARI and the Universities in order to influence on the research. In addition the ministry will conduct small on-farm trials.

At the headquarters micro computers are used in preparation of study reports, plans, registers etc. The officers using the computers need training and most of it is done on the job with some support from computer consultants. As the use of computers always need to be maintained (programmes, lay-out etc) there will be a need for back-up by short-term consultants.

Summary of studies	Number of studies			
	1988/89	1989/90	1990/91	1991/92
a) Rapid Rural Appraisal Surveys	0	20	60	60
b) Profiles (interviews with extension staff)	0	2	2	2
c) Socio-economic studies (interviews with farmers)	1	2	2	2
d) Technical evaluation (field observations on farms)	2	2	3	3
e) Economic evaluation (measurements of yields)	2	2	2	2

There will be short courses for the soil conservation officers involved in conducting the studies

PROCUREMENT OF HAND TOOLS

The catchment approach will result in greater community involvement. In many cases the work will be done through already existing groups, but new ones will be promoted where necessary. In the past the bulk of the tools have been issued to groups of farmers who regularly get together for conservation activities. Some tools have also been used as prizes for competitions involving conservation, while a small quantity has been issued to individual farmers for a variety of reasons.

The intensified conservation work envisaged in the next ten years (based on catchment areas and promoting a strong participatory approach) will require **increased amounts of tools to at least double the present level** during the next 3 year period.

The tools, once issued out, should **not** be treated as Government property, but rather as a small measure of incentives to get more work done. The farmers' groups can then manage the tools as they wish, as long as the tools are used for conservation work (either in the groups or on individual holdings). However, preference will be given to areas where work is organized, planned and implemented on a catchment basis.

Procurement of Hand Tools

ITEM	QUANTITY			
	1988/89	1989/90	1990/91	1991/92
Axes	200	500	500	500
Crow Bars	200	500	500	500
Plain Jembes	35,000	40,000	50,000	60,000
Fork Jembes	30,000	60,000	60,000	60,000
Shovels	25,000	60,000	60,000	60,000
Mattockes	3,000	1,000	1,000	1,000
Pangas	6,000	3,000	3,000	3,000
Pick axes	3,000	500	500	200
Sledge Hammers	200	200	200	100
Local Jembes	20,000	20,000	20,000	20,000
Wheel Barrows	50	50	50	50

PROCUREMENT OF VEHICLES

During the present plan of operation the project has supplied or is supplying vehicles as follows:

Provinces	Nissan Vans for use in training, as well as a passenger vehicle (4WD) to replace the Land Rovers bought in 1979/80.
Districts	(4WD) vehicles.
Divisions	Motor-cycles

In this plan of operation, the project will supply vehicles mostly for replacement, as indicated below:

	Present situation	Replacement		
	1988/98	1989/90	1990/91	1991/92
Motor-bikes	220	20	35	50
Land Rovers	31	1	2	2
Land Cruisers	3	1	1	1
Suzukis	13	-	2	2
Buses	2	-	1	1
Subarus	4	-	2	-
Nissan Urvan	6	-	-	2

The increased vehicle numbers during the last year will require a higher level of budgetary support to the districts as the officers are supposed to travel much more in the future.

