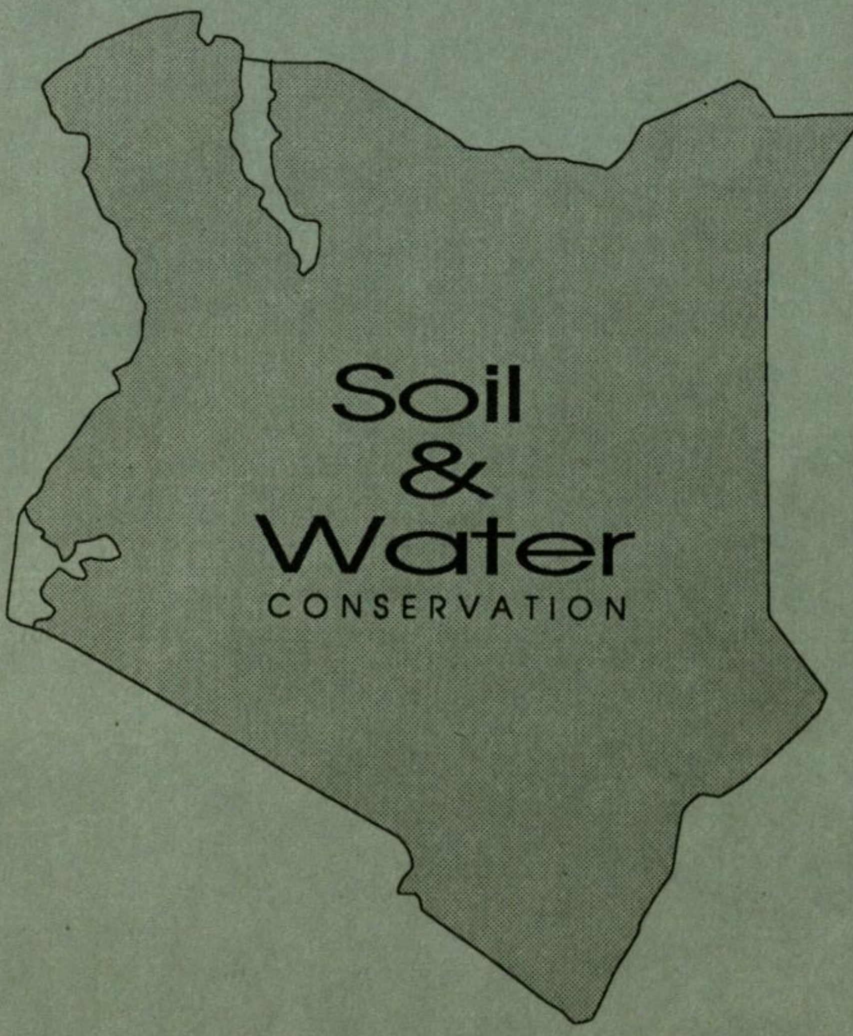
ANNUAL REPORT 1987/88

Soil & Water Conservation Project (SIDA)



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

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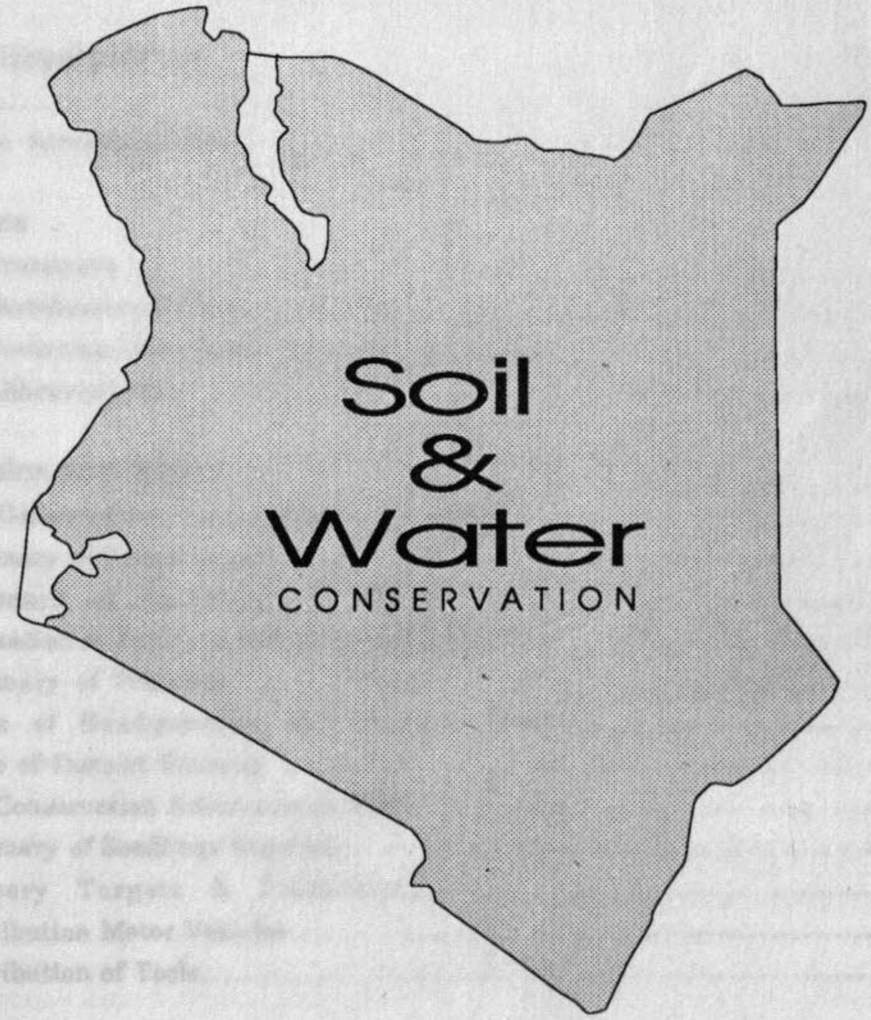

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List Of Contents

Summary & Introduction 2

Part I - Background Information

Aims & Objectives 9
Other Soil and Water Conservation Projects 9
Policy & Guidelines 10

Part II - Activities during 1987/88

Training 12
School Approach 22
Nurseries 25
Monitoring & Evaluation 30

Part III - Headquarters

Staff 31
Office Accommodation 31

Appendixes

I Transport 32
II Distribution of Tools 34
III Comments from Kakamega and Bungoma 36
IV Abbreviations 40

List of Tables and Charts

Soil Conservation Achievements 4
Summary of Expenditures 5
Summary of Utilization of funds 6
Utilization of Funds in Provinces and Districts 7
Summary of Training 17
Table of Headquarters and Province Training 18
Table of District Training 19
Soil Conservation Achievements 87/88 23
Summary of Seedlings Supplied 28
Nursery Targets & Production 29
Distribution Motor Vehicles 33
Distribution of Tools 34

SUMMARY & INTRODUCTION

Between 80-90% of Kenya's 23 million people derive their livelihood directly or indirectly from agriculture or the agricultural based sector. Most of this large population live on about 1/5 of the total Kenyan land area thcreby creating a population pressure on the available medium to high potential land.

The efforts to continue producing enough food to feed for the population now estimated to increase at 3.8 % per year, has forced food producers to move to areas of excessively steep slopes, otherwise unsuitable for cultivation, while others have encroached into the river banks. The clearing of the natural vegetation cover for crop growing has been at the expense of the stream flow. Due to the growing hunger for agricultural land, people who failed to get enough land on the over populated medium to high potential zones have moved to marginal areas. Most of these have very fragile and shallow soils with poor ground cover hence the area is exposed to severe erosion hazard.

An irrational land use and lack of proper land management skills has accelerated loss of valuable top soils through erosion leading to land degradation in general. This has resulted in decreased crop yields per unit area and hence not achieved the expected food production level to feed the population. The effects of soil erosion and resulting land degradation in general is clearly seen in many parts of the country where adequate land management practices have not been effectively applied.

The soil and water conservation (SIDA) programme saw some changes in 1987/88, particularly in personnel arrangement, policy issues and in projects extension approach. Staff changes during the year affected various senior officers at the Headquarters as detailed in chapter on staff position.

During the year new policy guide-lines were made in an effort to accelerate the overall achievement of the programme. Through these new policy guide-lines, more efficient staff and financial resources utilization were emphasized while at the same time the need to involve community participation in the programme was felt necessary.

The long term effect and consequences of Government subsidy and its impact on a sustained conservation was reviewed in relationship to farmers perception of conservation structures wholly or partly subsidized by the Government. After careful consideration of various effects it was necessary to drastically reduce the subsidy level while encouraging the farmer as an individual or in groups to carry out the recommended conservation works on their farms. The project would only be committed in providing professional and technical guidance while the community should implement the measures without expecting the government subsidy.

Throughout the year the programme implementing officers were encouraged to increase their efforts in order to achieve the set goals. The need to pass soil conservation messages throughout the year instead of waiting for the off-season period (previously known as the soil conservation peak period) was emphasized. For a long time the project emphasized structural conservation measures as the only available option. However, it was decided to emphasize both biological and cultural soil conservation measures as alternatives to the structural measures since biological/cultural methods are effective in environmental conservation and they are easier to promote among farmers. The incorporation of these measures in conservation would enable the extension staff to promote the conservation programmes throughout the year under existing National Extension Programme (T&V).

The catchment approach programme was launched at the beginning of 1987/88. The major aim of the programme was to achieve faster conservation in catchment areas through concentration of staff efforts and greater community participation. It was realized the previous individual approach many times resulted in haphazard and disjointed structures which in many cases were threatened by the effect of erosion and run-off from

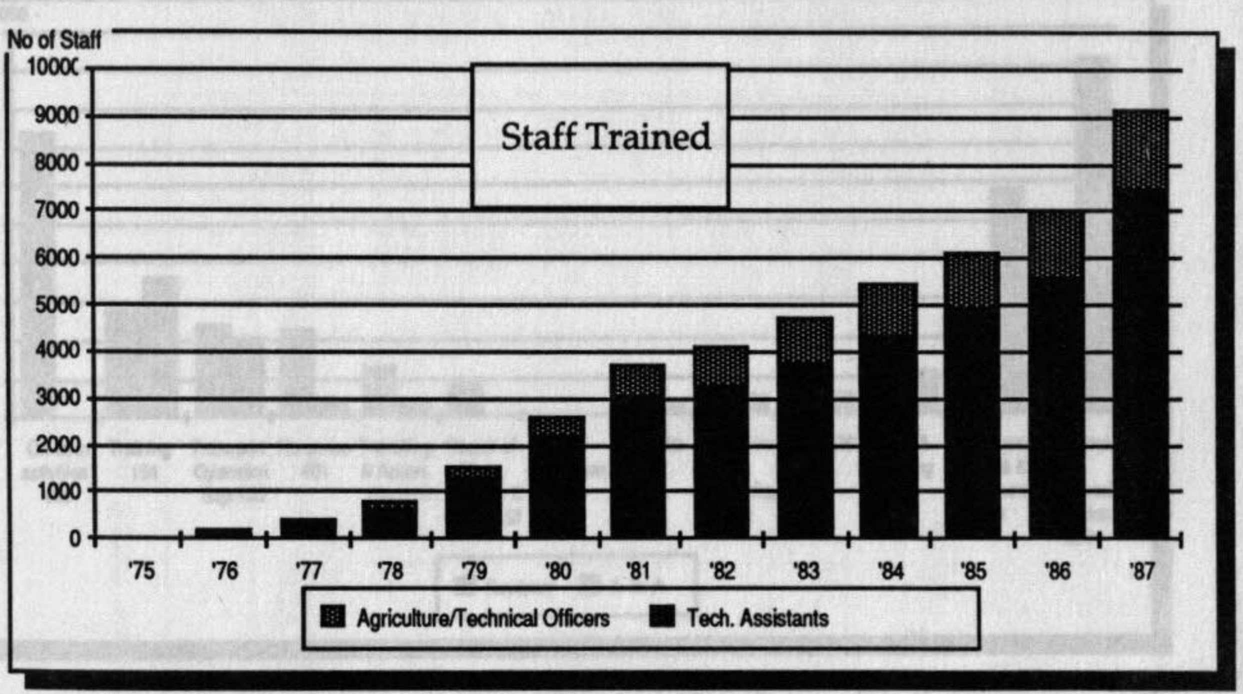
the neighbouring unconserved farms. This danger would be greatly reduced if total conservation measures were carried out on catchment basis.

To achieve the set targets it has been necessary to improve on staff mobility at all levels. More funds on transport operating expenses were allocated to the districts. Towards the end of 1987/88 financial year additional vehicles were acquired and supplied to the field staff a total of 140 motor-bikes, 6 Nissan minibuses, 6 Land-Rovers and 2 Peugeot station-wagons. The distribution of these vehicles is detailed in the chapter on Transport.

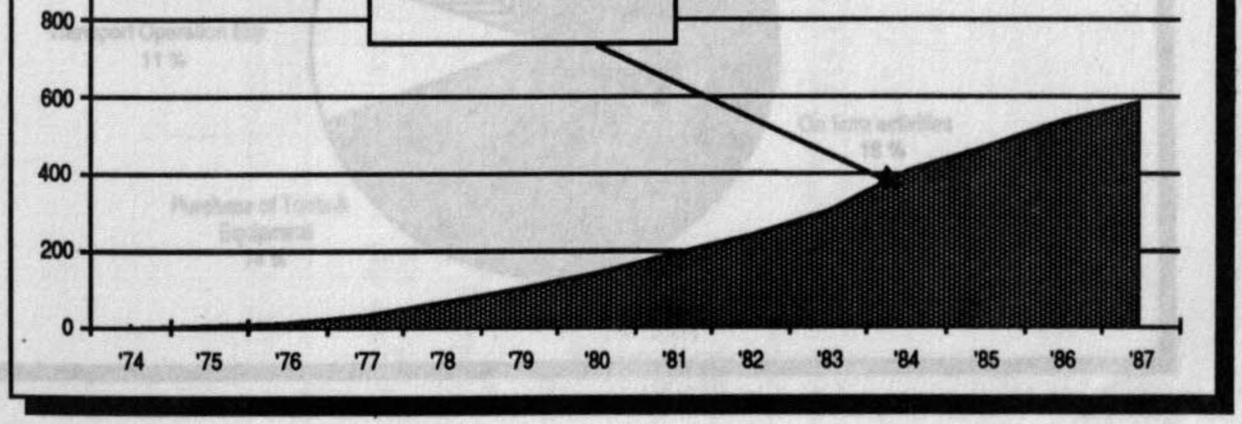
In 1987/88 the programme realized major achievements in many areas. On staff training, which formed a major area of projects staff skill development, about 85% of the targeted staff were reached. This included TAs and JTAs. The project was also involved in training various sections of local leaders. This included administrative chiefs, KANU leaders, school teachers etc,. Of this target group the project was able to reach up to 70% of the planned levels. The most important target sector for training was of course the farmers. It was important to train this target group so that through the training their attitudes and perception towards soil conservation could be changed. In the year the branch was able to train about 2.5 times more farmers than initially planned. This was very necessary since various issues arising from the new approach were to be clarified through such training and field days. Even with the withdrawal of government subsidy on cost of constructing structures, though increased campaigns and education, farmers were able to carry out construction works financially un-aided. By the end of the financial year under review 60% of targeted farms were terraced while 60% of the targeted length of cut off drains in metres were completed. About 74 km of artificial water ways was constructed while 90% of targeted number of gullies were controlled. On rehabilitation of eroded areas, about 70% was achieved while a total of more than 4,600 kms of river banks were pegged. There are very clear indications of better achievement in the future as the aims of the new strategy will be clearly understood by the affected community and our extension staff will have improved on their extension approach. We also expect higher achievements resulting from increased support from Provincial administration in community mobilization and also from the recently established Environmental Conservation Committees. The deployment of special staff to form a Catchment Planning Team at divisional level will greatly enhance achievements.

The districts received their **second allocation of funds very late or not at all.** By the end of the financial year the total expenditures under various items in the Districts, Provinces and Headquarters was close to 80% of the allocated funds and 75% of the agreed budget.

