

**I-J**

**IEE**

## **J. IEE**

J - 1	Matrix for Scoping Social / Natural Environment .....	J- 1
-------	---	------

## I. Project Name : Watershed Rehabilitation Plan for Middle Shire

## II. Social Environment

Items of Environment		Evaluation of the Proposed Development Activities					Remark
No.	items to be checked	afforestation	agroforestr	contour	land-use	I.G.As	
1. Social / Community Life							
(1) Daily life of inhabitants							
1.	land reallocation / expropriation	C	C	C	B	C	
2.	compulsory relocation of houses	C	C	C	B	C	
3.	changes in mode of living	B	B	C	B	P	
4.	conflicts among villagers	C	C	C	B	C	
5.	presence of ethnic minorities	C	C	C	C	C	
6.	immigrants, refugees and nomads	C	C	C	C	C	
(2) Demographic Issues							
1.	population increase	C	C	C	P	P	
2.	drastic change in demo.composition	C	C	C	C	C	
(3) Economic activities of local population							
1.	transfer of economic activity base	C	C	C	B	P	
2.	diversion off activities, unemployment	C	P	C	P	P	
3.	widened income disparity	C	C	C	B	B	
4.	diversity of income generation	C	C	C	P	P	
(4) social institutions and tradition							
1.	readjustment of forest usufruct right	P	P	C	B	C	
2.	change in social structure/organization	P	C	C	P	P	
3.	renovation of existing institutions	P	C	C	P	P	
2.. Health and Hygiene							
1.	increased doze of agro-chemicals	C	C	C	C	C	
2.	incidence of indigenous diseases	C	C	C	C	C	
3.	prevalence of contagious diseases	C	C	C	C	C	
4.	accumulation of residual toxicity	C	C	C	C	C	
5.	increasing wastes and excretes	C	C	C	C	C	
3. Historical Monuments, Cultural Heritage, Landscape etc.							
1.	damage and destruction of HM/CH	C	C	C	C	C	
2.	loss of unique/ precious landscape	C	C	C	C	C	
3.	influence to buried resources	C	C	C	C	C	

Note: A; possible negative impact for which assessment is necessary through site surveys,

B; impact is not clear and identification is required through site surveys,

C; impact to be considered unlikely exists and P; positive impact is expected.

I.G.As ; income generating activities beside farming, mainstay of the Study Area

HM; historic monuments, CH; Cultural Heritage

## Matrix for Scoping (2) Natural Environment

### III. Natural Environment

Items of Environment		Evaluation of the Proposed Development Activities					Remarks
No.	items to be checked	afforestation	agroforestry	contour	land-use	I.G.As	
4. Rare species of Fauna / Flora, Biotope							
1.	change in vegetation	P	P	P	B	C	
2.	influence to rare species and IFF	B	B	C	C	C	
3.	degrading biodiversity	B	C	C	C	C	
4.	invasion/proliferation of harmful	C	C	C	C	C	
5.	extinction of marsh land / peat	C	C	C	C	C	
6.	degradation of natural forest	B	C	C	C	C	
7.	increased incidence of forest fire	B	C	C	C	C	
5. Soils and Land							
1.	soil erosion	P	P	P	B	C	
2.	soil salinization	C	C	C	C	C	
3.	loss of soil fertility	P	P	P	B	C	
4.	soil contamination	C	C	C	C	C	
5.	land degradation/ deterioration	P	P	P	P	C	
6.	incidence of collapsed topography	P	P	P	P	C	
7.	degraded function of conservation	P	P	P	P	C	
6. Hydrology, Water Quality etc.							
1.	change in behavior of surface	P	C	P	C	C	
2.	change in underground water level	P	C	C	C	C	
3.	incidence of flood or drought	P	C	P	B	C	
4.	accumulation of sand and silt	P	P	P	P	C	
5.	subsidence of river-bed	C	C	C	C	C	
6.	contamination of water quality	P	C	P	P	C	
7.	eutrophication	C	C	C	C	C	
8.	change in water temperature	C	C	C	C	C	
7. Sustainability of Forest Resources, Function							
1.	failure of resource sustainability	P	P	C	C	P	
2.	failure of functional sustainability	P	P	C	P	C	
3.	drying of land causing denudation	P	P	P	C	C	
4.	influence to atmosphere/ air	P	P	C	C	C	

Note: A; possible negative impact for which assessment is necessary through site surveys,

B; impact is not clear and identification is required through site surveys,

C; impact to be considered unlikely exists and P; positive impact is expected.