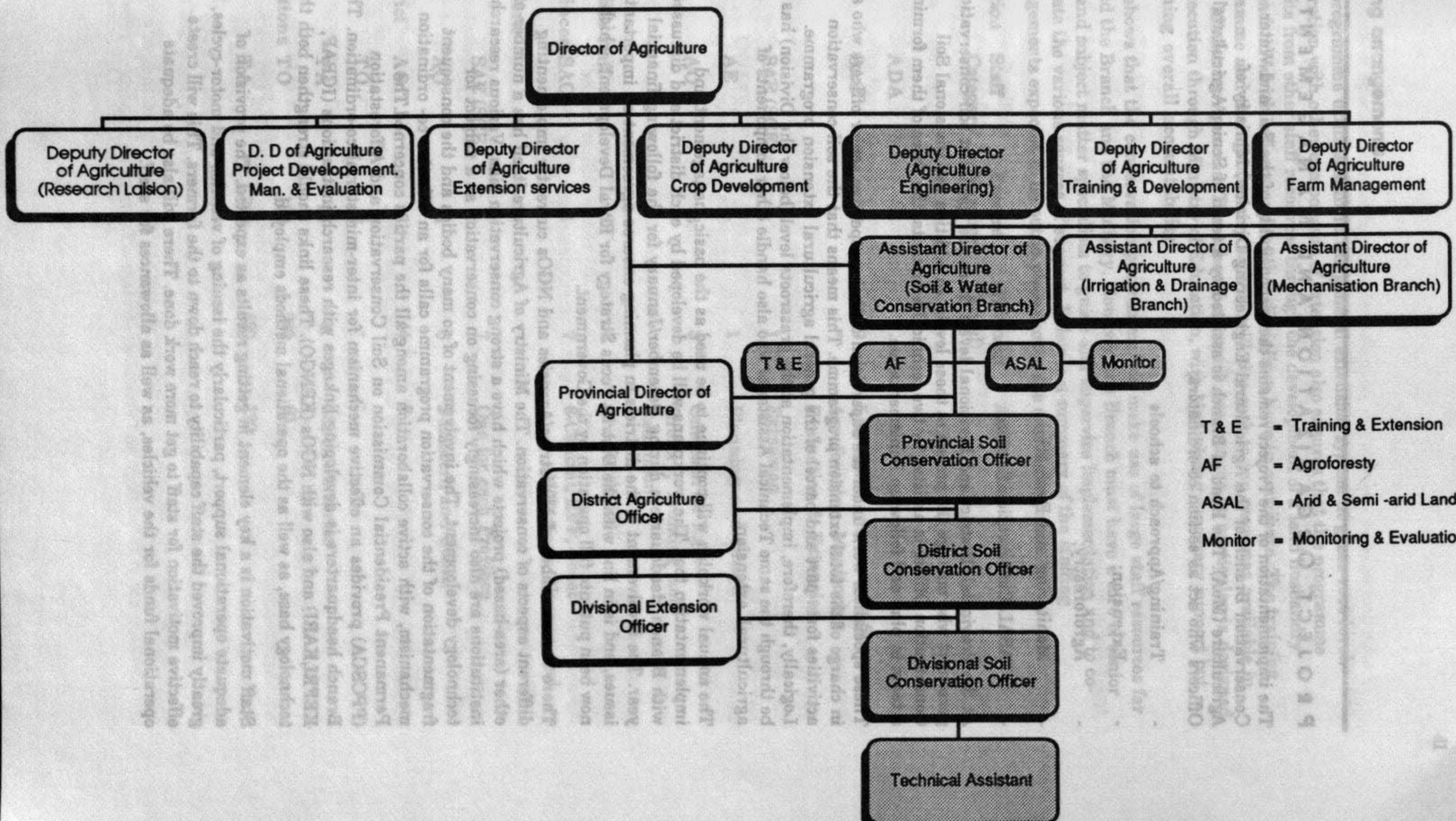
OFFICE AND FIELD EQUIPMENT

The Districts and the divisions will need to be strengthened in order to handle increased work-load arising from the intensified activities. There will be much more planning and design work at both levels than in the past.

The project has been supplying simple line levels for lay-out of conservation measures and this will continue . A smaller number of quick-set levels and clinometers are also necessary for planning work in catchment areas. Other needs are related to typewriters and simple office furniture for the Divisional Planning Teams. At headquarters a small library will be organized and the computerization will continue. As a summary there will be need to purchase, furniture, typewriters, computers, calculators and survey/layout equipment.

Ministry of Agriculture

Soil & Water Conservation
Project Organisation and Management



PROJECT ORGANIZATION AND MANAGEMENT

The implementation of the Project remains the responsibility of the Soil and Water Conservation Branch of the Agricultural Engineering Division, Ministry of Agriculture (MoA). The Head of Branch is assisted by a team of Senior Agricultural Officers who act as section co-ordinators;

- Training/Approach to schools
- Extension;
- Agroforestry;
- Monitoring and Evaluation;
- ASAL Conservation Section;

At the Provincial, District and Divisional levels there are specialist soil conservation personnel who manage the project at those levels. In addition the Divisional Soil Conservation Officer is assisted by two technical assistants, the three of them forming a team to plan and follow-up implementation.