SOIL CONSERVATION ACHIVEMENTS

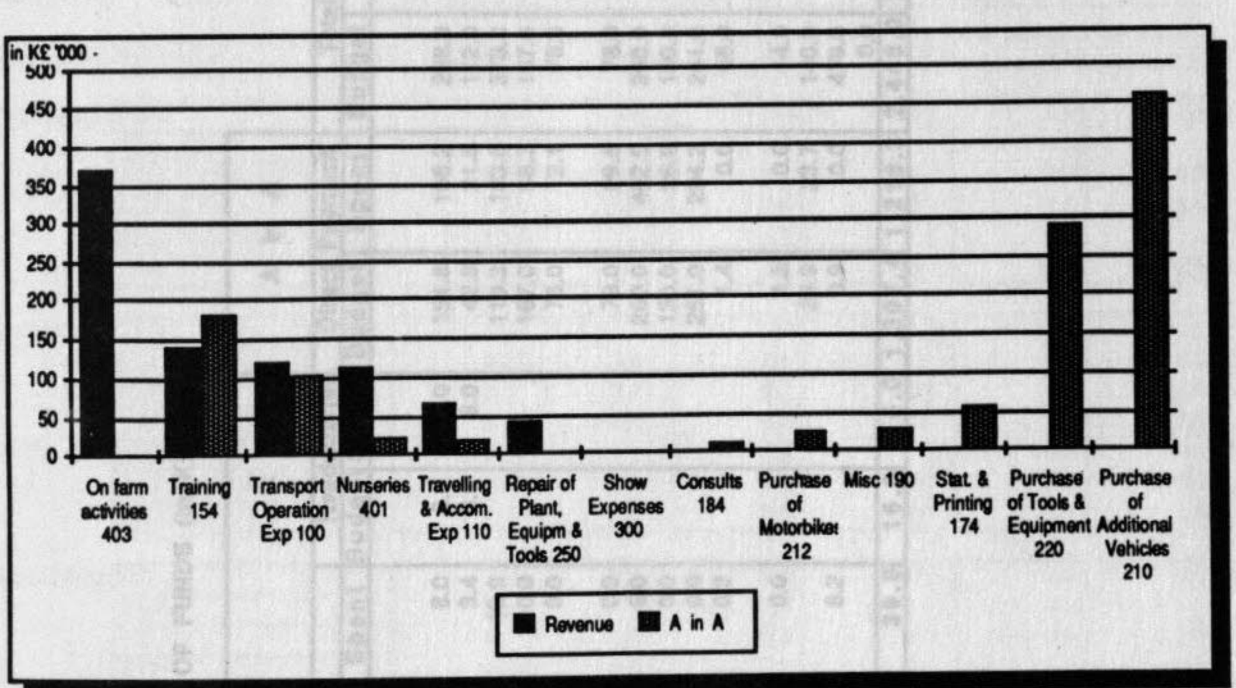


Above: Accumulated Number of Agricultural Staff Trained since 1975

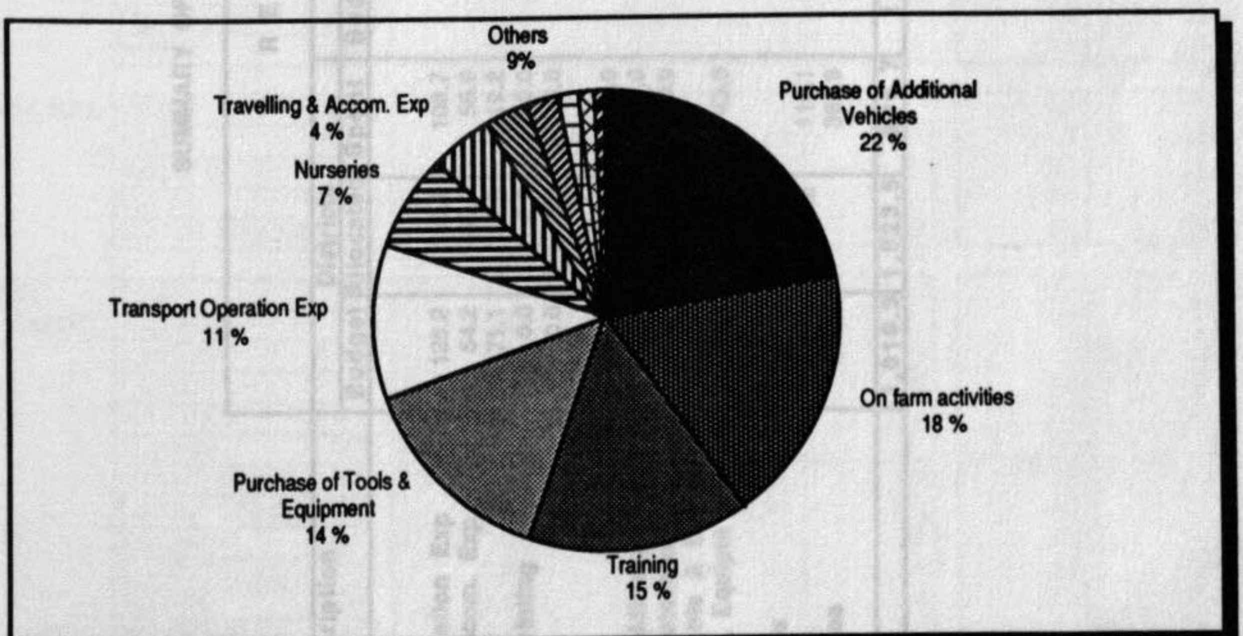


Above: Accumulated Number of Farms Terraced since 1974

SUMMARY OF EXPENDITURES

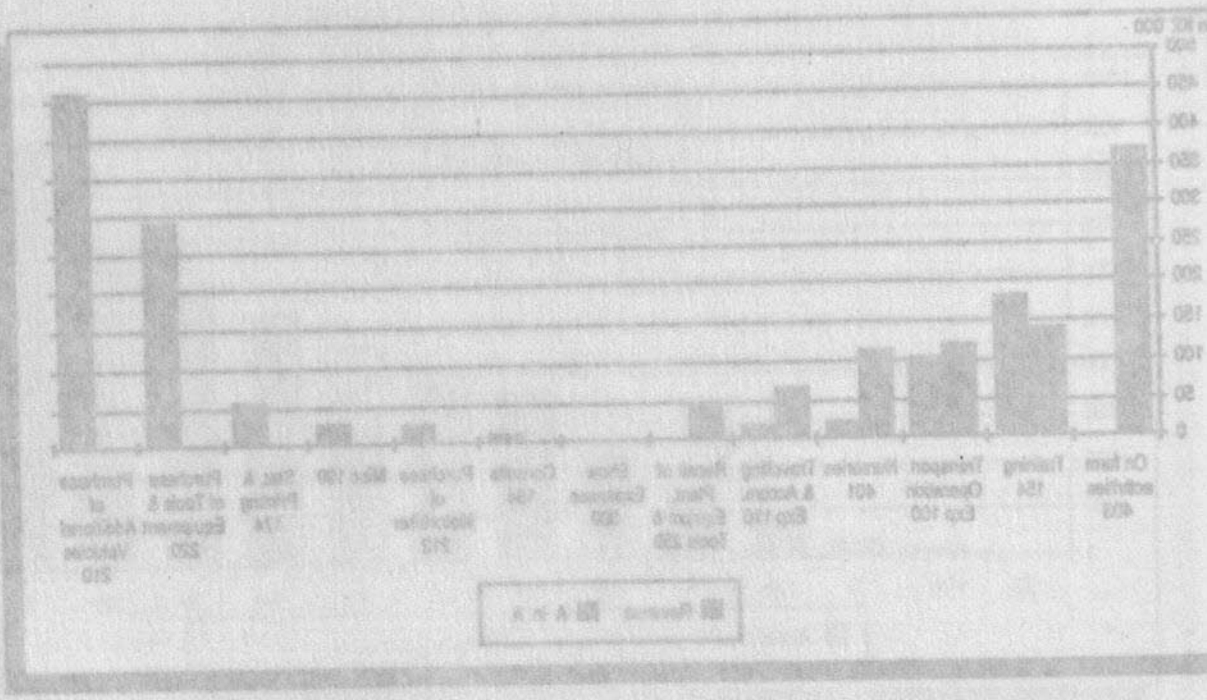


Above: Details of Actual spending of funds, through Ministry (Revenue) and Direct Payments (A in A)



Above: Breakdown of Total (Revenue & A in A) Expenditures.

SUMMARY OF EXPENDITURES



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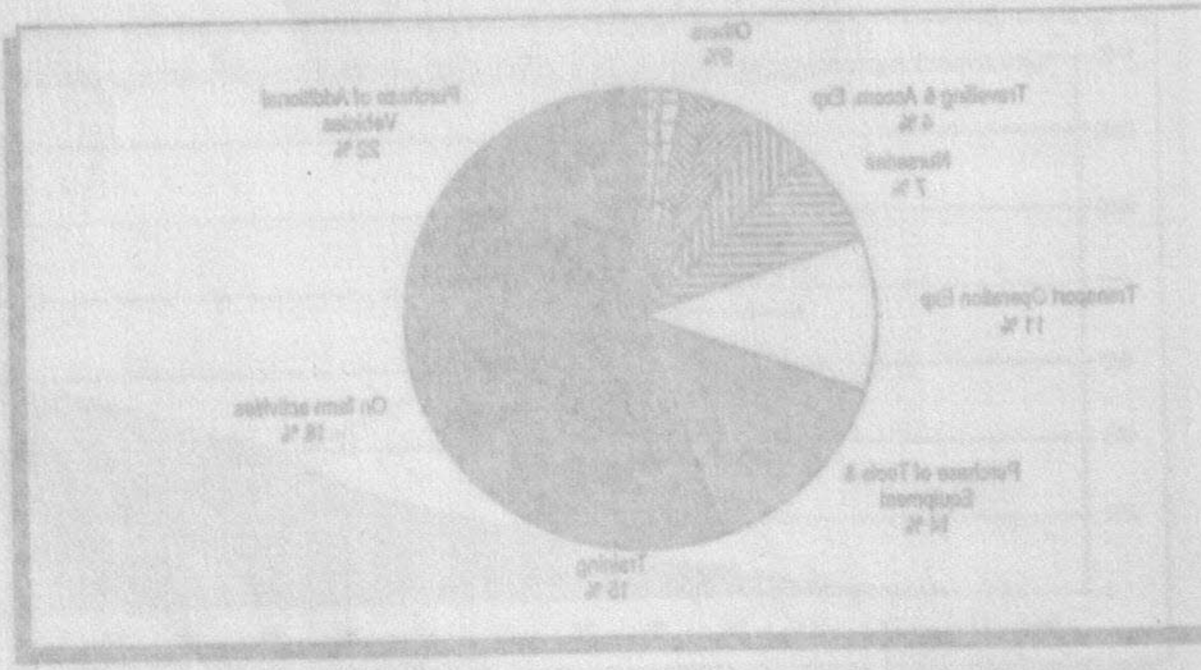

...: Breakdown of Total (Revenue & A in A) Expenditure

SUMMARY OF UTILIZATION OF FUNDS (In K£ '000)

Item	Description	REVENUE								A in A			
		Districts			Provinces			Headquarter		Direct Payment		Total	
		Budget	Allocated	Spent	Budget	Allocated	Spent	Budget	Spent	Budget	Spent	Budget	Spent
100	Transport Operation Exp	125.2	135.1	108.7	10.0	13.3	8.0	8.0	8.0	154.8	106.2	298.0	230.9
110	Travelling & Accom. Exp	54.2	66.7	55.9	7.0	6.7	3.4	8.0	8.0	42.8	21.5	112.0	88.8
154	Training	171.1	158.9	119.2	82.6	47.2	19.9			119.3	183.0	373.0	322.1
174	Stationary & Printing	0.0	0.0	0.0	0.0		0.0			167.0	58.7	167.0	58.7
184	Consultancies	0.0	0.0	0.0	0.0		0.0			76.0	12.1	76.0	12.1
190	Miscellaneous	0.0	0.0	0.0	0.0		0.0			78.0	29.5	78.0	29.5
210	Purchase of Additional Vehicles	0.0	0.0	0.0	0.0		0.0			260.0	462.5	260.0	462.5

[illegible]	[illegible]	0.0	0.0	0.0	0.0		0.0			130.0	26.9	130.0	26.9
220	Purchase of Tools & Equipment	0.0	0.0		0.0		0.0			251.0	294.2	251.0	294.2
250	Repair of Plant, Equipm & Tools	66.6	56.6	43.9	0.0	0.7	0.3			1.4	0.0	68.0	44.2
300	Show Expenses	0.0	0.0		12.7		0.0			1.3	0.0	14.0	0.0
401	Nurseries	115.1	606.2	115.1	0.0					24.9	23.7	140.0	138.8
403	On farm activities	478.1		362.9	0.0		8.2			0.9	0.0	479.0	371.1
												0.0	0.0
	Totals	**1,010.3**	**1,023.5**	**805.7**	**112.3**	**67.9**	**39.8**	**16.0**	**16.0**	**1,307.4**	**1,218.3**	**2,446.0**	**2,079.8**

UTILIZATION OF FUNDS (in K£ '000')

Utilization of Funds 1

PROVINCE	*DISTRICT*		Transport- 100		Travel/ Accom- 110		Training- 154	
			Allocated	Spent	Allocated	Spent	Allocated	Spent
NAIROBI	NAIROBI	111	1.0	0.0	0.2	0.0	2.1	1.6
CENTRAL	PDA	201	3.6	3.5	1.0	1.0	7.9	7.8
	KIAMBU	211	4.0		1.0		6.1	
	KIRINYAGA	221	4.0	4.0	3.0	3.0	4.3	4.3
	MURANGA	231	9.7	9.7	1.8	1.8	6.4	6.4
	NYANDARUA	241	3.3		1.3		6.4	
	NYERI	251	5.9	5.6	7.6	7.5	11.9	10.5
COAST	PDA	301	1.5		1.0		11.5	
	KILIFI	311	3.7	3.7	1.6	1.6	4.3	4.3
	KWALE	321	2.7	2.7	2.0	2.0	2.9	2.9
	LAMU	331	3.5	3.5	0.9	0.9	1.3	1.3
	MOMBASA	341	1.1		0.4		1.0	
	TAITA TAVETA	351	4.1	0.1	1.3	0.0	5.6	0.0
	TANA RIVER	361	2.2	2.1	0.8	0.8	1.9	1.6
EASTERN	PDA	401	1.6	1.6	0.7	0.7	6.6	3.8
	EMBU	411	3.3		1.3		4.2	
	ISIOLO	421	1.6	1.5	0.4	0.4	3.5	3.5
	KITUI	431	0.0	0.0	0.0	0.0	3.4	3.3
	MACHAKOS	441	4.9	4.9	4.5	4.5	6.7	6.7
	MARSABIT	451	3.6	3.6	1.6	1.6	1.9	1.9
	MERU	461	5.5	5.4	3.1	3.1	5.9	5.9
NORTH EASTERN	PDA	501	1.0		1.0		5.7	
	GARISSA	511	2.2	2.2	1.1	1.1	2.1	2.1
	MANDERA	521	1.8	1.8	1.0	1.0	2.2	2.2
	WAJIR	531	1.4	1.2	1.0	1.0	1.4	0.9
NYANZA	PDA	601	1.4		1.0		5.7	
	KISII	611	3.6	3.6	1.3	1.3	6.9	6.9
	KISUMU	621	3.6		1.7		3.2	
	SIAYA	631	2.2		0.9		7.0	
	SOUTH NYANZ	641	3.3	3.1	1.7	1.7	5.6	5.6
RIFT VALLEY	PDA	701	2.7		1.0		2.3	
	KAJIADO	711	0.0		0.0		0.0	
	KERICHO	721	3.6	3.6	1.4	1.4	9.3	9.2
	LAIKIPIA	731	4.1	4.1	5.6	5.6	2.6	2.5
	NAKURU	741	3.0	2.7	2.0	1.3	2.3	2.2
	NAROK	751	2.5		1.3		2.0	
	TRANZ NZOIA	761	4.6	4.5	1.6	1.6	3.1	3.1
	UASIN GISHU	771	2.5	2.5	0.6	0.0	1.4	1.4
	BARINGO	811	3.0	3.0	1.3	1.3	3.4	3.1
	ELGEYO MARAK	821	3.8	3.8	1.6	1.6	4.3	4.2
	NANDI	831	3.3	3.3	1.3	1.3	3.4	2.9
	SAMBURU	841	2.2	2.2	1.0	1.0	1.7	1.6
	WEST POKOT	861	3.6	3.6	1.6	1.6	1.5	1.4
WESTERN	PDA	901	1.5	1.5	1.0	1.0	7.5	7.4
	BUNGOMA	911	4.4	4.4	1.0	1.0	4.0	4.0
	BUSIA	921	3.9	3.9	1.9	1.9	5.4	5.4
	KAKAMEGA	931	8.4	8.4	3.0	3.0	6.3	6.3
TOTAL			148.4	115.3	73.4	58.6	206.1	138.2