I.G.As ; income generating activities beside farming, mainstay of the Study Area

IFF; indigenous and proper flora and fauna, FF; flora and fauna

**I-K**

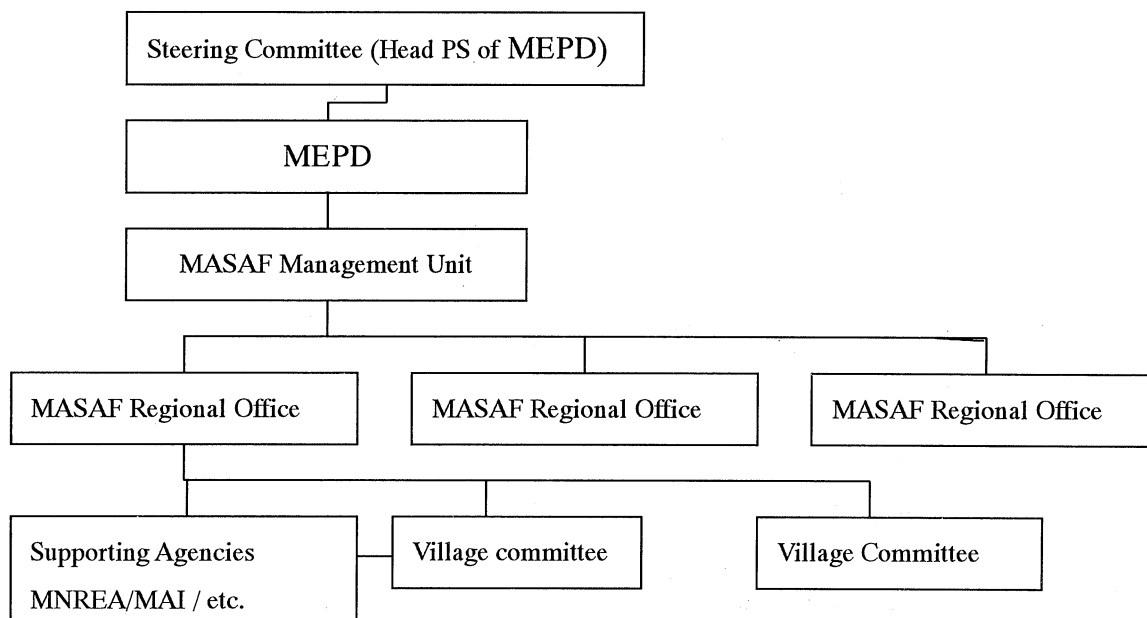
**Study of Similar Projects**

## **K. Study of Similar Projects**

K - 1	MASAF Organizations and Activities .....	K- 1
K - 2	BCFP ditto .....	K- 4
K - 3	Agroforestry Project and Research Activity.....	K- 6
K - 4	Soil Conservation Project .....	K- 7
K - 5	Similar Projects List .....	K- 8
K - 6	NGOs Activities in and neighboring the SA.....	K- 9
K - 7	Overviews and Lessons Learned by SOFEM.....	K-10

## Annex K- 1: MASAF

### Formation of MASAF



### MASAF Project Cost

Item	Budget (million US\$)
Total project cost	71.3
Budget for Malawi government sector for the project's support	19.5
Project cost by the community	50.3
Monitoring cost regarding poverty	1.5

### Three basic concept of the MASAF

- ✧ Participatory project of the villagers through formation of community
- ✧ Direct loan to the community
- ✧ Community's autonomous project implementation and operation