These specialists work under the supervision of their respective senior officers who are in charge of the total extension programme. This means that the soil conservation activities form part and parcel of the general agricultural extension programme. Logically, therefore, implementation at the grassroots level (below the Division) has to be through the same Technical Assistants who also handle other components of agricultural extension.

The annual workplan will continue to be used as the basic management and implementation tool. The workplans will be developed by each district and discussed with Branch Headquarters during December/January for the following financial year. The involvement of the districts in planning ensures agreement on important issues, and is in line with the District Focus Strategy for Rural Development, which has now been put into full operation by the Government.

There are a number of Ministries/Agencies and NGOs currently implementing different aspects of conservation. The Ministry of Agriculture itself has a number of other (area-based) projects which have a strong conservation bias. Various research institutions are also increasingly focussing on conservation as a subject for technology development. The involvement of so many bodies and the consequent fragmentation of the conservation programme calls for an effective co- ordination mechanism, with active collaboration among all the parties concerned.The Permanent Presidential Commission on Soil Conservation and Afforestation (PPCSCA) provides an effective mechanism for inter-ministerial co-ordination. The Branch headquarters is developing linkages with research institutions (ICRAF, KEFRI,KARI) and also with NGOs (KENGO). These links should strengthen both the technology base, as well as the operational methods employed.

Staff motivation is a key element in getting results as expected. The provision of adequate operational support, particularly the issuing of vehicles and motor-cycles, has greatly improved the staff capability to reach down to the farmers. This will create effective motivation for staff to get more work done. There will also be adequate operational funds for the vehicles, as well as allowances for staff.

Staffing arrangements

The programme utilizes staff in the general extension system at grass-root level. Integration with other components of extension also ensures that the programme benefits from other staff resources through the development of a land husbandry approach in which officers under other disciplines have to contribute. The training programme and the agroforestry activity will also seek to tap resources available in other Ministries/Agencies. The schools approach programme in particular is designed for execution through Ministry of Education, with MoA giving necessary support but retaining overall accountability.

This shows that the conservation programme will make use of large staff resources far beyond the Branch and the Ministry. However, the Branch must have a core of senior staff and subject matter specialists to guide and supervise implementation and to co-ordinate the various sources of support. Below is a summary of the staffing arrangements expected to be put in place during the next three years.

Location	Staff Category	Present Number	Proposed (Total)	Additional
HQ	ADA	1		
	SAO	2	9	5 for ASAL and one each for Agroforestry, Monitoring, Evaluation & Extension
	SAE (SCE)	-	1	Extension
	AE	-	1	Planning and design
	AO	3	3	One each for Agro-forestry, Training and Extension
Swedish staff		3	4	One for ASAL
Provinces	SAO	1	7	6-Central, RVP, Coast N/Eastern, Nyanza and Western
	SAE (SCE)	-	7	One for each Province
	AO	4	6	2-Eastern and Coast.
District	AO	36	44	8
	TO	5	-	-
	TA	15	41	26-for nurseries
Divisions	TO	180	240	60
	TA	360	480	120

Abbreviations:	ADA	Assistant Director Agriculture
	SAE	Senior Agriculture Engineer
	SAO	Senior Agriculture Officer
	AO	Agriculture Officer
	TO	Technical Officer
	TA	Technical Assistant

JOB DESCRIPTIONS

Branch Headquarters

In broad terms the Branch Headquarters is charged with the responsibility for the development of policies and strategies at national level, project identification and formulation, field supervision, training of senior staff and development of technology. The headquarters also acts as the main link with other Ministries? Agencies and with donors, particularly in matters related to support for districts and provinces. (finances, staff, transport, interministerial collaboration).

Provincial Office

The Provincial Soil Conservation Officer is responsible for the training programme of the district staff of MoA and other Ministries and also for local leaders. The officer also plays an important part in technology development, and in putting together technical packages for extension. The Province also supports the districts technically through supervision and guidance.