Utilization of Funds 2

PROVINCE	*DISTRICT*		Repairs 250		On Farm activities/ Nurseries 401/403		TOTAL	
			Allocated	Spent	Allocated	Spent	Allocated	Spent
NAIROBI	NAIROBI	111	0.7	0.0	2.0	0.9	6.0	2.5
CENTRAL	PDA	201	0.0	0.0	0.5	0.4	13.0	12.7
	KIAMBU	211	1.5		1.8		14.4	0.0
	KIRINYAGA	221	1.5	1.4	19.5	18.6	32.3	31.3
	MURANGA	231	1.5	1.4	39.1	38.4	58.5	57.7
	NYANDARUA	241	1.5	0.0	17.5	0.0	30.0	0.0
	NYERI	251	1.5	1.1	14.0	13.8	40.9	38.5
COAST	PDA	301	0.0		2.3		16.3	0.0
	KILIFI	311	1.5	0.5	11.5	11.5	22.6	21.6
	KWALE	321	1.5	1.4	12.6	12.4	21.7	21.4
	LAMU	331	1.5	1.3	1.2	0.9	8.4	7.9
	MOMBASA	341	1.5		1.8		5.8	0.0
	TAITA TAVETA	351	1.5	0.1	28.0	3.2	40.5	3.4
	TANA RIVER	361	1.5	0.0	5.5	5.4	11.9	9.9
EASTERN	PDA	401	0.0	0.0	2.0	1.0	10.9	7.1
	EMBU	411	1.5		25.0		35.3	0.0
	ISIOLO	421	1.5	1.4	2.5	2.5	9.5	9.3
	KITUI	431	1.5	1.3	5.0	5.0	9.9	9.6
	MACHAKOS	441	1.3	1.5	28.0	24.9	45.4	42.5
	MARSABIT	451	1.5	1.5	19.0	19.0	27.6	27.6
	MERU	461	1.5	0.6	30.0	29.9	46.0	44.9
NORTH EASTERN	PDA	501	0.0		1.3		9.0	0.0
	GARISSA	511	0.7	0.7	1.0	1.0	7.1	7.1
	MANDERA	521	0.7	0.7	0.0	0.0	5.7	5.7
	WAJIR	531	0.7	0.2	4.5	4.5	9.0	7.8
NYANZA	PDA	601	0.0		1.5		9.6	0.0
	KISII	611	1.5	1.5	14.2	14.2	27.5	27.5
	KISUMU	621	1.5		8.3		18.3	0.0
	SIAYA	631	1.5		18.8		30.4	0.0
	SOUTH NYANZ	641	1.5	1.1	19.2	19.1	31.3	30.6
RIFT VALLEY	PDA	701	0.7		17.3		24.0	0.0
	KAJIADO	711	1.5		12.3		13.8	0.0
	KERICHO	721	1.5	1.4	16.5	16.5	32.3	32.1
	LAIKIPIA	731	1.5	1.4	14.0	14.0	27.8	27.6
	NAKURU	741	1.5	0.6	17.3	16.8	26.1	23.6
	NAROK	751	1.5		10.0		17.3	0.0
	TRANZ NZOIA	761	1.5	1.1	24.0	24.0	34.8	34.3
	UASIN GISHU	771	1.5	0.1	37.6	37.6	43.6	41.6
	BARINGO	811	1.5	0.4	18.2	18.1	27.4	25.9
	ELGEYO MARAK	821	1.5	1.5	19.0	19.0	30.2	30.1
	NANDI	831	1.5	1.5	17.5	17.5	27.0	26.5
	SAMBURU	841	1.5	0.2	3.5	3.5	9.9	8.5
	WEST POKOT	861	1.5	1.1	21.5	21.5	29.7	29.2
WESTERN	PDA	901	0.0	0.0	1.3	1.3	11.3	11.2
	BUNGOMA	911	1.5	0.6	20.0	20.0	30.9	30.0
	BUSIA	921	1.5	14.8	20.0	20.0	32.7	46.0
	KAKAMEGA	931	1.5	1.5	24.8	24.3	44.0	43.5
TOTAL			57.3	43.9	632.4	480.7	1,117.6	836.7

PART I – BACKGROUND INFORMATION

AIMS AND OBJECTIVES

The broad objectives of the project were conservation of basic land resources (soil and water) in order to ensure increased and sustained farm productivity o long term basis. In view of the high dependence on agriculture for food, employment, foreign exchange earning and capital generation, land resource conservation has become of a major national concern. The results of proper conservation of these resources would not only provide adequate food for the growing population but would also improve the standard of living for the rural population.

The aims and objectives of the soil and water conservation project could be summarized as below;

a) To increase the area of arable land by intensifying soil and water conservation practices on steep slopes and in low rainfall areas.
b) To improve and sustain crop yield per unit area through proper land husbandry practices and management that conserve and replenish the soil nutrients either taken away by crops or lost through erosion processes.
c) To improve the soil conservation extension system through proper co-ordination and harmonization with the on going National Extension Programme.
d) To promote agro-forestry and tree planting in general on agricultural land for multiple purposes like soil stabilization, fuel wood, wind break, fodder and fruit.
e) Assist the community in planning and laying out conservation measures on selected catchments and on individual holdings.
f) Assist on gully treatment through demonstration and provision of the necessary tools.
g) Training various target groups to appreciate the importance of soil conservation in a bid to improving their conservation skills and/or changing their attitude towards conservation.

OTHER SOIL AND WATER CONSERVATION PROJECTS

Besides the National Soil and Water Conservation Project supported by SIDA, there are a number of other projects under the SWCB. Although these projects focussed on a broad aspects of agricultural development in general, soil and water conservation formed a major part of their overall programme.

The Ministry of Agriculture, through the Soil and Water Conservation Branch was actively and directly been involved in co-ordination of the activities of these projects as well as providing the necessary technical and administrative support.

The following are the major donor projects.

i) *Mutomo soil and water conservation project*. The major donor agency is the Danish International Development Overseas Agency (DANIDA).
ii) *Embu- Meru-Isiolo (EMI) soil and water conservation project* which is supported by the British through the Overseas Development Administration (ODA).
iii) *Winam Gulf soil and water conservation project*
iv) *Kitui Arid and semi-arid lands* supported by the USAID.
v) *Chemeron Dam Catchment*

PROJECT POLICY AND GUIDELINES

During the 1987/88 financial year, the Branch considered critically its approach versus achievements over the years and made a conclusion that some policy issues required slight modifications and the total approach required major improvements. Some of the major decisions made were as follows;

Subsides

One important policy decision made was the reduction of Government subsidy hitherto given to farmers carrying out conservation works on their farms.

Issue of Soil Conservation Tools

The soil conservation tools were mainly be issued to organized groups involved in soil conservation activities. These tools were be used by the group and the leader of the group will always account for the issued tools. The DAO in the area is keeping records of the issued tools.

Supply of Tree Seedlings

The seedlings were in many cases distributed to farmers carrying out soil conservation activities at predetermined nominal fee.

Modification of Approach

During the year, the catchment approach to soil conservation was launched. This was necessary as the approach would facilitate the following;

- catchment conservation problems identification
- logical planning and design
- concentration of staff effort for greater and faster work achievement
- encourage community involvement and participation by other ministries/ departments, NGOs etc,.
- more efficient staff deployment and productivity through clear duty assignment thus making them more accountable and more easy to supervise

During the year, the soil conservation programme has continued to promote sustainable and effective soil conservation measures in a bid to maintain high land productivity. The programme puts alot of effort to encourage the participation of the farming community in the planning and implementation of the conservation. It was realized that conservation would only succeed by involving the same man in conservation efforts through education and participation.

Under the CATCHMENT APPROACH launched during the 1987/88 financial year, the Government services were confined to planning of the catchment conservation measures, community organization and mobilization on the catchment resources, besides guidance and supervision of implementation works. Where the tools for construction were a constraint to implementation, the project made the necessary tools available to the organized groups through their respective D.A.Os.

The catchment approach strategy gave adequate emphasis on application of both biological and cultural soil conservation measures to supplement the usual excavation methods. The biological and cultural measures were seen to be applicable throughout the year and thus fitting well in the ongoing National Extension Programme. Moreover, more time would now be spent in advocating various conservation measures at each cropping season instead of waiting for the off-season period previously known as the peak period for soil conservation activities.

The catchment approach method was introduced with the main aim of promoting and accelerating the soil and water conservation activities throughout the year through more community participation and greater concentration of efforts by our field staff. However, areas outside the selected catchments continued receiving the usual soil and water conservation extension services. This included the promotion of agro-forestry, gully control and rehabilitation of over-grazed or eroded areas. The project continued to maintain about 44 soil conservation tree nurseries in the 40 project districts. These nurseries produced fruit seedlings as well as forest and fodder trees suitable for agro-forestry.

So far some positive effects of the catchment approach can be seen in a number of the leading districts.

PART II – ACTIVITIES DURING 1987/88

TRAINING

The training especially in the districts have had some difficulties to tackle during the year In spite of this the achievements can be regarded as satisfactory, except for some target groups and districts.

Totally about 4 500 people were trained, excluding farmers field days in which almost 80,000 people were trained.

A summary of the training achievements is given below, for more details see pages 17 - 21.

	TAs	TAs/JTAs Retraining	Teachers	Chiefs	Leadership	4K Club
Planned	1,070	1,783	3,460	1,312	2,444	288
District target	715	1,076	1,966	692	659	220
Achieved	525	1,216	1,589	362	503	289
% of district target	73 %	113 %	81 %	52 %	76 %	131 %

	Total, Except farmers field day	Farmers Field Day
Planned	10,351	36,542
District target	5 328	29 973
Achieved	4,482	72,112
% of district target	81 %	241 %

Outstanding districts as per total achievements excluding farmers field days were: Nyeri, Kakamega, Elgeyo Marakwet, Kitui and Trans Nzoia.

In training farmers during field days the best districts where Meru, Kericho and Trans Nzoia.

As 5 districts didn't report their performance it is difficult to analyze the training. The districts who failed to report were Kiambu, Muranga, Kilifi, Taita Taveta, Kisumu, Kajiado and Narok.

All provinces except Western and Central Province failed to report their achievements.

PART II – ACTIVITIES DURING 1987/88

TRAINING

The training especially in the districts have had some difficulties to tackle during the year In spite of this the achievements can be regarded as satisfactory, except for some target groups and districts.

Totally about 4 500 people were trained, excluding farmers field days in which almost 80,000 people were trained.

A summary of the training achievements is given below, for more details see pages 17 - 21.

	TAs	TAs/JTAs Retraining	Teachers	Chiefs	Leadership	4K Club
Planned	1,070	1,793	3,490	1,312	2,444	285
District target	715	1,076	1,966	692	690	220
Achieved	525	1,216	1,589	362	503	290
% of district target	73 %	113 %	81 %	52 %	73 %	131 %

	Total, Except farmers field day	Farmers Field Day
Planned	10,381	38,542
District target	5 328	29 973
Achieved	4,482	72,113
% of district target	83 %	241 %

Outstanding districts as per total achievements excluding farmers field days were: Nyeri, Kakamega, Elgeyo Marakwet, Kitui and Trans Nzoia.

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All provinces except Western and Central Province failed to report their achievements.

Comments on Achievements

Districts

As indicated in the beginning various factors have disrupted the training in the districts during the year.

1. **The funds were split into two half-yearly allocations. In many cases training funds were only partially allocated thus necessitating a revision of targets.**

2. **Two very important National exercises were conducted during the year i.e the KANU registrations and the general elections. These two exercises needed assistance from the officers in the districts and the provinces.**

   As the elections naturally were given priority some courses which were scheduled during these periods had to be cancelled. Especially it can be pointed out that the chiefs courses had low achievements as the chiefs by necessity were heavily involved in the national exercises.

4. **It has been identified that several districts are lacking proper venues for the training. Either there is no FTC or the FTC is booked very early for other courses, hence the money allocated (70/= per day per person) has been too little in order to conduct training, in line with the targets.**

   It must be pointed out that some of the districts only reported this in the annual report to Headquarters, which hence couldn't take any corrective measures. This should instead preferably have been reported during the budget discussions or during the year in consideration.

5. **Some districts have reported that inadequate transport facilities is a constraint. This is for transport to and from the venues, and the excursions.**

6. **Several districts have put in a lot of efforts in farmers field days. They feel that it is better to train the farmers in a real field situation instead of taking them to FTCs etc. This is not a bad move or constraint but should instead be encouraged.**

As a summary, The biggest constraint in the district training is the irregularity and insecurity when it comes to the allocation of funds in the sense that funds are not distributed according to the agreed annual workplan.

Provinces

No further returns since the semi annual report have been issued from the provinces with the exception from Western Province.

However the province have conducted some seminars, but the exact number of participants and target groups can't be stated.

4 provinces have conducted soil conservation officers retraining courses together with Headquarters. These will be further elaborated under Headquarters training.

Training at Headquarters

The following achievements were reached at headquarter.

	National Seminars	Officers Retraining	Training of Trainers
Planned	150	0	20
Achieved	90	157	17
% Achieved	60%	∞	85%

National Seminars

The initial plan for national seminars were reduced due to the following reasons:

1. The target groups for National Seminars was changed. In the past all AOs and TOs have been trained at national level. However it was felt that we should concentrate more on the officers spending most of their time with soil conservation i.e. Soil conservation officers and extension officers, during two week courses The rest of the Agricultural officers should be trained by the provinces during one week.

   This move has as much as possible been implemented during this year.

2. Resources from the two remaining national seminars were transferred over to Soil Conservation Officers retraining seminars which were held for one week in each province.

The national seminars have had 100% attendance. They increasingly been made more practical, with more of time spent out in the field. An increasing number of Kenyan resource persons have been engaged in the seminars. Experience however shows that some participants other than principal target should be invited, i.e range, livestock, forestry and research in order to stimulate exchange of experience and ideas.

During the seminars we also have had participants drawn from the East African Region. Two main venues have been used i.e. Molo and Nyeri.

Comments on other training activities

Soil Conservation Officers Retraining

According to the review missions recommendations and the Branches feelings this course was introduced during the year. Its duration was 1 week, and all Soil Conservation Officers in the following provinces were trained: Central, Rift Valley, Nyanza and Western. Rift Valley was trained during two seminars

The main objectives of these seminars were:

1. Correct some common technical mistakes.
2. Develop messages for the incorporation of Soil Conservation in the T & V System.
3. Bring the soil conservation officers together in order to exchange ideas.
4. Clarify new policy issues i.e. catchment approach.

5. **Identify problems and constraints in the field.**

A big portion of the time was spent in the field with the groups trying to solve different tasks. The Soil Conservation Officers very actively worked in groups and produced different write-ups, from whose areas specific soil conservation recommendations for agroecological zones is the most important.

The experience from this type of training was very positive, hopefully it develops the analytical capacity of the participants. Also recommendations for soil conservation can be adapted. In the future we will have more of these seminars, each time with a different topic.

The Headquarters has not been able to document and publicize the experience from these seminars accordingly. The material is there, but time to edit the reports is missing.

Training of Trainers

This course was conducted mainly by Mrs Lindhe and Mr. Mbeche, at Duduville, Nairobi.

As stated in earlier reports, the course is very much needed, and gives the participants better organizing and teaching skills.

Study trips

Mr. P.N. Njoroge and Mrs L. Omoro went for a one month course in energy and forestry in Sweden.

In November Mr. Mbegera made a study and preparatory trip to Tanzania. This was followed by a one week study trip by 18 farmers and government officers to Arusha, Mbulu, and Dodoma regions. Headquarters and PPCSC&A were represented.

In December 15 officers and farmers were sent for a soil conservation tour to Rwanda.

In January Mr. Mbegera went for the ISCO - International Conference in Thailand. He held a successful exhibition of the Kenyan Soil Conservation programme.

Formal Training

The 5 TAs and 5 Diploma holders supposed to go for Diploma and BA grade could not enter as planned. Processing of the scholarships was delayed and therefore the Ministry could not get them places in the local colleges and universities. However, four out of the agreed five places for M. Sc. in Agricultural Engineering (with land and water management option) were filled.

Visitors

The National Seminars were attended by 10 Tanzanians 4 Ethopians, 11 Zambians and 5 Swedes during the year. Two Ethopians participated in a soil conservation officers retraining course.

In June the branch hosted a team from Malawi.

Training Material

The development of training material has not been possible according to plan, mainly due to time pressure of the officers involved.

The situation is as follows:

1. **Farmers booklet:** It was regarded as almost finished, however at a late stage a committee evaluated it and found that it should be revised. Constructive proposals for changes were made, but it will probably not be in print before October 1988.

2. **TAs Handbook**: No progress, the assigned officers have had no time to work on it.

3. **Flipcharts** - No progress,

4. **Posters**: Three new posters are almost ready for print.

5. **Slideseries:** Five series are half complete through Mr. Omushieni however they need some modification and completion.

6. Curriculum for soil conservation courses - still in draft form.

7. Inventory of new soil conservation films - no progress.

8. Reference library at Headquarters - not started.

Summary of training activities

Training is doing fairly well. At districts the main constraint is the confusion of funds and training venues. The collaboration between provinces and headquarters have been strengthened. Provinces are however still not conducting training in a satisfactory manner.

Headquarters has no constraints when it comes to resources in money and transport but personnel is very much involved in daily routines and don't have much time over to develop new material.