### MASAF Afforestation Project in Blantyre District

#### Selection criteria of the project area

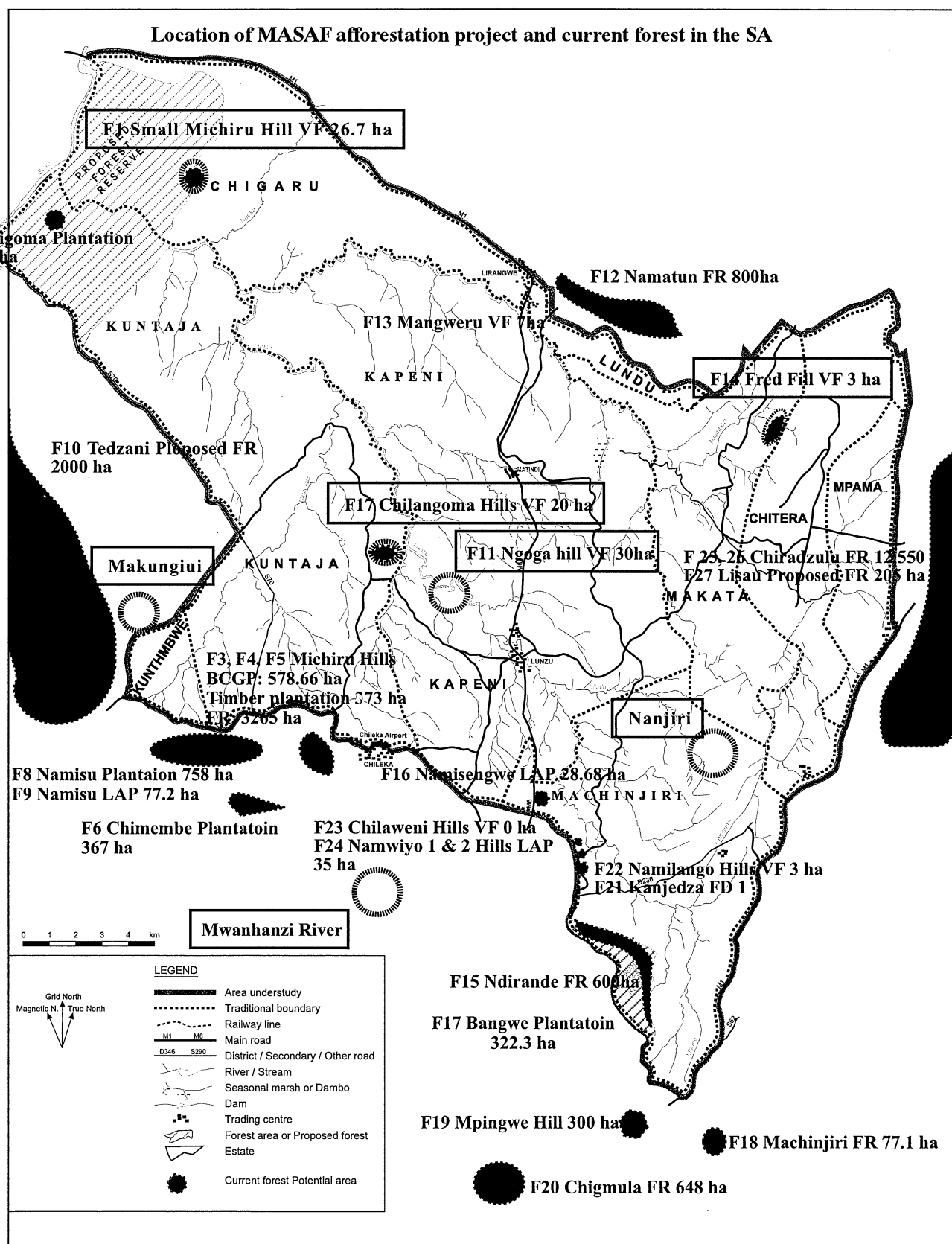
- ✧ Wasted denuded hills requiring emergent recovery of green
- ✧ Completed land acquisition or agreement for afforestation with concerning community
- ✧ Stony land not adequate cultivation

**List of WB/MASAF Afforestation Project (99/Blantyre District)**

Afforestation Project		Cost (x 000)	
		MK	\$
i.	Fred	1,310	29.11
ii.	Nanjiri	1,265	28.11
iii.	Ngonga	1,999	44.42
iv.	Small Michiru Hill (initiated at 98)	1,180	26.22
v.	Chilangoma	1,961	43.58
vi.	Makungwi	1,240	27.56
vii.	Mwamphanzi River (including river bank afforestation)	1,834	40.76
Total		10,789	239.76



## Annex K-1



## Annex K- 2: BCFP

### Summary of BCFP Component

Year	Contents
1985:	Project analysis for BCFP (NORAD/FORINDECO)
1986-92:	Phase I Afforestation 4,775 ha (9 plots approx. 600 ha each, <i>E. Camaldulensis</i> , <i>tereticornis</i> ), 10,000ha (Indigenous forest management and demarcation) Construction of basic infrastructure (office / residence, road 60 km, etc) Procurement vehicle and equipment
1992-98:	Phase II Harvesting and marketing of wood from the plantation
1995-96:	Study for restructuring the project for making it sustainable (Mid term survey)

Reason, provided study for restructuring during 1995-96, is

- a) not profitable project for poor marginal people,
- b) year 97<sup>th</sup> forestry act provide further motivation and involvement of local people and
- c) lessons from past work requested new structure of the project

#### Project cost

Phase I	Norwegian grant	18.72 mil. MK (US\$0.42 mil.) <sup>1</sup>
	Malawi Counterpart fund	0.38 mil. MK (US\$0.01 mil.)
Phase II	Norwegian grant	14.32 mil. MK (US\$0.32 mil.)