District and Divisions.

The District Soil Conservation Officer is in charge and responsible of land use planning, giving guidance and supervision to the Divisional Officer in the development and implementation of proper conservation plans. The DSCO also conducts training for TAs and leaders in the Divisions as well as organizing support for Divisions in the form of funds, transport from District pools, supply of tools and materials. The officer also gives guidance to the divisions in the setting up and utilization of demonstrations while also assisting the PSCO in the development of technical packages for extension.

COMMENTS ON JOINT GOK/SIDA REVIEW MISSION 1988

Below are some brief comments on the Mission recommendations;

Techniques for Conservation/Management

Recommendations on lay-out of terraces, design of measures, expediting the catchment planning process, bulking of materials through group nurseries and emphasis on biological/cultural methods, are already part of the implementation of the project. What may be required is perhaps better focus and refinement to ensure effectiveness.

This Plan of Operation contains proposals to strengthen agroforestry extension, with the development of technology and extension strategies forming an important activity.

The issue of specific possibilities (species selection, use of green manure and other) will be addressed properly in the development of extension packages.

Land tenure is a complex issue in many of the lower areas, and any concrete changes can only be suggested after much more investigation than the Mission was able to carry out.

Trees in Soil Conservation (Agroforestry)

It is agreed that women's interests should be considered in the development of agroforestry systems to ensure that the specific technologies and the strategies for implementation are not at variance with the way women work, the available time, energy requirements or the needs of the household. An appraisal of the actual situation should be done before recommendations are given.

The SWCB has already been working with Forest Department (Rural Afforestation Extension Service) and the Kenya Forest Seed Centre at Muguga in collection of seed, production and distribution of seedlings to farmers. The links need further strengthening particularly to develop joint training programmes and to ensure that there is no duplication in the production of planting materials.

The training of T.Os and other senior staff in agroforestry will be given greater weight, with the first course starting in May 1989 (also incorporating other components).

Community Participation

Formation of farmers' catchment conservation committees will be actively promoted as part of the involvement of land users. The plan of Operation also provides for intensive training of farmers through tours, field days, demonstrations, competitions , film shows and other activities.

Rapid rural appraisals will be conducted to provide important information for planning purposes, particularly to involve farmers in the development of the catchment plans.

Extension Approach for Soil Conservation

As already indicated, farmers will be involved more in decision making during planning especially to obtain appropriate solutions for each local area. Farmers' committees will therefore be given the opportunity (and the responsibility) to give their own suggestions for incorporation in the catchment plans.

Staff capability will be improved through a few focussed courses on specific technical subjects.

Training/Staff Development

It is urgent to start training staff in mobilization of farmers, extension and communication techniques as well as in project development and management. These subjects have not been incorporated in the main training programme.

It is possible to utilize the Agricultural Information Centre (A.I.C) firstly as a training venue but also for printing of materials. Already the Branch has had a number of meetings to determine how best AIC facilities can be utilized (for example, printing and use of cinema vans). A concrete arrangement will be made before July, 1989 between A.I.C and the Branch.

Women in Soil Conservation

It is already recognized that women contribute significantly to conservation work. However, it is important to involve women more directly in planning to ensure that their requirements are taken into account. Women will therefore be elected to the conservation committees where important decisions are made.

Already the Branch is promoting the use of biological and cultural methods which generally require less labour. This will ensure that women have time for other necessary activities. Where physical excavation is considered necessary, then men will be called to provide the labour. In many areas this kind of work is done communally (Harambee) particularly for cut-offs and gully control.

Monitoring and Evaluation

Monitoring and evaluation should be broadened to include more of socio-economic aspects.

Organization and Management

Staff at Headquarters should spend a significant proportion of their time on policy and strategies, technology development, production of teaching materials and field supervision/guidance. Achievement of these important functions will depend on staff levels. The headquarter will receive additional staff for the important sections particularly training and extension, agroforestry and approach to schools.