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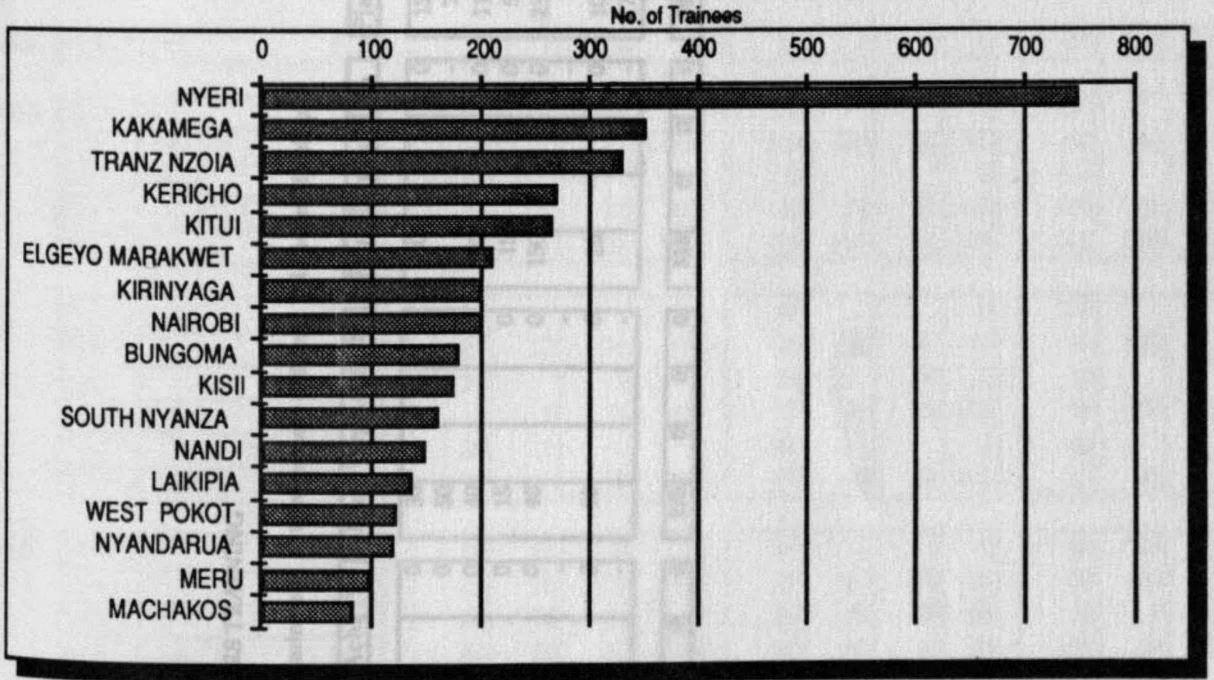
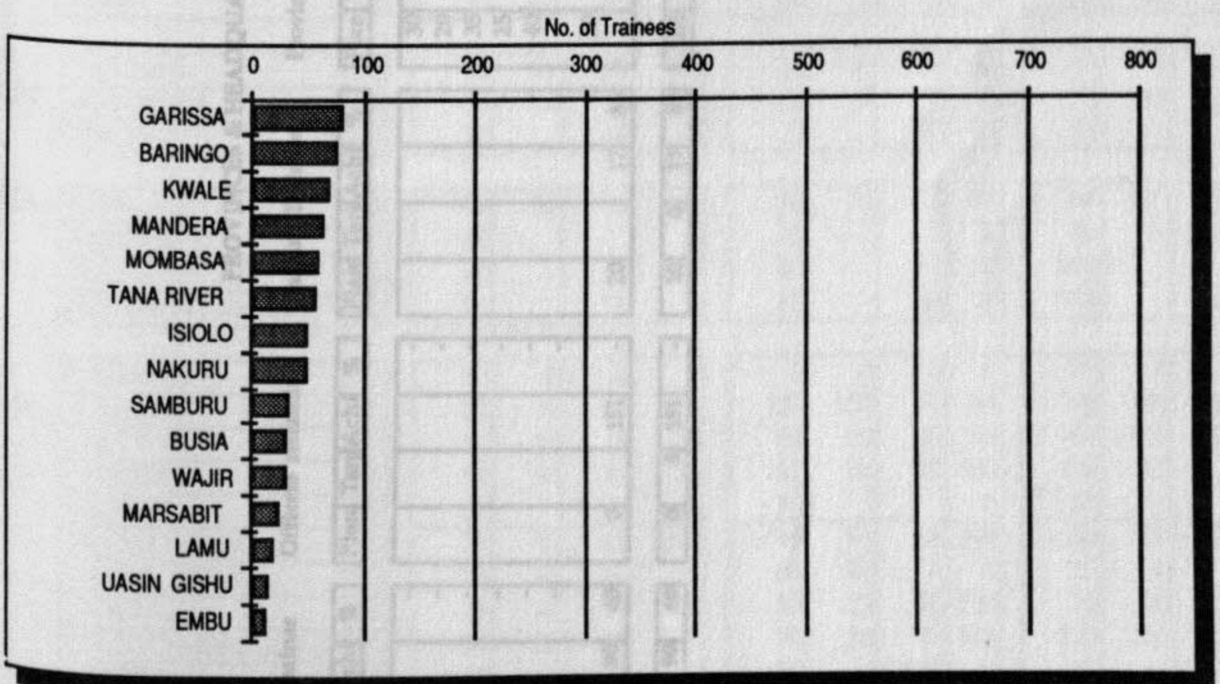
SUMMARY OF TRAINING





Above Charts show District Reports in Training (Exluding Farmers Field Days) Achieved

Table of Province Training

PROVINCES & HEADQUARTERS TRAINING

PROVINCE		National Seminar				Officers retraining				Training Trainers				Province Seminars				Government Officers				Leadership ship II				Total			
		Plan	Targ	Achi	%	Plan	Targ	Achi	%	Plan	Targ	Achi	%	Plan	Targ	Achi	%	Plan	Targ	Achi	%	Plan	Targ	Achi	%	Plan	Targ	Achi	%
CENTRAL	201				-				-				-	30			0	30			0	90			0	150	0	0	0
COAST	301				-				-				-	20			0	50			0				-	70	0	0	0
EASTERN	401				-				-				-	35			0	40			0	40			0	115	0	0	0
NORTH EASTERN	501				-				-				-	25			0	15			0	15			0	55	0	0	0
NYANZA	601				-				-				-	40			0	40			0	150			0	230	0	0	0
RIFT VALLEY	701				-				-				-				-				-				-	0	0	0	-
WESTERN	901				-				-				-	30			0	50			0	20			0	100	0	0	0
HEADQUARTER	31	150		90	60	0		151	-	20		17	85	-			-				-				-	170	0	258	152
TOTALS		150	0	90	60	0	0	151	-	20	0	17	85	180	0	0	0	225	0	0	0	315	0	0	0	890	0	258	152

DISTRICT TRAINING (Number of Trainees)

PROVINCE	DISTRICT		T.A./JTA Work Plan	T.A./JTA Distr Targ	T.A./JTA Achiment	T.A./JTA %	T.A.s retraining Work Plan	T.A.s retraining Distr Targ	T.A.s retraining Achiment	T.A.s retraining %	Teachers Work Plan	Teachers Distr Targ	Teachers Achiment	Teachers %
NAIROBI	NAIROBI	110	0	0	0	0	20	0	0	0	30	0	150	· 0
CENTRAL	KIAMBU	210	35			0	40			0	150			0
	KIRINYAGA	220	20	20	16	80	100	100	92	92	60	60	49	82
	MURANGA	230	30			0	150			0	100			0
	NYANDARUA	240	30	30	15	50	100	30	20	67	100	50	35	70
	NYERI	250	30	30	30	100	120	120	120	100	500	500	600	120
COAST	KILIFI	310	20			0	48			0	120			0
	KWALE	320	25	25	24	96	30	30	20	67	40	40	25	63
	LAMU	330	14		0	0	13		20	0	19		0	0
	MOMBASA	340	5	5	5	100	10	10	10	100	70	170	40	24
	TAITA TAVETA	350	20			0	60			0	60			0
	TANA RIVER	360	10	10	12	120	15	15	16	107	45	45	0	0
EASTERN	EMBU	410	30	15	0	0	60	30	0	0	30	15	0	0
	ISIOLO	420	36	20	16	80	17	10	10	100	50	30	0	0
	KITUI	430	30	30	0	0	70	70	60	86	0	0	0	0
	MACHAKOS	440	80	80	27	34	80	80	30	38	100	40	28	70
	MARSABIT	450	10	10	0	0	25	25	15	60	0	0	0	0
	MERU	460	25	45	43	96	50	0	0	0	120	50	25	50
NORTH EASTERN	GARISSA	510	20	20	53	265	10	10	28	280	5	5	0	0
	MANDERA	520	36	36	25	69	0	0	0	0	0	40	40	100
	WAJIR	530	20		14	0	0		17	0	15			0
NYANZA	KISII	610	80	80	30	38	30	30	25	83	100	100	80	80
	KISUMU	620	40			0	40			0	30			0
	SIAYA	630	30			0	40			0	200			0
	SOUTH NYANZA	640	25		11	0	60		60	0	270		60	0
RIFT VALLEY	KAJIADO	710	30	0	0	0	5	0	0	0	60	0	0	0
	KERICHO	720	30	30	36	120	130	130	70	54	270	140	62	44
	LAIKIPIA	730	10	10	8	80	50	50	49	98	100	100	25	25
	NAKURU	740	32	32	18	56	32	32	32	100	126	43	0	0
	NAROK	750	22			0	10			0	25			0
	TRANZ NZOIA	760	25	15	15	100	40	98	98	100	40	50	29	58
	UASIN GISHU	770	25	22	14	64	50	56	0	0	25	0	0	0
	BARINGO	810	25	30	20	67	30	25	30	120	75	30	0	0
	ELGEYO MARAKWET	820	30	30	20	67	50	50	50	100	120	120	72	60
	NANDI	830	25		0	0	30		115	0	45		34	0
	SAMBURU	840	10	0	0	0	20	25	18	72	40	0	0	0
	WEST POKOT	860	10	10	19	190	25	25	69	276	30	30	0	0
WESTERN	BUNGOMA	910	30	15	0	0	70	0	114	0	70	78	35	45
	BUSIA	920	30	30	19	63	30	0	0	0	20	30	0	0
	KAKAMEGA	930	35	35	33	94	25	25	28	112	200	200	200	100
GRAND TOTAL			1,070	715	523	73	1,785	1,076	1,216	113	3,460	1,966	1,589	81

UTILIZATION OF FUNDS (in K£ '000')

Utilization of Funds 2

PROVINCE	DISTRICT		Repairs 250 Allocated	Repairs 250 Spent	On Farm activities/ Nurseries 401/403 Allocated	On Farm activities/ Nurseries 401/403 Spent	TOTAL Allocated	TOTAL Spent
NAIROBI	NAIROBI	111	0.7	0.0	2.0	0.9	6.0	2.5
CENTRAL	PDA	201	0.0	0.0	0.5	0.4	13.0	12.7
	KIAMBU	211	1.5		1.8		14.4	0.0
	KIRINYAGA	221	1.5	1.4	19.5	18.6	32.3	31.3
	MURANGA	231	1.5	1.4	39.1	38.4	58.5	57.7
	NYANDARUA	241	1.5	0.0	17.5	0.0	30.0	0.0
	NYERI	251	1.5	1.1	14.0	13.8	40.9	38.5
COAST	PDA	301	0.0		2.3		16.3	0.0
	KILIFI	311	1.5	0.5	11.5	11.5	22.6	21.6
	KWALE	321	1.5	1.4	12.6	12.4	21.7	21.4
	LAMU	331	1.5	1.3	1.2	0.9	8.4	7.9
	MOMBASA	341	1.5		1.8		5.8	0.0
	TAITA TAVETA	351	1.5	0.1	28.0	3.2	40.5	3.4
	TANA RIVER	361	1.5	0.0	5.5	5.4	11.9	9.9
EASTERN	PDA	401	0.0	0.0	2.0	1.0	10.9	7.1
	EMBU	411	1.5		25.0		35.3	0.0
	ISIOLO	421	1.5	1.4	2.5	2.5	9.5	9.3
	KITUI	431	1.5	1.3	5.0	5.0	9.9	9.6
	MACHAKOS	441	1.3	1.5	28.0	24.9	45.4	42.5
	MARSABIT	451	1.5	1.5	19.0	19.0	27.6	27.6
	MERU	461	1.5	0.6	30.0	29.9	46.0	44.9
NORTH EASTERN	PDA	501	0.0		1.3		9.0	0.0
	GARISSA	511	0.7	0.7	1.0	1.0	7.1	7.1
	MANDERA	521	0.7	0.7	0.0	0.0	5.7	5.7
	WAJIR	531	0.7	0.2	4.5	4.5	9.0	7.8
NYANZA	PDA	601	0.0		1.5		9.6	0.0
	KISII	611	1.5	1.5	14.2	14.2	27.5	27.5
	KISUMU	621	1.5		8.3		18.3	0.0
	SIAYA	631	1.5		18.8		30.4	0.0
	SOUTH NYANZ	641	1.5	1.1	19.2	19.1	31.3	30.6
RIFT VALLEY	PDA	701	0.7		17.3		24.0	0.0
	KAJIADO	711	1.5		12.3		13.8	0.0
	KERICHO	721	1.5	1.4	16.5	16.5	32.3	32.1
	LAIKIPIA	731	1.5	1.4	14.0	14.0	27.8	27.6
	NAKURU	741	1.5	0.6	17.3	16.8	26.1	23.6
	NAROK	751	1.5		10.0		17.3	0.0
	TRANZ NZOIA	761	1.5	1.1	24.0	24.0	34.8	34.3
	UASIN GISHU	771	1.5	0.1	37.6	37.6	43.6	41.6
	BARINGO	811	1.5	0.4	18.2	18.1	27.4	25.9
	ELGEYO MARAK	821	1.5	1.5	19.0	19.0	30.2	30.1
	NANDI	831	1.5	1.5	17.5	17.5	27.0	26.5
	SAMBURU	841	1.5	0.2	3.5	3.5	9.9	8.5
	WEST POKOT	861	1.5	1.1	21.5	21.5	29.7	29.2
WESTERN	PDA	901	0.0	0.0	1.3	1.3	11.3	11.2
	BUNGOMA	911	1.5	0.6	20.0	20.0	30.9	30.0
	BUSIA	921	1.5	14.8	20.0	20.0	32.7	46.0
	KAKAMEGA	931	1.5	1.5	24.8	24.3	44.0	43.5
TOTAL			57.3	43.9	632.4	480.7	1,117.6	836.7

PART I – BACKGROUND INFORMATION

AIMS AND OBJECTIVES

The broad objectives of the project were conservation of basic land resources (soil and water) in order to ensure increased and sustained farm productivity o long term basis. In view of the high dependence on agriculture for food, employment, foreign exchange earning and capital generation, land resource conservation has become of a major national concern. The results of proper conservation of these resources would not only provide adequate food for the growing population but would also improve the standard of living for the rural population.

The aims and objectives of the soil and water conservation project could be summarized as below;

a) To increase the area of arable land by intensifying soil and water conservation practices on steep slopes and in low rainfall areas.
b) To improve and sustain crop yield per unit area through proper land husbandry practices and management that conserve and replenish the soil nutrients either taken away by crops or lost through erosion processes.
c) To improve the soil conservation extension system through proper co-ordination and harmonization with the on going National Extension Programme.
d) To promote agro-forestry and tree planting in general on agricultural land for multiple purposes like soil stabilization, fuel wood, wind break, fodder and fruit.
e) Assist the community in planning and laying out conservation measures on selected catchments and on individual holdings.
f) Assist on gully treatment through demonstration and provision of the necessary tools.
g) Training various target groups to appreciate the importance of soil conservation in a bid to improving their conservation skills and/or changing their attitude towards conservation.

OTHER SOIL AND WATER CONSERVATION PROJECTS

Besides the National Soil and Water Conservation Project supported by SIDA, there are a number of other projects under the SWCB. Although these projects focussed on a broad aspects of agricultural development in general, soil and water conservation formed a major part of their overall programme.

The Ministry of Agriculture, through the Soil and Water Conservation Branch was actively and directly been involved in co-ordination of the activities of these projects as well as providing the necessary technical and administrative support.

The following are the major donor projects.

i) *Mutomo soil and water conservation project*. The major donor agency is the Danish International Development Overseas Agency (DANIDA).
ii) *Embu- Meru-Isiolo (EMI) soil and water conservation project* which is supported by the British through the Overseas Development Administration (ODA).
iii) *Winam Gulf soil and water conservation project*
iv) *Kitui Arid and semi-arid lands* supported by the USAID.
v) *Chemeron Dam Catchment*

PROJECT POLICY AND GUIDELINES

During the 1987/88 financial year, the Branch considered critically its approach versus achievements over the years and made a conclusion that some policy issues required slight modifications and the total approach required major improvements. Some of the major decisions made were as follows;

Subsides

One important policy decision made was the reduction of Government subsidy hitherto given to farmers carrying out conservation works on their farms.

Issue of Soil Conservation Tools

The soil conservation tools were mainly be issued to organized groups involved in soil conservation activities. These tools were be used by the group and the leader of the group will always account for the issued tools. The DAO in the area is keeping records of the issued tools.

Supply of Tree Seedlings

The seedlings were in many cases distributed to farmers carrying out soil conservation activities at predetermined nominal fee.

Modification of Approach

During the year, the catchment approach to soil conservation was launched. This was necessary as the approach would facilitate the following;

- **catchment conservation problems identification**
- **logical planning and design**
- **concentration of staff effort for greater and faster work achievement**
- **encourage community involvement and participation by other ministries/ departments, NGOs etc,.**
- **more efficient staff deployment and productivity through clear duty assignment thus making them more accountable and more easy to supervise**

During the year, the soil conservation programme has continued to promote sustainable and effective soil conservation measures in a bid to maintain high land productivity. The programme puts alot of effort to encourage the participation of the farming community in the planning and implementation of the conservation. It was realized that conservation would only succeed by involving the same man in conservation efforts through education and participation.

Under the CATCHMENT APPROACH launched during the 1987/88 financial year, the Government services were confined to planning of the catchment conservation measures, community organization and mobilization on the catchment resources, besides guidance and supervision of implementation works. Where the tools for construction were a constraint to implementation, the project made the necessary tools available to the organized groups through their respective D.A.Os.

The catchment approach strategy gave adequate emphasis on application of both biological and cultural soil conservation measures to supplement the usual excavation methods. The biological and cultural measures were seen to be applicable throughout the year and thus fitting well in the ongoing National Extension Programme. Moreover, more time would now be spent in advocating various conservation measures at each cropping season instead of waiting for the off-season period previously known as the peak period for soil conservation activities.

The catchment approach method was introduced with the main aim of promoting and accelerating the soil and water conservation activities throughout the year through more community participation and greater concentration of efforts by our field staff. However, areas outside the selected catchments continued receiving the usual soil and water conservation extension services. This included the promotion of agro-forestry, gully control and rehabilitation of over-grazed or eroded areas. The project continued to maintain about 44 soil conservation tree nurseries in the 40 project districts. These nurseries produced fruit seedlings as well as forest and fodder trees suitable for agro-forestry.

So far some positive effects of the catchment approach can be seen in a number of the leading districts.

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Districts

As indicated in the beginning various factors have disrupted the training in the districts during the year.

1. **The funds were split into two half-yearly allocations. In many cases training funds were only partially allocated thus necessitating a revision of targets.**

2. **Two very important National exercises were conducted during the year i.e the KANU registrations and the general elections. These two exercises needed assistance from the officers in the districts and the provinces.**

   As the elections naturally were given priority some courses which were scheduled during these periods had to be cancelled. Especially it can be pointed out that the chiefs courses had low achievements as the chiefs by necessity were heavily involved in the national exercises.

4. **It has been identified that several districts are lacking proper venues for the training. Either there is no FTC or the FTC is booked very early for other courses, hence the money allocated (70/= per day per person) has been too little in order to conduct training, in line with the targets.**

   It must be pointed out that some of the districts only reported this in the annual report to Headquarters, which hence couldn't take any corrective measures. This should instead preferably have been reported during the budget discussions or during the year in consideration.

5. **Some districts have reported that inadequate transport facilities is a constraint. This is for transport to and from the venues, and the excursions.**

6. **Several districts have put in a lot of efforts in farmers field days. They feel that it is better to train the farmers in a real field situation instead of taking them to FTCs etc. This is not a bad move or constraint but should instead be encouraged.**

As a summary, The biggest constraint in the district training is the irregularity and insecurity when it comes to the allocation of funds in the sense that funds are not distributed according to the agreed annual workplan.

Provinces

No further returns since the semi annual report have been issued from the provinces with the exception from Western Province.

However the province have conducted some seminars, but the exact number of participants and target groups can't be stated.

4 provinces have conducted soil conservation officers retraining courses together with Headquarters. These will be further elaborated under Headquarters training.

Training at Headquarters

The following achievements were reached at headquarter.

	National Seminars	Officers Retraining	Training of Trainers
Planned	150	0	20
Achieved	90	157	17
% Achieved	60%	∞	85%

National Seminars

The initial plan for national seminars were reduced due to the following reasons:

1. The target groups for National Seminars was changed. In the past all AOs and TOs have been trained at national level. However it was felt that we should concentrate more on the officers spending most of their time with soil conservation i.e. Soil conservation officers and extension officers, during two week courses The rest of the Agricultural officers should be trained by the provinces during one week.

   This move has as much as possible been implemented during this year.

2. Resources from the two remaining national seminars were transferred over to Soil Conservation Officers retraining seminars which were held for one week in each province.

The national seminars have had 100% attendance. They increasingly been made more practical, with more of time spent out in the field. An increasing number of Kenyan resource persons have been engaged in the seminars. Experience however shows that some participants other than principal target should be invited, i.e range, livestock, forestry and research in order to stimulate exchange of experience and ideas.

During the seminars we also have had participants drawn from the East African Region. Two main venues have been used i.e. Molo and Nyeri.

Comments on other training activities

Soil Conservation Officers Retraining

According to the review missions recommendations and the Branches feelings this course was introduced during the year. Its duration was 1 week, and all Soil Conservation Officers in the following provinces were trained: Central, Rift Valley, Nyanza and Western. Rift Valley was trained during two seminars

The main objectives of these seminars were:

1. Correct some common technical mistakes.
2. Develop messages for the incorporation of Soil Conservation in the T & V System.
3. Bring the soil conservation officers together in order to exchange ideas.
4. Clarify new policy issues i.e. catchment approach.

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3. Bring the soil conservation officers together in order to exchange ideas.
4. Clarify new policy issues i.e. catchment approach.

5. **Identify problems and constraints in the field.**

A big portion of the time was spent in the field with the groups trying to solve different tasks. The Soil Conservation Officers very actively worked in groups and produced different write-ups, from whose areas specific soil conservation recommendations for agroecological zones is the most important.

The experience from this type of training was very positive, hopefully it develops the analytical capacity of the participants. Also recommendations for soil conservation can be adapted. In the future we will have more of these seminars, each time with a different topic.

The Headquarters has not been able to document and publicize the experience from these seminars accordingly. The material is there, but time to edit the reports is missing.

Training of Trainers

This course was conducted mainly by Mrs Lindhe and Mr. Mbeche, at Duduville, Nairobi.

As stated in earlier reports, the course is very much needed, and gives the participants better organizing and teaching skills.

Study trips

Mr. P.N. Njoroge and Mrs L. Omoro went for a one month course in energy and forestry in Sweden.

In November Mr. Mbegera made a study and preparatory trip to Tanzania. This was followed by a one week study trip by 18 farmers and government officers to Arusha, Mbulu, and Dodoma regions. Headquarters and PPCSC&A were represented.

In December 15 officers and farmers were sent for a soil conservation tour to Rwanda.

In January Mr. Mbegera went for the ISCO - International Conference in Thailand. He held a successful exhibition of the Kenyan Soil Conservation programme.

Formal Training

The 5 TAs and 5 Diploma holders supposed to go for Diploma and BA grade could not enter as planned. Processing of the scholarships was delayed and therefore the Ministry could not get them places in the local colleges and universities. However, four out of the agreed five places for M. Sc. in Agricultural Engineering (with land and water management option) were filled.

Visitors

The National Seminars were attended by 10 Tanzanians 4 Ethopians, 11 Zambians and 5 Swedes during the year. Two Ethopians participated in a soil conservation officers retraining course.

In June the branch hosted a team from Malawi.

Training Material

The development of training material has not been possible according to plan, mainly due to time pressure of the officers involved.

The situation is as follows:

1. **Farmers booklet:** It was regarded as almost finished, however at a late stage a committee evaluated it and found that it should be revised. Constructive proposals for changes were made, but it will probably not be in print before October 1988.

2. **TAs Handbook**: No progress, the assigned officers have had no time to work on it.

3. **Flipcharts** - No progress,

4. **Posters**: Three new posters are almost ready for print.

5. **Slideseries:** Five series are half complete through Mr. Omushieni however they need some modification and completion.

6. Curriculum for soil conservation courses - still in draft form.

7. Inventory of new soil conservation films - no progress.

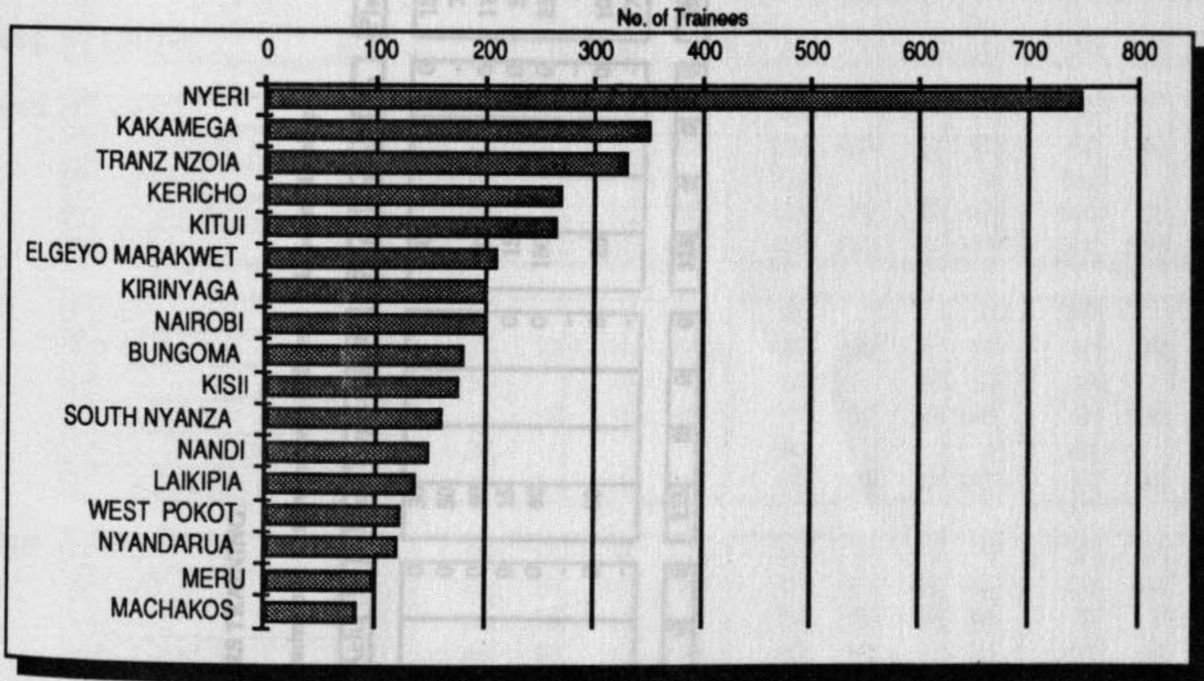
8. Reference library at Headquarters - not started.

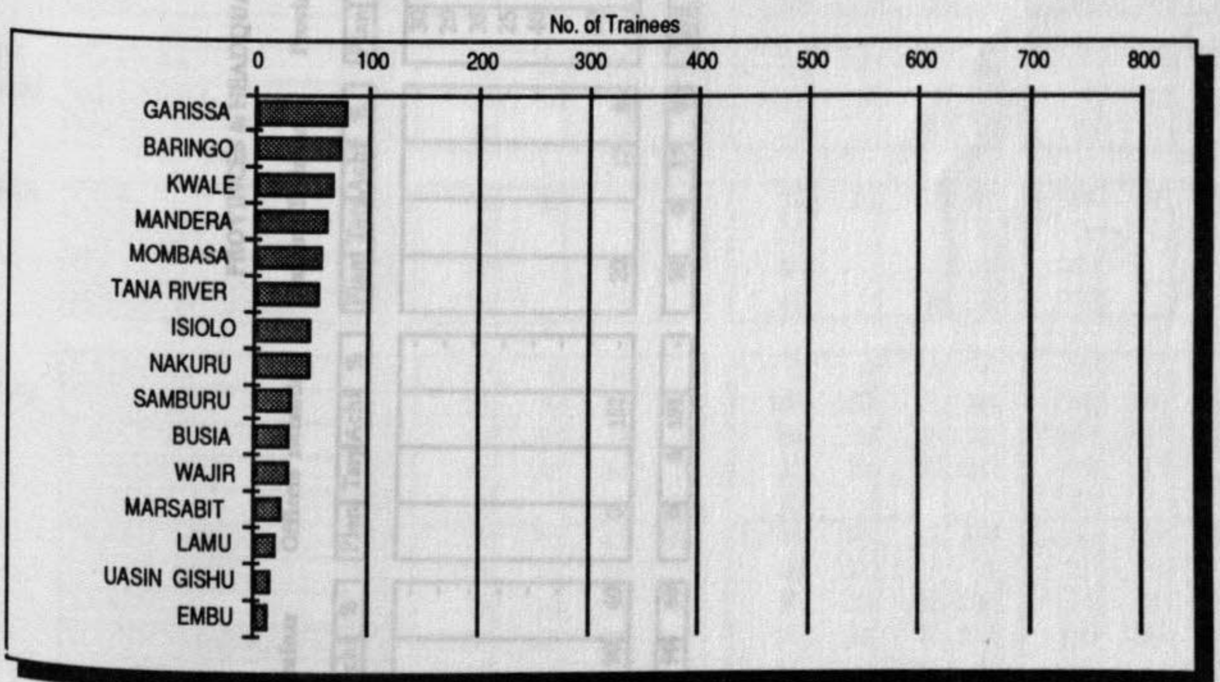
Summary of training activities

Training is doing fairly well. At districts the main constraint is the confusion of funds and training venues. The collaboration between provinces and headquarters have been strengthened. Provinces are however still not conducting training in a satisfactory manner.

Headquarters has no constraints when it comes to resources in money and transport but personnel is very much involved in daily routines and don't have much time over to develop new material.

Summary of Training





Above Charts show District Reports in Training (Exluding Farmers Field Days) Achieved

PROVINCES & HEADQUARTERS TRAINING

PROVINCE		National Seminar				Officers retraining				Training Trainers				Province Seminars				Government Officers				Leadership ship II				Total			
		Plan	Targ	Achi	%	Plan	Targ	Achi	%	Plan	Targ	Achi	%	Plan	Targ	Achi	%	Plan	Targ	Achi	%	Plan	Targ	Achi	%	Plan	Targ	Achi	%
CENTRAL	201				-				-				-	30			0	30			0	90			0	150	0	0	0
COAST	301				-				-				-	20			0	50			0				-	70	0	0	0
EASTERN	401				-				-				-	35			0	40			0	40			0	115	0	0	0
NORTH EASTERN	501				-				-				-	25			0	15			0	15			0	55	0	0	0
NYANZA	601				-				-				-	40			0	40			0	150			0	230	0	0	0
RIFT VALLEY	701				-				-				-				-				-				-	0	0	0	-
WESTERN	901				-				-				-	30			0	50			0	20			0	100	0	0	0
HEADQUARTER	31	150		90	60	0		151	-	20		17	85				-				-				-	170	0	258	152
TOTALS		150	0	90	60	0	0	151	-	20	0	17	85	180	0	0	0	225	0	0	0	315	0	0	0	890	0	258	152

Table of District Training 1

PROVINCE	DISTRICT	Code	T.A./JTA Work Plan	T.A./JTA Distr Targ	T.A./JTA Achiment	T.A./JTA %	T.A.s retraining Work Plan	T.A.s retraining Distr Targ	T.A.s retraining Achiment	T.A.s retraining %	Teachers Work Plan	Teachers Distr Targ	Teachers Achiment	Teachers %
NAIROBI	NAIROBI	110	0	0	0	0	20	0	0	0	30	0	150	0
CENTRAL	KIAMBU	210	35			0	40			0	150			0
	KIRINYAGA	220	20	20	16	80	100	100	92	92	60	60	49	82
	MURANGA	230	30			0	150			0	100			0
	NYANDARUA	240	30	30	15	50	100	30	20	67	100	50	35	70
	NYERI	250	30	30	30	100	120	120	120	100	500	500	600	120
COAST	KILIFI	310	20			0	48			0	120			0
	KWALE	320	25	25	24	96	30	30	20	67	40	40	25	63
	LAMU	330	14		0	0	13		20	0	19		0	0
	MOMBASA	340	5	5	5	100	10	10	10	100	70	170	40	24
	TAITA TAVETA	350	20			0	60			0	60			0
	TANA RIVER	360	10	10	12	120	15	15	16	107	45	45	0	0
EASTERN	EMBU	410	30	15	0	0	60	30	0	0	30	15	0	0
	ISIOLO	420	36	20	16	80	17	10	10	100	50	30	0	0
	KITUI	430	30	30	0	0	70	70	60	86	0	0	0	0
	MACHAKOS	440	80	80	27	34	80	80	30	38	100	40	28	70
	MARSABIT	450	10	10	0	0	25	25	15	60	0	0	0	0
	MERU	460	25	45	43	96	50	0	0	0	120	50	25	50
NORTH EASTERN	GARISSA	510	20	20	53	265	10	10	28	280	5	5	0	0
	MANDERA	520	36	36	25	69	0	0	0	0	0	40	40	100
	WAJIR	530	20		14	0	0		17	0	15			0
NYANZA	KISII	610	80	80	30	38	30	30	25	83	100	100	80	80
	KISUMU	620	40			0	40			0	30			0
	SIAYA	630	30			0	40			0	200			0
	SOUTH NYANZA	640	25		11	0	60		60	0	270		60	0
RIFT VALLEY	KAJIADO	710	30	0	0	0	5	0	0	0	60	0	0	0
	KERICHO	720	30	30	36	120	130	130	70	54	270	140	62	44
	LAIKIPIA	730	10	10	8	80	50	50	49	98	100	100	25	25
	NAKURU	740	32	32	18	56	32	32	32	100	126	43	0	0
	NAROK	750	22			0	10			0	25			0
	TRANZ NZOIA	760	25	15	15	100	40	98	98	100	40	50	29	58
	UASIN GISHU	770	25	22	14	64	50	56	0	0	25	0	0	0
	BARINGO	810	25	30	20	67	30	25	30	120	75	30	0	0
	ELGEYO MARAKWET	820	30	30	20	67	50	50	50	100	120	120	72	60
	NANDI	830	25		0	0	30		115	0	45		34	0
	SAMBURU	840	10	0	0	0	20	25	18	72	40	0	0	0
	WEST POKOT	860	10	10	19	190	25	25	69	276	30	30	0	0
WESTERN	BUNGOMA	910	30	15	0	0	70	0	114	0	70	78	35	45
	BUSIA	920	30	30	19	63	30	0	0	0	20	30	0	0
	KAKAMEGA	930	35	35	33	94	25	25	28	112	200	200	200	100
GRAND TOTAL			1,070	715	523	73	1,785	1,076	1,216	113	3,460	1,966	1,589	81