Similarly at the provincial level the staff should be engaged in technology development, training and support to districts (supervision and guidance). Provincial staff will also be given specific assignments on behalf of Headquarters, such as development of teaching materials.

Future Donor Support

Technical support over the next 3 years should include more utilization of expertise available from different organizations (national and international). Already the Branch has initiated institutional collaboration with local universities and with the Swedish University of Agricultural Sciences to develop a conservation programme for marginal areas.

Along with these arrangements there will be need for short-term consultancies for specific areas; development of teaching materials, or conducting short studies.

Conservation work being intensified in all districts. New vehicles have been issued to officers who previously depended on pooled transport. At the divisional level the conservation officer (T.O) now has two Technical Assistants to help in collection of information and following up specific issues. The Headquarters and the Province will also have added staff. All these changes will require increased levels of funding to cater for hand tools, teaching materials, transport operating, training, staff allowances and other costs.

BUDGET

Budget routines

The following planning calendar has been in operation for quite some time now.

August	Forward budgets are prepared in districts.
September - October	Forward budget are discussed adjusted and approved at the Ministry headquarters.
November - December	Detailed workplans are prepared in the Districts.
December - January	The District workplans are discussed with the Ministry headquarters and agreed upon.
January - March	Budget (according to the agreed workplans and projected finances) are discussed and agreed at Ministry level.
March - April	Budgets discused at the Treasury.
May - June	Budget approved by the Treasury.
June - July	Approved budget funds are allocated to districts and provinces, according to agreed or adjusted workplans.

The funds are allocated half yearly. Treasury requests, (quarterly) the donor to disburse money. In the District the DAO is the AIE holder and the DSCO together with the Division SCOs are the responsible officers. Parts of the funds are not transferred to treasury but used as direct payment from the donor. This is mainly for purchase of vehicles, tools, stationery and training at national level.

The funds from the donor (SIDA) are grants and the Kenyan contribution is in form of staff salaries offices and other shared facilities. The total cost for the Kenyan staff was estimated in 1986 to be 1,135,000 K£.

Item 100 - Transport Operating Expenses

This item is utilized for all running costs of the vehicles used by the staff involved in the programme implementation. The background figures are as follows:

Vehicles	Kshs '000'/year	Total Kshs. '000' year/year	
240 Motorcycles	13	3,120	
6 Mini buses	115	690	
2 Buses	200	400	
13 Suzukis	80	1,040	
28 Land Rovers	150	4,200	
14 Headquarter vehicles	130	1,820	
Total		11,270	(=K£ 564)
Budget 88/89		8,310	

Item 110 - Travelling and Accommodation

Funds under this item are used for subsistence and night out claims of officers on duty trips, including study tours and seminars. Estimation:

	Amount/officer (Kshs '000')	Total Kshs '000' /year
District		
40 DSCOs	20	800
260 Div. SCOs	10	2,600
520 SCO TAs	3	1,560
Others (DAO, DEO, drivers)		800
Provinces		
7 PSCOs	30	210
Others		400
Headquarters		1,230
Total		7,600 (=K£ 380)

Item 154 - Training

Funds under this item are used to cover costs for food, accommodation and transport to and from the different seminars, courses and excursions. It should also cover the costs for the formal training at the colleges and universities.

Item 174 - Stationery and Printing

This item will be required to meet the costs of purchasing required training materials. Stationery materials for seminars and courses will be purchased by funds under this item. The costs of printing soil conservation booklets, posters, calendars etc for various target groups will be paid from this item.

Item 176 - Show Expenses

Only the major agricultural shows (provincial) will be funded by the programme.

Item 184 - Consultancies

Funds under this item will be used to pay additional teachers, ASAL group and various experts hired to conduct studies, produce books and pamphlets etc.

Some tasks have been pending for quite some time. Instead of employing more officers it has been seen as more efficient and flexible to hire consultants for specific tasks. This will facilitate running of some courses, preparation of manuals and studies. The major part under this item will be used to pay consultants for the ASAL Programme.

Item 186 - Hire of Transport

This item will be used to pay for buses, hired for excursions and also to hire vehicles for transport for materials for soil conservation work.