Table of District Training 2

DISTRICT TRAINING (Number of Trainees)

PROVINCE	DISTRICT		Chiefs				Leader-ship I				4K Club			
			Work Plan	Distr Targ	Achiment	%	Work Plan	Distr Targ	Achiment	%	Work Plan	Distr Targ	Achiment	%
NAIROBI	NAIROBI	110	0	0	0	0	50	0	50	0	0	0	0	0
CENTRAL	KIAMBU	210	40			0	0			0	0			0
	KIRINYAGA	220	30	35	0	0	60	20	15	75	60	60	29	48
	MURANGA	230	40			0	200			0	0			0
	NYANDARUA	240	76	45	30	67	50	20	20	100	0	0	0	0
	NYERI	250	24	24	0	0	100	0	0	0	120	0	0	0
COAST	KILIFI	310	14			0	0			0	0			0
	KWALE	320	20	20	0	0	0	0	0	0	0	0	0	0
	LAMU	330	8		0	0	0		0	0	0		0	0
	MOMBASA	340	4	4	4	100	0	0	0	0	0	0		0
	TAITA TAVETA	350	30			0	100			0	0			0
	TANA RIVER	360	40	17	4	24	10	50	26	52	0	0	0	0
EASTERN	EMBU	410	30	15	13	87	0	0	0	0	0	0	0	0
	ISIOLO	420	30	15	0	0	15	115	25	22	10	60	0	0
	KITUI	430	0	0	0	0	360	120	61	51	0	0	145	0
	MACHAKOS	440	40	40	0	0	0	0	0	0	0	0	0	0
	MARSABIT	450	51	51	10	20	0	0	0	0	0	0	0	0
	MERU	460	60	35	30	86	160	0	0	0	0	0	0	0
NORTH EASTERN	GARISSA	510	5	5	0	0	100	0	0	0	0	0	0	0
	MANDERA	520	18	18	0	0	45	45	0	0	0	0	0	0
	WAJIR	530	20			0	15			0	0			0
NYANZA	KISII	610	70	100	40	40	100	0	0	0	0	0	0	0
	KISUMU	620	30			0	20			0	0			0
	SIAYA	630	120			0	0			0	0			0
	SOUTH NYANZA	640	40		0	0	40		0	0	0		30	0
RIFT VALLEY	KAJIADO	710	26	0	0	0	0	0	0	0	90	0	0	0
	KERICHO	720	50	30	0	0	270	150	102	68	0	0	0	0
	LAIKIPIA	730	0	40	24	60	0	0	30	0	0	0	0	0
	NAKURU	740	43	0	0	0	0	0	0	0	0	0	0	0
	NAROK	750	18			0	20			0	0			0
	TRANZ NZOIA	760	15	38	35	92	14	104	93	89	0	60	60	100
	UASIN GISHU	770	20	0	0	0	0	0	0	0	0	0	0	0
	BARINGO	810	40	30	25	83	70	0	0	0	0	0	0	0
	ELGEYO MARAKWET	820	40		22	0	15		22	0	0	0	25	0
	NANDI	830	30			0	110			0	0			0
	SAMBURU	840	40	20	15	75	0	0	0	0	0	0	0	0
	WEST POKOT	860	20	20	20	100	0	0	15	0	0	40	0	0
WESTERN	BUNGOMA	910	40	0	0	0	0	0	31	0	0	0	0	0
	BUSIA	920	0	0	0	0	400	35	13	37	0	0	0	0
	KAKAMEGA	930	90	90	90	100	120	0	0	0	0	0	0	0
GRAND TOTAL			1,312	692	362	52	2,444	659	503	76	280	220	289	131

DISTRICT TRAINING (Number of Trainees)

PROVINCE	DISTRICT	Code	Total: Work Plan	Total: Distr Target	Total: Achievement	Total: %	Farmers Field Day: Work Plan	Farmers Field Day: Distr Target	Farmers Field Day: Achievement	Farmers Field Day: %
NAIROBI	NAIROBI	110	100	0	200	0	200	0		0
CENTRAL	KIAMBU	210	265	0	0	0	3,000			0
	KIRINYAGA	220	330	295	201	68	0	60	110	183
	MURANGA	230	520	0	0	0	3,600			0
	NYANDARUA	240	356	175	120	69	2,000	2,000	1,575	79
	NYERI	250	894	674	750	111	3,000	0	2,800	0
COAST	KILIFI	310	202	0	0	0	2,000			0
	KWALE	320	115	115	69	60	1,200	1,200	1,000	83
	LAMU	330	54	0	20	0	360		0	0
	MOMBASA	340	89	189	59	31	500	500	500	100
	TAITA TAVETA	350	270	0	0	0	3,000			0
	TANA RIVER	360	120	137	58	42	500	500	347	69
EASTERN	EMBU	410	150	75	13	17	2,000	1,500	2,840	189
	ISIOLO	420	158	250	51	20	259	5	1	20
	KITUI	430	460	220	266	121	0	0	0	0
	MACHAKOS	440	300	240	85	35	1,000	1,000	1,520	152
	MARSABIT	450	86	86	25	29	850	850	300	35
	MERU	460	415	130	98	75	1,120	10,000	45,780	458
NORTH EASTERN	GARISSA	510	140	40	81	203	0	0	60	0
	MANDERA	520	99	139	65	47	0	0	0	0
	WAJIR	530	70	0	31	0	0			0
NYANZA	KISII	610	380	310	175	56	400	400	300	75
	KISUMU	620	160	0	0	0	100			0
	SIAYA	630	390	0	0	0	3,000			0
	SOUTH NYANZA	640	435	0	161	0	270	60	14	23
RIFT VALLEY	KAJIADO	710	211	0	0	0	3,118	0	0	0
	KERICHO	720	750	480	270	56	0	0	8,160	0
	LAIKIPIA	730	160	200	136	68	360	6(no)	10(no)	
	NAKURU	740	233	107	50	47	960	0	0	0
	NAROK	750	95	0	0	0	200			0
	TRANZ NZOIA	760	134	365	330	90	1,000	10,000	5,105	51
	UASIN GISHU	770	120	78	14	18	120	6(no)	17(no)	
	BARINGO	810	240	115	75	65	75	500	300	60
	ELGEYO MARAKWET	820	255	200	211	106	600	15(no)	10(no)	
	NANDI	830	240	0	149	0	0			0
	SAMBURU	840	110	45	33	73	150	800	450	56
	WEST POKOT	860	85	125	123	98	200	0	250	0
WESTERN	BUNGOMA	910	210	93	180	194	800	0	100	0
	BUSIA	920	480	95	32	34	0	4(no)	4(no)	
	KAKAMEGA	930	470	350	351	100	600	600	600	100
GRAND TOTAL			10,351	5,328	4,482	84	36,542	29,975	72,112	241

(no)= Number of events

SCHOOL APPROACH

Following the resignation of the co-ordinator of this programme Mrs.Leah Kimani in 1986/87, Mr. J.M.Mugambi was assigned the duties of this programme. The programme continued to reach various schools, training the youths on importance of conservation. Many schools established their own tree nurseries and school gardens where some conservation methods were put into practice. Many schools started their 4-K Clubs through which this programme operated. It was necessary to train members of these clubs and out of 220 targeted members, a total of 289 were trained thus achieving up to 131% of the target.

The visits to the selected schools was primarily to discuss with the school administration proposals of organizing the interested pupils in farming

4-K Clubs and/or Young farmers clubs. Where such clubs were formed the Branch assisted them with the necessary technical advice and some basic tools and materials.

A brief study was conducted by Mr P.N.Njoroge with the objective of producing ideas that will be used in the development of effective implementation strategies.

As at December 31st 1987, there were 10,483 primary schools in Kenya with an annual output of 350,000 school leavers. Our earlier approach was based on direct recruitment of schools for assistance (mainly tree nurseries) without effective involvement of the extension staff and particularly our soil conservation officers at District and Divisional levels.

It is therefore proposed that the programme in the future, should be fully integrated with the work of the extension staff. Secondly there should be very strong linkages with other sections of the Ministry dealing with rural youth and liaison with Ministry of Education during the development of specific programme components.

Already the primary schools curriculum includes environmental conservation but the weight given in different classes needs to be re-examined. Our own staff also require intensive training on development of youth programmes in order to have appropriate strategies.

Soil Conservation Methods

For a long time conservation measures promoted by our extension staff were confined to mostly those structures that involved laborious excavation, notably the Fanya Juu and Cut-off drains. Very little effort was put in the promotion of biological and cultural alternatives which are easy to implement and are more sustainable while at the same time have an advantage of improving the general soil fertility through addition of organic matter.

Because of various advantages associated with biological and cultural conservation methods, more emphasis was put in promotion of those measures. Tentatively the slope limits suitable for various measures were provisionally grouped as follows:-

0-17%	-	Cultural and biological
18-25%	-	Biological combined with Fanya Chini
26-35%	-	Fanya Juu, where possible with strong grass strips
36-55%	-	Fanya Juu and bench terraces
Above 55%	-	No Cultivation, preferably permanent afforestation.Cultivation may be done on modified stabilized bench terraces.

SOIL CONSERVATION ACHIEVEMENTS

Soil Conservation Achievements 1

PROVINCE	DISTRICT		Terracing Farms (No of Farms)		Cut-off Drains (Meters)		Artificial W'ways (Meters)	
			Target	Achieved	Target	Achieved	Target	Achieved
NAIROBI	NAIROBI	111	100	81	2,500	739		100
CENTRAL	PDA	201						
	KIAMBU	211	3,000		100,000		20,000	
	KIRINYAGA	221	4,130	4,432	10,000	11,622	0	2,855
	MURANGA	231	4,000	4,023	1,000	10,130	1,000	900
	NYANDARUA	241	2,200	1,450	30,000	25,000	0	0
	NYERI	251	3,950	2,154	95,000	0	4	0
COAST	PDA	301						
	KILIFI	311	950	318	24,000	5,824	0	0
	KWALE	321	1,000	836	8,500	7,615	0	0
	LAMU	331	200	0	461	0	0	
	MOMBASA	341	290	230	7,250	12,630	150	4,380
	TAITA TAVETA	351	1,700	1,524	90,000	81,470	20,000	19,300
	TANA RIVER	361	0	0	0	0	0	0
EASTERN	PDA	401						
	EMBU	411	2,150	2,164	50,000	16,242	0	0
	ISIOLO	421	145	48	800	802	500	0
	KITUI	431	2,100	527	270,000	161,914	0	0
	MACHAKOS	441	1,500	563	52,500	19,765		0
	MARSABIT	451	1,300	1,005		1,010		0
	MERU	461	4,100	3,007		13,041		0
NORTH EASTERN	PDA	501						
	GARISSA	511	0	0		0		0
	MANDERA	521	0	0	0	0	0	0
	WAJIR	531	270	85	7,000	6,138		0
NYANZA	PDA	601						
	KISII	611	1,500	1,320	37,500	32,000		6,000
	KISUMU	621	8,400					
	SIAYA	631	705		0		0	
	SOUTH NYANZA	641	1,310	0		27,800		0
RIFT VALLEY	PDA	701						
	KAJIADO	711	458	128	24,000	810	10,000	0
	KERICHO	721	1,500	1,281	40,000	52,838	0	605
	LAIKIPIA	731	1,250	2,789	11,600	8,495	150	0
	NAKURU	741	1,295	1,743	25,000	16,891	0	0
	NAROK	751	2,300		39,760			
	TRANZ NZOIA	761	3,060	1,136	16,600	7,300	6,000	100
	UASIN GISHU	771	1,120	1,760	40,000	33,814	10,000	15,334
	BARINGO	811	1,000	1,264	30,000	33,420	0	0
	ELGEYO MARAKWET	821	2,075	1,203	15,000	9,380	0	0
	NANDI	831	2,605	19	16,300		1,400	
	SAMBURU	841	200	425	2,000	300		0
	WEST POKOT	861	1,080	230	25,000	13,055	1	2
WESTERN	PDA	901						
	BUNGOMA	911	2,400	980		10,073	1,000	1,386
	BUSIA	921	1,500	1,060	14,500	37	5,000	0
	KAKAMEGA	931	2,150	2,250	50,000	56,000	25,000	23,000
GRAND TOTAL			68,993	40,035	1,136,271	676,155	100,205	73,962

Soil Conservation Achievements 2

PROVINCE	DISTRICT	Code	Gully Control (No) Target	Gully Control (No) Achieved	Rehabilitation (Sites) Target	Rehabilitation (Sites) Achieved	River Bank Protection (Km) Achieved
NAIROBI	NAIROBI	111	2	3	0	0	10
CENTRAL	PDA	201					
	KIAMBU	211	22		2		80
	KIRINYAGA	221	9	10	7	8	7
	MURANGA	231	27	31	5	5	211
	NYANDARUA	241	14	15	30	22	850
	NYERI	251	10	0	4	0	9
COAST	PDA	301					
	KILIFI	311	36	21	1	1	1
	KWALE	321	10	8	2	1	0
	LAMU	331	0	0	0	0	0
	MOMBASA	341	7	18	1	1	0
	TAITA TAVETA	351	40	49	5	4	19
	TANA RIVER	361	8	10	4	2	0
EASTERN	PDA	401					
	EMBU	411	30	118	2	4	38
	ISIOLO	421	40	17	2	1	600
	KITUI	431	5	24	5	5	4
	MACHAKOS	441	15	21	9	16	56
	MARSABIT	451	142	83	9	4	0
	MERU	461	282	237	15	8	76
NORTH EASTERN	PDA	501					
	GARISSA	511	0	7	0	1	1
	MANDERA	521	0	2	4	0	0
	WAJIR	531	12	9	0	0	0
NYANZA	PDA	601					
	KISII	611	56	60	0	0	33
	KISUMU	621	12	3	0		1
	SIAYA	631	7				
	SOUTH NYANZA	641	60	34	15	16	4
RIFT VALLEY	PDA	701					
	KAJIADO	711	10	6	13	1	129
	KERICHO	721	18	33	10	9	9
	LAIKIPIA	731	40	9	4	2	12
	NAKURU	741	15	5	5	0	143
	NAROK	751	15		1		16
	TRANZ NZOIA	761	10	9	5	2	900
	UASIN GISHU	771	6	5	0	2	57
	BARINGO	811	196	139	14	13	42
	ELGEYO MARAKWET	821	7	10	1	0	94
	NANDI	831	16	82	10	5	222
	SAMBURU	841	0	3	10	3	4
	WEST POKOT	861	7	2	4	1	91
WESTERN	PDA	901					
	BUNGOMA	911	25	6	6	1	98
	BUSIA	921	11	2	7	3	6
	KAKAMEGA	931	12	20	9	6	850
GRAND TOTAL			1,234	1,111	221	147	4,672

NURSERIES

The Soil and Water Conservation Branch has maintained 44 nurseries in 31 Districts Out of these, 34 are run by the Ministry of Agriculture and 10 are run by GK Prison with the assistance from the Soil and Water Conservation Branch.

The main activities carried out in the nurseries where:

a) Propagation and distribution of fruit tree seedlings.
b) Propagation and distribution of forest/fodder treeseedlings.
c) Bulking of fodder grass.

As stated in the workplan 1987/88 the nurseries are gradually to be turned into service and training centres for groups and individuals running nurseries. However only a few Districts have adopted this policy yet.

Fruittree seedlings

Fruit trees, especially improved varieties of Avocado, Citrus and Mango are very much in demand by the farmers and this cannot be met by our nurseries.

The Soil Conservation Branch is trying to diversify the production of fruit trees, but some new fruits are in low demand because farmers have not come to accept them yet.

The number of fruit trees distributed is slightly higher than the previous year. But since no District has reported the number of seedlings distributed by the GK Prison nurseries and a few have completely failed to report from district Nurseries the actual figures could be higher.

Forest/fodder tree seedlings

For propagation and distribution of forest/fodder trees a tremendous change in the choice of species has been noted. Eucalyptus and Cypress although still popular, have particularly been replaced by other species in particular Grevillea robusta, which is in very high demand. For indigenous species the demand is still low but the situation is expected to improve, since alot of campaigns have been launched nationwide.

The production and distribution of forest/foddertrees is far below the target,due to the following reasons:

1. In many districts there are groups, NGO's and other nurseries producing the same tree species and in some cases distributing them free to farmers Hence the demand is low for these seedlings.

2. Lack of seeds. The nurseries have been requested to do local collection of seeds, but in some nurseries it is not working properly. From the Headquarters the distribution of seeds has also been very irregular due to problems of purchase.

Distribution Policy

The distribution policy has not changed in that farmers doing soil conservation are given preference. However many other farmers are benefiting as well from our nurseries.

In the price policy a change was instituted such that indigenous tree species are sold at a lower price than the exotic tree species..

7.50 each for grafted/budded Avocado, Citrus, Mango and White Sapota. (max. 5 per farmer)

7.50 each	-	for cuttings of temperated fruits as Peaches, Pears and Plums (max 5 per farmer)
1.00 each	-	for fruit-trees propagated by seeds like Pawpaw, Passion fruits, Tree Tomato etc. (max 10 per farmer).
5.00/100	-	seedlings of indigenous forest species like Cordia, Croton, Markhamia etc. (max 100 per farmer).
7.50/100	-	seedlings of exotic forest species like Grevillea, Eucalyptus, Cypress etc. (max 100 per farmer)

The prices were meant to be an incentive so that tree planting can be adopted to be attractive to the farmers, since in other nurseries the cost of seedlings are much higher. The Government subsidizes the cost of seedlings in soil conservation.

It is felt by the field officers that keeping to the policy of distribution to Soil Conservation nurseries farmers only, would make it more difficult to distribute the seedlings at the right time. Therefore many seedlings are sold to other farmers than the target group.

Bulking of foddergrass

Bulking of foddergrass in the nurseries and in specially designed plots in the Divisions has increased during this financial year, due to increased demand of splits. Efforts have also been made to distribute Makarikari-grass to new areas outside Machakos District.

Nursery Management Training

In total 9 nursery management courses have been held during the financial year. Six during the period of August - November 1987 and three in June 1988. The duration of the training was five days including theory, practicals and a field trip.

Province	Time	Venue	No. of participants Invited	Present
R/Valley (N)	20-24/6/87	NARS Kitale	25	16
R/Valley (S)	14-18/6/87	CPK Nakuru	25	17
Nyanza	3-7/8/87	Siaya FTC	20	14
Nyanza	20-24/6/88	Maseno FTC	27	22
Western	31/8-4/9/87	Busia FTC	25	22
Western	27/6-1/7/88	Bungoma FTC	30	30
Central	5-9/10/88	Wambugu FTC	25	18
Eastern	12-16/10/87	Machakos FTC	30	22
Eastern	13-18/6/88	Machakos FTC	30	22
Total			237	183

A training was also planned for Coast Province but failed due to poor organization from the PDA's office.

The training was aimed to train casuals in the soil conservation nurseries but also members of group nurseries. There has been an increasing trend of participants from group nurseries, NGO's and individual farmers.

The training was initiated by the nursery section at the Headquarters, but the PSCO was expected to organize the course in co-operation with the DSCO concerned, by booking the venue, contracting local lectures and inviting the participants. For most of the courses the cooperation between Headquarters and PSCO's was good, so the courses could run smoothly but in some Provinces the preparation was insufficient, thus hampering the impact of the training.

Distribution of inputs

Nursery requirements like seeds, polybags, secateurs, knives and other items have been distributed from the headquarters according to the requirement of the Districts. However there where some constraints in the distribution of inputs.

1. The requests from the nursery and the District often delays.

2. Certain items like secateurs and knives have not been available in the country for a long time.

3. Seeds for fodder and forest trees have not been available, despite efforts made by the nursery section to purchase them.

Constrains in propagation and distribution of tree seedlings

1. Lack of proper planning of the seedling production.

2. Lack of support from the DAO's office in terms of supervision as well as in assistance in providing necessary inputs.

3. Lack of inputs like scions, seeds, polytubes/bag etc. at the right time.

Cooperation with the Government of Kenya - Prisons

At present 10 nurseries in GK Prisons are producing tree seedling for distribution to soil conservation farmers.

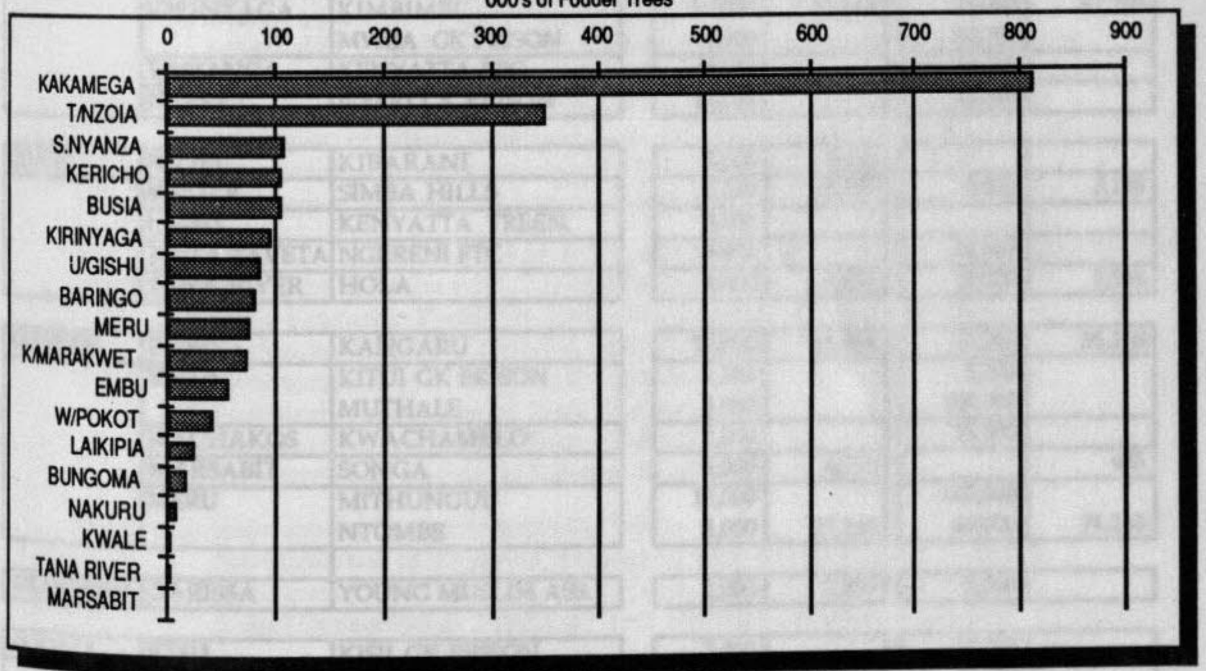
All the nurseries have trained officers, responsible for the daily work in the nurseries, but extension, collection of seeds and the distribution of seedlings is the responsibility of the District Soil Conservation Officer. However it is very common, that the District Soil Conservation Officers do not know what is going on in these nurseries, in many cases seedlings are sold direct to farmers without the knowledge of the DAO's office.

The inputs for these nurseries are provided by the Headquarters, mean while the GK Prison provides the labour.

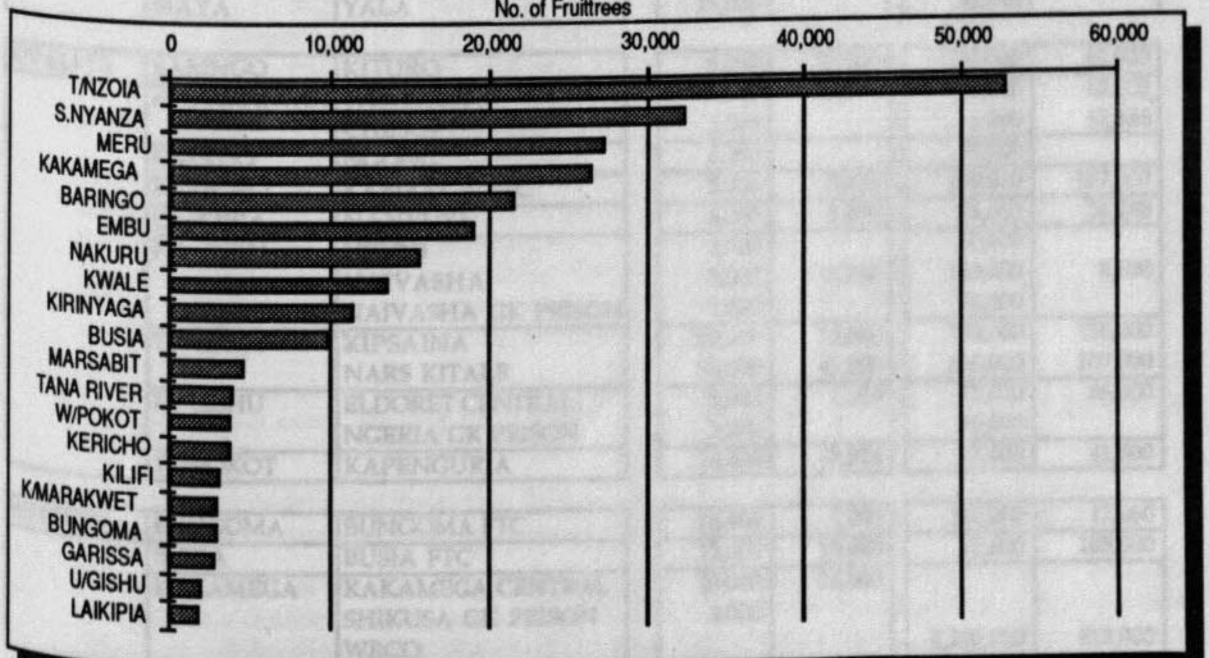
Seedlings to be distributed to farmers have to be paid at DAO's office and then be collected at the prison or through the DAO.

Districts having GK Prison nurseries should include their production and distribution into the annual report.

SUMMARY OF SEEDLINGS SUPPLIED



Above: Number of Foddertrees supplied to Farmers



Above: Number of Fruittrees supplied to Farmers

Nursery Targets & Achievements

PROVINCE	DISTRICT	NURSERY	SEEDLINGS Fruittrees		SEEDLINGS Forest/ Fodder	
			Target	Achieved	Target	Achieved
CENTRAL	KIAMBU	KAMITI GK PRISON	15,000		75,000	
		KIAMBU GK PRISON	20,000			
	KIRINYAGA	KIMBIMBI	10,000	11,514	75,000	97,200
		MWEA GK PRISON	6,000		50,000	
	MURANGA	KENYATTA FTC	5,000		50,000	
	NYERI	NYERI GK PRISON	10,000		25,000	
COAST	KILIFI	KIBARANI	5,500	3,255		
	KWALE	SIMBA HILLS	5,000	13,597	5,000	3,188
	LAMU	KENYATTA TREEN.	3,000			
	TAITA TAVETA	NGERENI FTC	3,000		50,000	
	TANA RIVER	HOLA	4,000	4,071	25,000	2,504
EASTERN	EMBU	KANGARU	10,000	19,054	50,000	56,258
	KITUI	KITUI GK PRISON	1,000		5,000	
		MUTHALE	6,000		100,000	
	MACHAKOS	KWACHAMELO	1,000		15,000	
	MARSABIT	SONGA	6,000	4,755		455
	MERU	MITHUNGUU	12,000		100,000	
		NTOMBE	5,000	27,260	60,000	76,233
N/EASTERN	GARISSA	YOUNG MUSLIM ASS.	2,000	2,855	5,000	
NYANZA	KISII	KISII GK PRISON	3,000		50,000	
	KISUMU	GEM RAE	2,000		20,000	
		KISUMU GK PRISON	5,000		25,000	
	S.NYANZA	MIGORI	5,000		25,000	
		HOMABAY	2,000	32,435	10,000	107,840
	SIAYA	YALA	25,000		50,000	
R/VALLEY	BARINGO	KITURO	5,000	21,500	30,000	81,030
	K/MARAKWET	TAMBACH	5,000	3,006	30,000	62,500
		CHESOI	2,500		6,000	12,156
	KAJADO	NGONG	6,000		50,000	
	KERICHO	KABIANGA FTC	5,000	3,820	100,000	107,000
	LAIKIPIA	NANYUKI	6,000	1,830	75,000	26,248
	NAKURU	NJORO	3,000		50,000	
		NAIVASHA	5,000	15,560	150,000	8,500
		NAIVASHA GK PRISON	1,000		40,000	
	T/NZOIA	KIPSAINA	10,000	12,000	150,000	150,000
		NARS KITALE	50,000	41,000	160,000	200,000
	U/GISHU	ELDORET CENTRAL	5,000	2,000	75,000	86,000
		NGERIA GK PRISON	3,000		40,000	
	W/POKOT	KAPENGURIA	10,000	3,924	75,000	41,500
WESTERN	BUNGOMA	BUNGOMA FTC	25,000	2,998	125,000	17,860
	BUSIA	BUSIA FTC	12,000	10,000	75,000	105,000
	KAKAMEGA	KAKAMEGA CENTRAL	25,000	26,500		
		SHIKUSA GK PRISON	3,000			
		WECO			1,200,000	813,000
TOTAL			353,000	262,934	3,301,000	2,054,472

MONITORING AND EVALUATION

The headquarter staff continued to follow-up the implementation of the 1987/88 workplan. The monitoring and evaluation has been done in different ways. One important source of information is the reports from Districts (semi- and annual reports). Field visits by the headquarter staff are done in order to

- obtain quantitative data related to various achievements.
- assess and establish the effectiveness of various conservation practices
- give guidance on proper project resources utilization particularly utilization of project funds.
- collection of views and suggestions from the field officers on their experiences on conservation and the suggested improvements.
- developing various soil loss measuring techniques.

A third channel for information has been small studies focussing on implementation problems. During the year the following reports have been presented,

- Socio-Economic Profile in East Mau Division in Narok District,
- Profile in Kilibwino Division in Nandi District,
- Summaries of studies in Nyeri District,
- Summaries of studies in Kitui District,
- Summaries of studies in Embu District,
- Summaries of studies in Kiambu District.

In addition there are draft reports not yet printed,

- Measurement of Yields in Kangundu Division, Machakos District,
- Measurement of Yields in Taita Hills, Taita-Taveta District,
- A Soil Conservation Profile of Molo Division , Nakuru District.

From the studies in Central Province there are some observations to be mentioned. The farmers mean that the rainfall and fertilizer application has more impact on the yields than soil conservation measures. They are also admitting that the soil fertility is going down. It seems to be the common understanding that soil conservation means physical structures (i.e. digging). Fuelwood is becoming more scarce and seedlings are not planted to compensate for the trees cut for fuel wood. The causes of erosion are run-off water from the road culverts and lack of maintenance of terraces and cut-off drains. Where cut-off drains are constructed with paid labour, farmers tend to think maintenance is the responsibility of the Government.

In order to improve on the situation the agricultural staff are suggesting that specialized staff for soil conservation should be employed. They also suggest that the soil conservation committees should be paid allowances. The planning (by DSCO and DivSCO) must be improved. When it comes to training they are mentioning the Chiefs, teachers, school children and farmers as target groups. This indicates the importance of knowledge among the leaders and the coming generation.

The studies also show that the constructed cut-off drains are functioning as infiltration ditches in most cases, as they have closed ends. The design of these ditches is the one for Cut-off drains and it might cause problems in the future.

As a general conclusion from the studies there is a great need for improvement of the planning and supervision by the District and Divisional Soil Conservation Officers.

From the visits in the districts there are some observations to be mentioned. In many districts the district soil conservation officer is very little involved in the use of funds. They are not keeping any accounts of the spending of funds themselves and they are not responsible for the funds. The involvement in the T & V system from the soil conservation officers seems to require improvement only on the content.

PART III – HEADQUARTERS

STAFF

The 1987/88 financial year saw some staff changes particularly at the headquarters. The following is an outline of the staff changes that were effected during the year.

- Mr. H G Kimaru, took over as head of the Branch replacing Mr. P N Njoroge
- Mr P N Njoroge who has been head of the Branch for a number of years retired from the service.
- Mr J P Wambugu, who for some times has been our Provincial Soil Conservation officer at Coast retired on age grounds.
- Mr E Mwenda, who has been stationed at the Headquarters as the co-ordinator of Mechanization Extension Services joined the S&WCB as Extension co-ordinator.
- Mr J C Birir, who has been head of Agro-forestry tendered his retirement notice.
- Mr J M Mugambi who has been the co-ordinator of other soil and water conservation projects, was transferred to Mutomo soil and water conservation project in Kitui as Soil Conservation Officer.
- Mr J K Mburu, formerly stationed at Embu as the provincial soil and water conservation officer joined the headquarters to co-ordinate and promote the activities of soil and water conservation in ASAL

The full list of Senior officers based at the Branch Headquarters at the end of the year under review and their various assignments was as follows;

Kenyan

Head S&WCB	Mr. Kimaru	H. G.
SCO - Training section	Mr. Mbegera	M.
SCO - ASAL programme	Mr. Mburu	J K.
SCO - Extension	Mr. Mwenda	E.
SCO - Nurseries/Agro-forestry	Mrs. Omoro	L.
SCO - Monitoring Evaluation	Mr. Muhoro	F. G.