Item 200 ,210,212- Purchase of Vehicles

Some vehicles within the programme are old and must be replaced. The life span of a motor cycle is short and there will be a need to replace some of them already in 1989 and more in 1990 and 1991.(for details see chapter Procurement of Vehicles)

Item 220 - Purchase of Plant and Equipment

Most of the tools and equipment will be bought annually, through the headquarters but local purchases in the districts of hand-tools will be encouraged.(For details see chapter on Procurement of Hand Tools)

Item 250- Repair of Plant, Equipment &Tools

The hand tools supplied are not fitted with handles and funds under this item will be used to cater for handles. Some minor repairs of equipment in the nurseries will also be repaired with funds from this item.

Item 260 - Maintenance of Buildings

In the ASAL areas there is a need for maintenance of offices and stores used by the extension staff. As the programme is expanding in these areas there will be a need for minor repair in some areas.

Item 403 - Soil Conservation & Afforestation - Nurseries

Most of the funds under this item will be allocated to the districts to be used for the running costs in the nurseries. Tools, polybags, some seeds and seedlings will be purchased by the headquarter.

Item 412 - Soil Conservation Works

The funds under this item will be used to pay workers assisting in the lay out of structures and some times also to pay casuals digging cut-offs and working on demonstration plots.

Budget Summary 1989/90–91/92 (In K£ '000')

Item	Description	89-90	90-91	91-92	TOTAL
001	Aid Staff	240.0	240.0	240.0	**720.0**
100	Transport Operation Expenses	560.6	605.0	612.0	**1,777.6**
110	Travelling & Accom. Expenses	350.0	395.0	431.0	**1,176.0**
154	Training	859.0	871.0	920.0	**2,650.0**
174	Stationary & Printing	463.5	500.0	757.0	**1,720.5**
176	Show Expenses	20.0	22.0	25.0	**67.0**
184	Consultancies	80.0	79.0	106.0	**265.0**
186	Hire of Transportation	137.0	190.0	240.0	**567.0**
190	Miscellaneous	20.0	20.0	17.0	**57.0**
200	Replacement of Vehicles	40.0	110.0	100.0	**250.0**
210	Purchase of Addional Vehicles	60.0	60.0	60.0	**180.0**
212	Purchase of Motorbikes	50.0	90.0	125.0	**265.0**
220	Purchase of Tools & Equipment	650.0	493.0	642.0	**1,785.0**
250	Repair of Plant, Equip & Tools	50.0	33.0	33.0	**116.0**
260	Maint. Of Buildings		113.0	120.0	**233.0**
403	Soil Cons. & Afforest - Nurseries	272.0	312.0	344.0	**928.0**
412	Farm Development	85.0	114.0	117.0	**316.0**
TOTALS		**3,937.1**	**4,247.0**	**4,889.0**	**13,073.1**

Budget 1989 / 90 (In K£ '000')

Item	Description	Extension	Agro-forestry	ASAL	Training	Training Material	Evaluation & Monitor	Purchase of Tools	Vehicles	TOTAL
001	Aid Staff	20.0	60.0	60.0	30.0	30.0	40.0			240.0
100	Transport Operation Expenses	380.0	21.0	20.6	125.0		14.0			560.6
110	Travelling & Accom. Expenses	235.0	40.0	20.0	40.0		15.0			350.0
154	Training				817.0	42.0				859.0
174	Stationary & Printing	15.0	10.0	10.0	76.0	322.5	30.0			463.5
176	Show Expenses	20.0								20.0
184	Consultancies			30.0	12.0	28.0	10.0			80.0
186	Hire of Transportation				137.0					137.0
190	Miscellaneous	5.0	3.0	3.0	4.0		3.0	1.0	1.0	20.0
200	Replacement of Vehicles								40.0	40.0
210	Purchase of Addional Vehicles								60.0	60.0
212	Purchase of Motorbikes								50.0	50.0
220	Purchase of Tools & Equipment	8.0	11.0	4.0	302.0	20.0	5.0	300.0		650.0
250	Repair of Plant, Equip & Tools	5.0	2.0	2.0	7.0	2.0	2.0	30.0		50.0
260	Maint. of Buildings									
403	Soil Cons. & Afforest - Nurseries		272.0							272.0
412	Farm Development	85.0								85.0
TOTALS		773.0	419.0	149.6	1,550.0	444.5	119.0	331.0	151.0	3,937.1

Budget 1990 / 91 (In K£ '000')

Item Description	Extension	Agro-forestry	ASAL	Training	Training Material	Evaluation	Purchase of Tools	Vehicles	TOTAL
001 Aid Staff	20.0	60.0	60.0	30.0	30.0	40.0			**240.0**
100 Transport Operation Expenses	405.0	25.0	25.0	130.0		20.0			**605.0**
110 Travelling & Accom. Expenses	263.0	40.0	34.0	43.0		15.0			**395.0**
154 Training				850.0	21.0				**871.0**
174 Stationary & Printing	8.0	5.0	3.0	80.0	379.0	25.0			**500.0**
176 Show Expenses	22.0								**22.0**
184 Consultancies			30.0	14.0	25.0	10.0			**79.0**
186 Hire of Transportation			50.0	140.0					**190.0**
190 Miscellaneous	5.0	3.0	3.0	4.0		3.0	1.0	1.0	**20.0**
200 Replacement of Vehicles								110.0	**110.0**
210 Purchase of Addional Vehicles								60.0	**60.0**
212 Purchase of Motorbikes								90.0	**90.0**
220 Purchase of Tools & Equipment	8.0		28.0	88.0		4.0	365.0		**493.0**
250 Repair of Plant, Equip & Tools	2.0		1.0				30.0		**33.0**
260 Maint. of Buildings			113.0						**113.0**
403 Soil Cons. & Afforest - Nurseries		312.0							**312.0**
412 Farm Development Building	100.0		14.0						**114.0**
TOTALS	833.0	445.0	361.0	1,379.0	455.0	117.0	396.0	261.0	4,247.0

Budget 1991 / 92 (In K£ '000')

Item Description	Extension	Agro-forestry	ASAL	Training	Training Material	Evaluation	Purchase of Tools	Vehicles	TOTAL
001 Aid Staff	20.0	60.0	60.0	30.0	30.0	40.0			240.0
100 Transport Operation Expenses	406.0	18.0	25.0	135.0		28.0			612.0
110 Travelling & Accom. Expenses	273.0	50.0	45.0	45.0		18.0			431.0
154 Training				900.0	20.0				920.0
174 Stationary & Printing	10.0	5.0	5.0	87.0	620.0	30.0			757.0
176 Show Expenses	25.0								25.0
184 Consultancies			40.0	16.0	30.0	20.0			106.0
186 Hire of Transportation			90.0	150.0					240.0
190 Miscellaneous	5.0	3.0	3.0	3.0		3.0			17.0
200 Replacement of Vehicles								100.0	100.0
210 Purchase of Addional Vehicles								60.0	60.0
212 Purchase of Motorbikes								125.0	125.0
220 Purchase of Tools & Equipment	8.0		30.0	207.0		2.0	395.0		642.0
250 Repair of Plant, Equip & Tools	2.0		1.0				30.0		33.0
260 Maint. of Buildings			120.0						120.0
403 Soil Cons. & Afforest - Nurseries		344.0							344.0
412 Farm Development	100.0		17.0						117.0
TOTALS	849.0	480.0	436.0	1,573.0	700.0	141.0	425.0	285.0	4,889.0

Budget Summary 1989/90--91/92 (In K£ '000')