Swedish

Training Adviser	Mr. Segerros	M.
Monitoring & Evaluation Adviser	Mr. Tjernstrom	R.
Agro-forestry & Nurseries Adviser	Mr. Ilg	P.

OFFICE ACCOMMODATION

The Hill Plaza Building continued to house the offices of the Agricultural Engineering Division under which Soil and Water Conservation Branch falls. Due to the size of the Branch it was necessary to set aside at least 8 offices to accommodate various officers. This was a large share of the total office space available to the entire division. This was in addition of the general store that is mainly utilized for soil conservation activities. A larger storage facility was available at Kabete Bulk stores, while at NAL, two small store rooms were also available for temporary storage of items for immediate disposal to various districts.

APPENDIXES

I. TRANSPORT

The Soil and Water Conservation Programme continued to improve on its transport position not only at the headquarters but also at the provinces, districts and divisions. During the 1987/88 the project was able to procure the following new vehicles to ease the staff mobility at various levels;

Make	Number of Vehicles	Distribution
Peugeot	2	Headquarters
Nissan	6	Provincial Headquarters
Land Rovers	6	Districts
Motor cycles	140	Divisions

The above vehicles increases the already existing fleet of transport under this project as shown in the following table; The two Peugeots were bought as replacement of the two Land-Cruisers used by the Chief of Division and the Head of the Branch.

Type	Headquarters	Province	District	Division
Toyota Land-Cruiser	3	-	-	-
Land Rovers	2	5	4	-
Subaru	4	-	-	-
Pick-up chev*	1	-	-	-
Buses Leyland	2			
Peugeot**	3			
VW Passat*	1			
Nissan Urvan	-	6	-	-
Motor bikes	-	-	-	160
3 ton lorry	1	-	-	-

* Broken down and grounded

** One is used by the Director of Agriculture

DISTRIBUTION OF VEHI

PROVINCE	*DISTRICT*	Motor Cycle	Motor Cycle	Motor Cycle	Motor Cycle
NAIROBI	NAIROBI	M856			
CENTRAL	PDA				
	KIAMBU	N029	N024	N033	M855
	KIRINYAGA	N079	N081	N082	
	MURANGA	N027	N026	N025	N080
	NYANDARUA	N032	N031	M877	M886
	NYERI	N039	N036	N035	N028
COAST	PDA				
	KILIFI	N053	M868	N074	M867
	KWALE	M866	M865	M864	
	LAMU				
	MOMBASA	M862	M861		
	TAITA TAVETA	M860	M857		
	TANA RIVER	N056	N055		
EASTERN	PDA				
	EMBU	M854			
	ISIOLO	N063			
	KITUI	N067	N066	N065	N064
	MACHAKOS	N073	N072	N071	N069
	MARSABIT	N062			
	MERU	M853	M852	N078	N077
NORTH EASTERN	PDA				
	GARISSA	N060	N059		
	MANDERA	N057			
	WAJIR	N058			
NYANZA	PDA				
	KISII	M874	M875	M876	M851
	KISUMU	M881	M882	M883	
	SIAYA	M878	M879	M880	
	SOUTH NYANZA	M809	M871	M870	M873
RIFT VALLEY	PDA				
	KAJIADO	N047	N030	N046	
	KERICHO	N050	N051	N049	N048
	LAIKIPIA	N018	N017	N016	
	NAKURU	N045	N044	N043	N042
	NAROK	N004	N003	N002	N001
	TRANZ NZOIA	N022	N021	N020	N019
	UASIN GISHU	N009	N008	N007	N006
	BARINGO	N094	N093	N092	N091
	E/MARAKWET	N014	N013	N012	N070
	NANDI	N090	N089	M900	N052
	SAMBURU	N010	M890		
	WEST POKOT	M898			
WESTERN	PDA				
	BUNGOMA	M891	M892	M893	M894
	BUSIA	M895	M896	M897	
	KAKAMEGA	M884	M885	M887	M888
HEADQUARTER					

otor ycle	Motor Cycle	Motor Cycle	Motor Cycle	Motor Cycle	Land Rover	Mini bus	Peugeot
						M156	
850	N023						
037					M361		
038							
034							
						M683	
						M157	
068							
066					M363		
						M158	
872							
						M159	
054							
041	M858	N040			M362		
011							
005							
015	N075				M360		
						M682	
					M365		
889	M849	M863	M859	M899			
					M364	M563/M558	

PROVINCE	DISTRICT		Fork Jembe	Plain Jembe	Flat file	Mattock	Pangas	Pick Axes	Shovel	Sledge Hammer
NAIROBI	NAIROBI	111	230	230	18	76	115	38	240	10
CENTRAL	PDA	201								
	KIAMBU	211	403	556	4	120	288	62	400	20
	KIRINYAGA	364	364	480		162	230	81	340	6
	MURANGA	231	403	556	4	120	268	62	400	20
	NYANDARUA	241	326	326	60	76	192	38	280	10
	NYERI	251	403	556	4	120	268	60	400	8
COAST	PDA	301								
	KILIFI	311	364	480	4	163	230	81	340	16
	KWALE	321	326	326	60	76	192	38	280	24
	LAMU	331	230	230	30	76	155	38	240	16
	MOMBASA	341	230	230	30	76	115	38	240	16
	TAITA TAVETA	351	364	480	60	162	230	81	340	8
	TANA RIVER		230	230	4	76	115	38	240	16
EASTERN	PDA	401								
	EMBU	411	364	480	4	164	230	82	340	20
	ISIOLO	421	240	240	4	72	96	36	240	20
	KITUI	431	403	566	4	120	268	62	400	8
	MACHAKOS	441	100	100	60	20	200	105	600	8
	MARSABIT	451	326	326	4	72	192	36	280	20
	MERU	461	240	96	96	36	48	36	205	30
NORTH EASTERN	PDA	501								
	GARISSA	511	230	230	4	76	165	38	240	10
	MANDERA	521	230	230	4	76	165	38	240	16
	WAJIR	531	230	230	4	76	165	38	240	
NYANZA	PDA	601								
	KISII	611	436	528		163	240	82	345	8
	KISUMU	621	326	480		76	192	38	280	8
	SIAYA	631	326	326	4	76	192	38	280	10
	SOUTH NYANZA	641	364	480	4	164	230	82	340	
RIFT VALLEY	PDA	701								
	KAJIADO	711	326	326	4	76	192	38	280	8
	KERICHO	721	364	480	4	162	230	84	340	20
	LAIKIPIA	731	364	480	4	163	230	81	340	20
	NAKURU	741	364	480	30	162	230	81	340	8
	NAROK	751	326	326	4	76	192	38	280	
	TRANZ NZOIA	761	326	326	4	76	192	38	280	5
	UASIN GISHU	771	326	326	4	76	192	38	280	
	BARINGO	811	408	408	6	96	240	48	350	40
	ELGEYO MARAKWET	821	304	480		162	230	86	340	
	NANDI	831	465	580	4	194	250	112	440	
	SAMBURU	841	230	230	4	76	115	38	240	20
	WEST POKOT	861	326	326	4	77	192	38	280	10
WESTERN	PDA	901								
	BUNGOMA	911	364	480	60	163	230	82	340	10
	BUSIA	921	364	480	60	162	230	81	340	10
	KAKAMEGA	931	364	480	60	163	230	82	340	40
HEADQUARTER		31	388	321	39	121	214	95	408	82
GRAND TOTAL			13,297	15,521	761	4,499	8,170	2,426	12,988	601

PROVINCE	DISTRICT		Wheel Barrow	Crow bars	Axes	Local Jembe
NAIROBI	NAIROBI	111	7	16	19	
CENTRAL	PDA	201				
	KIAMBU	211	10	40	38	
	KIRINYAGA	364	9	32	38	
	MURANGA	231	10	40	38	
	NYANDARUA	241	7	32	38	
	NYERI	251	9	40	38	
COAST	PDA	301				
	KILIFI	311	9	40	38	
	KWALE	321	7	32	38	
	LAMU	331	4	16	24	
	MOMBASA	341	4	16	19	
	TAITA TAVETA	351	9	32	38	
	TANA RIVER		4	16	24	
EASTERN	PDA	401				
	EMBU	411		32	38	
	ISIOLO	421	4	20	24	
	KITUI	431	16	40	38	1,970
	MACHAKOS	441		40	38	
	MARSABIT	451	2	24	24	
	MERU	461	9	24	36	
NORTH EASTERN	PDA	501				
	GARISSA	511	7	16	19	
	MANDERA	521	1	16	19	
	WAJIR	531		16	19	
NYANZA	PDA	601				
	KISII	611	10	32	38	
	KISUMU	621	7	32	38	
	SIAYA	631	8	32	38	
	SOUTH NYANZA	641		32	38	
RIFT VALLEY	PDA	701				
	KAJIADO	711	7	32	38	
	KERICHO	721	9	32	38	
	LAIKIPIA	731	7	32	38	50
	NAKURU	741		32	38	
	NAROK	751	2	32	38	
	TRANZ NZOIA	761	7	32	38	
	UASIN GISHU	771	7	32	38	
	BARINGO	811	7	40	48	
	ELGEYO MARAKWET	821	7	32	38	
	NANDI	831	7	82	58	
	SAMBURU	841	3	16	24	
	WEST POKOT	861	4	32	38	
WESTERN	PDA	901				
	BUNGOMA	911	8	32	38	
	BUSIA	921	8	32	38	
	KAKAMEGA	931	8	32	38	
HEADQUARTER		31	19	99	143	
GRAND TOTAL			263	1,329	1,526	2,020

COMMENTS FROM KAKAMEGA & BUNGOMA DISTRICTS

Some districts commented on their reports of their achievements and problems. Out of 37 reports received at the headquarters, 13 had well presented comments, 11 with brief comments and 13 with no comments at all. Here we present two examples of well presented reports from Kakamega and Bungoma.

KAKAMEGA

Terracing

The newly laid out and constructed terraces within the catchment areas were technically better done than the ones outside the catchment areas. There was alot of apprehension from the farmers who were not covered in the catchment as they thought there would be financial assistance to farmers within the catchment. Our staff were hard put to explain the aims and the advantages of the new catchment approach. As there was concentration of effort by our staff and due to the fact that some of the technical assistants were pooled to the catchment sites, non-catchment areas some what suffered from the advice from our staff. Biological and cultural approach to soil conservation was emphasised and many farmers in gentle slope areas adopted leaving out unploughed strips. It was impressed on the farmers that any method used within the local requirement would be appreciated so long as it is done technically and soils conserved. The main constraint both within and outside the catchment was slow involvement of administration so that the actual implementation was still not as fast as would be expected. Despite of alot of lay-out work done by our staff the implementation was not at par-with the former. However, it appears that with pressure coming within the catchment the lax farmers would be hard put to explain why they are not implementing the lay-out work as their neighbours. We plan to do increased campaign with administration. Another encouraging fact for the catchment is the fact that District Officer would be appointed to be incharge of Environmental matters and we hope to use these DOS to strengthen the follow up of implementation.

Cut-Off Drains

Cut-off Drains construction were done with alot of care and only in areas where they were absolutely necessary were they recommended. We encouraged construction of more terraces as most areas have been provided with cut-off drains without being followed by terracing. This could be attributed to the fact that parts of cut-off drains construction used to be founded by the Project. Cut-off drain in the catchment still need some form of founding as these structures are shared among the farms in the catchment. Farmers are not very keen to construct cut-off drains communally in somebody else farm. As in last year, most cut-off drains were done at gully heads and steep slopes areas. As in the past the main draw back is the maintenance of these structures.

Artificial Waterways

These structures have low implementation in the District due to small farm sizes as the farmers are not willing to have part of the farm taken for waterway construction. Even within the catchment the construction of the artificial water way need alot of persuasion. However, in areas where farm sizes are bigger, the farmers have realised the importance and construction is encouraging. The farmers are advised to plant some napier grass on the embarkment of water way to stabilize the structure. The napier grass can also be cut to feed animals so that the farmer does not see artificial waterway as land which is lost.

implementation of catchment approach if some of our technical staff are not well versed with soil conservation. Catchment areas are supposed to be shop windows of what can be done to conserve the soil hence any mistake technically done would have a negative impact for future implementation in other areas.

Soil Conservation - Hand Tools

Soil Conservation Tools have great impact as to the implementation of soil conservation work. When survey was done we found that most farmers have either no appropriate tools or the ones they have are worn out and could not do a more effective work on soil conservation. In some areas, the soils are hard and rocky.

Tools were issued to each Division based on the size of the catchment, the type of soil, the terrain and appropriateness of the tools to do effective work on a particular catchment. The Division keep the tools in their store and give to organized groups or individuals on loan terms for use in soil conservation when the loaning time is over the tools are collected and re allocated to others.

There should be more funds under purchase of plants and equipments to buy handles, watering cans and other locally available tools in addition to what we receive from the Headquarters last year, we did not receive wheel barrows and crow bars and these items are very useful for our soil conservation work.

Conclusion on Catchment Approach

We selected 10 catchment areas. One per Division. The 2 newly created Division had not had enough technical staff so they were excluded for the time being. However, they were annexed to the old division from where they were originally a part. We are now including them this financial year. Data was collected for each catchment area on rainfall, soil type, terrain, total catchment area, area already conserved, average farm size, farm families, farm holdings.

The work however, did not involve Bumala staff as they were not available and we could not wait for them to be available for survey work. The lay out work was then done by our staff which had been pooled to form survey team.

The major constraint in all the catchment areas is the slow rate of implementation by the farmers. In some areas the committee on soil conservation are not strong. The involvement of administration to make follow up is still low. However, with the appointment of DOS incharge of Environmental matters, we hope the rate of implementation will accelerate. Also, we hope the pressure group who are already implementing this work in the catchment will influence the other farmers in the catchment to follow suit. Cut-off drains in the catchment should,d however, continue to be financed as these structures cut across many farms in the catchment.

BUNGOMA

The catchment approach

The catchment approach is the most logical and practicable approach to soil and water conservation. The pooling of staff resources to a specific area (catchment) is the most important aspect of implementation. of soil and water conservation. With the present staff reorganization accountability of work done will be possible because soil conservation officers have been identified even at the catchment sites. It is easy to see whether any work is going on in any given catchment, and to determine the exact problems and hence solutions. Generally the approach fits very well in extension work. The farmers have accepted it, because they are beginning to see the benefits of soil and water conservation, and also the destruction which erosion can cause to their farms, especially after the 1988

extra heavy rains. More education of farmer especially through the soil conservation sub committees is very necessary. Where these committees are active some positive work has been seen.

However, catchment planning and design remains the greatest hindrance to implementation especially among the divisional soil conservation officers, all the same we are implementing at the same time learning.

Terracing

In Bungoma District there are 89,000 farms out of which about 30,000 are conserved. Out of these conserved farms the main conservation structures are grasstrips and in some cases farms with only cutoff drains have been considered as conserved. With the planning and design required by catchment approach, reporting on properly conserved farms will become more realistic, and close to what conservation on farms is supposed to mean. During the financial year 1988/89.

We will have to terrace about 2,750 farms, we hope to achieve at least 75% of this target by April 1989.

Soil Conservation Measures

It has been a difficult task to change the altitude of T.As on conservation. There was too much emphasis on cut off drains, whereby the technical assistants came to believe that C.O.D.s, are all the conservation measure needed on the farms. However I am happy to report that due to intensive training of both the senior staff and the T.A.s soil and water conservation is now fairly well understood in all its entirely, and integration of both physical, cultural measures plus agro-forestry.

Farmers Participation in Soil Conservation

Generally we can say that farmers participation in Soil and Water Conservation arises out of a felt need. For example in Kapsokwony and Cheptais Divisions farmers have been taking their own initiative to conserve their farms. This has been mainly due to the high % slope of the land in these two divisions and hence more soil erosion. However on the Lowlands of Bungoma District e.g. Kanduyi, Webuye, Kimilili, Tongaren and Sirisia Divisions the farmers have not felt the need to conserve seriously because the slopes here range from 2-20%. Again for the farmers to take a message seriously it has to be taught many times and emphasized with the seriousness it requires. However as far as soil and water conservation was concerned the T.A.s have not been emphatic enough, this has mainly been due to the former soil and water conservation approach which did not offer much time for soil and water conservation. Impact will be achieved now that there are full time soil conservation Technical Assistants.

Soil Conservation Tools

These tools would have an impact as a form of subsidy only if the farmers who got them were already doing well in soil and water conservation. The District gives an equal number of tools to all the Divisions, the Division Agriculture Extension Officers and the Divisional Soil Conservation Officers are supposed to give them out on lending basis to the farmers.

Labour Availability at Farm Level

This is the greatest handicap especially to physical soil and water conservation e.g. Fanya Juu. However farmers are encouraged and also the T.A.s are encouraged to layout

simple soil conservation measures especially the unploughed strips which can latter be turned to grass strips.

IV ABBREVIATIONS

ASAL	=	Arid and semiarid land
PDA	=	Provincial Director of Agriculture
PSCO	=	Provincial Soil Conservation Officer
DAO	=	District Agricultural Officer
DSCO	=	District Soil Conservation Officer
DAEO	=	Divisional Agricultural Extension Officer
Div SCO	=	Division Soil Conservation Officer
TA	=	Technical Assistant

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