Item Description	Extension	Agro-forestry	ASAL	Training	Training Material	Evaluation	Purchase of Tools	Vehicles	TOTAL
001 Aid Staff	60.0	180.0	180.0	90.0	90.0	120.0			**720.0**
100 Transport Operation Expenses	1,191.0	64.0	70.6	390.0		62.0			**1,777.6**
110 Travelling & Accom. Expenses	771.0	130.0	99.0	128.0		48.0			**1,176.0**
154 Training				2,567.0	83.0				**2,650.0**
174 Stationary & Printing	33.0	20.0	18.0	243.0	1,321.5	85.0			**1,720.5**
176 Show Expenses	67.0								**67.0**
184 Consultancies			100.0	42.0	83.0	40.0			**265.0**
186 Hire of Transportation			140.0	427.0					**567.0**
190 Miscellaneous	15.0	9.0	9.0	11.0		9.0	2.0	2.0	**57.0**
200 Replacement of Vehicles								250.0	**250.0**
210 Purchase of Addional Vehicles								180.0	**180.0**
212 Purchase of Motorbikes								265.0	**265.0**
220 Purchase of Tools & Equipment	24.0	11.0	62.0	597.0	20.0	11.0	1,060.0		**1,785.0**
250 Repair of Plant, Equip & Tools	9.0	2.0	4.0	7.0	2.0	2.0	90.0		**116.0**
260 Maint. of Buildings			233.0						**233.0**
403 Soil Cons. & Afforest - Nurseries		928.0							**928.0**
412 Farm Development	285.0		31.0						**316.0**
TOTALS	2,455.0	1,344.0	946.6	4,502.0	1,599.5	377.0	1,152.0	697.0	13,073.1

APPENDIX

Summary of inservice training in soil conservation courses for Agricultural staff

Name of course	*Target groups*	*Objectives*	*Responsible level*
A1. Training of Trainers	PSCOs, DSCOs, selected Div.SCOs	Communication skills, pedagogcal skills, ability to organize course	Headquarters
A2. National Seminars	All soil conservation officers, some extension officers	Refresh formal training confidence general soil conservation techniques & polices	Headquarters
A3. National Seminar, Agroforestry	PSCOs, DSCOs, D.Crops, D Hort.	Refresh formal training, practical approach	Headquarters
A4. National Seminar ASAL	Selected PSCOs, DSCOs, DAOs	Introduce Dryland Techniques Practical Approach	Headquarters
A5. Soil Conservation officers retraining	All Soil conservation officers	Step by step approach in a training package to increase SC staff skills	Province, Help by consultants
A6.Provincial Seminar in soil conservation	Agricultural officers, excluded soil conservation officers	Instil knowledge of SC techniques and policies	Province
A7.TAs Course, SC	New TAs	Practical approach to SC techniques policy matters	District
A8.TA Course, ASAL	TAs in selected district	Impact technical skill in ASAL techniques	District

Name of course	*Target groups*	*Objectives*	*Responsible level*
A9.TAs-retraining	**TAs with some working experience**	**Correct mistakes, introduction of new subjects**	**District**
A10. Nursery Management	**Nursery Personnel**	**Technical skills in nursery techniques**	**Province**
B1. Government Officers Course	**Senior provincial administration officers from other ministries**	**Stimulate inter-ministerial collaboration**	**Province**
B2.Leadership II	**Higher level leadership**	**Create awareness on SC. Ability to guide people in SC matters**	**Province/District**
B3. Leadership, ASAL	**Leaders in programme districts**	**Seek leaders support in ASAL Areas**	**Province**
B4.Chiefs course	**Chiefs/assistant chiefs**	**Awareness of soil conservation techniques, policies ability to mobilize people for SC.**	**District**
B5.Nursery course	**MoA nursery staff group nursery members, Nursery staff from other ministries.**	**Nursery Management**	**Province/District**
C1.Residential Course	**Innovative farmers & leaders**	**Ability to guide the local community on SC-issues**	**District**
C2. Farmers study tours	**Farmers in "slow adoptors"**	**Give farmers new ideas to transform to their community**	**District**

Name of course	*Target groups*	*Objectives*	*Responsible level*
C3 Farmers Field days	All farmers	Instil good Soil Conservation & Farm Management practices.	Division
Schools			
D1. Basic teachers education	Teachers in colleges	Ability to teach SC in primary and secondary schools	MoA Headquarters KIE Headquarters
D2. Re-training of teachers 4-K Clubs	Teachers in Agriculture,	Ability to teach SC in primary & secondary schools	District
D3.4K Club/Young Farmers club good farming practices	4K Club/Young club members	Stimulate Youths interest in SC	District

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