NORAD study, carried out during 1995-96, stated major problems as follow,

- Hunger, low income, small employment chance
- Project objectives after handing over were not clear for the villagers
- Delay of demarcation of forest boundaries
- Low women's' participation rate
- Operation VNRMAC without pillar person of TA or communities
- Institutional development without reference to the newly released forestry act
- Harvest without consideration in proper rotation instead of planned 8 years roatation period

#### Recommended Subjects by the Study on 1998

- Development of clear and easy understandable project target by the villagers
- complementary financing for solving VNRMAC needs
- shortage of land for cultivation and demarcation with forest land

<sup>1</sup> Exchange rate : MK/US\$:45/1 (Aug. 99), MK/NOK:2.2/1(Feb.93)

- delineation of afforestation plot based on TA or village boundries which causes less management
- relationship between allocated villages and adjacent villages
- promotion of more women's participation
- system development for complement human resources supply (high morbidity and mortality) such as training, liaison system
- system development for improvement poverty condition, e.g. promotion IGA projects

### Annex K- 3: Agroforestry Project and Research Activity

The Malawi Agroforestry Extension Project (MAFEP), nationwide project, is a cooperative grant agreement between USAID and Washington State University with the MAI. The focus of the project's first phase (1992 - 1996) was to test and adopt agroforestry and soil conservation practices with farmers in pilot sites under different agro-ecological and socio-economic conditions. In the second phase (1996 - 2000), MAFEP engineered a new paradigm of partner collaboration with 21 of GOM agencies and international agency, and 20 NGOs of FRIM, FD, EU, MAI, and ADD<sup>2</sup>. The project constitutes best-bet agroforestry practice<sup>3</sup>, training services to partners, community based monitoring and evaluation, production and expansion of training and M & E materials and performance of production materials to partners<sup>4</sup>.

The International Centre for Research in Agroforestry (ICRAF), established in Nairobi in 1977, is an autonomous, non-profitable research body collaborating around the world. ICRAF is working in the Southern African Region characterized by the Miombo woodland vegetation that extend from central Tanzania in the north, to Angola in the west and Mozambique in the East. In Malawi, ICRAF has their activity base at Zomba from where it undertakes various research activities e.g. monitoring and experimental cultivation of fruit tree, agroforestry, etc.

Based on the result of research by ICRAF in Malawi, it is confirmed that there is an increment of crop yield in farmland subproject to agroforestry practices (mixed crop of maize and *Acacia albida*) after 2<sup>nd</sup> year of initiating mixed crop

---

<sup>2</sup> It is including Blantyre ADD

<sup>3</sup> Contour hedges of vetiver grass, tree nurseries, homestead planting, living fences, undersowing *Thphrosia vogelii*, Legume inter-crops and rotations

<sup>4</sup> Nursery poly-tubes, long term tree seed, *Tephrosia* seed, Ground nut, Pigeon peas, Soya beans and beans.

#### **Annex K- 4: Soil Conservation Project**

The following two projects are representing soil conservation project in the SA.

- PROSCAP (Promotion of Soil Conservation and Rural Production Project), EU
- APIP (Agricultural Productivity Improvement Project), EC

The PROSCAP Project is a nation wide European Development Fund funded project, under the department of Land Resources Conservation in the MAI. The project was commenced in July 1997 will end in March 2001. The project has 175 poverty alleviation pilot project for agroforestry where sites are selected on the bases of by catchment area. At year 97/98 of fiscal year, total number of the project sites (catchment area) in operation was 215<sup>5</sup>. Following are list of main activities of the project.

- Land husbandry and soil conservation (Contour maker ridge construction, Vetiver grass hedgerow planting, Establishment of vetiver grass, Establishment of agroforestry, Horticulture nurseries)
- Seed distribution (seeds for agriculture e.g. open pollinated variety maize, Soy beans, etc., agroforestry seed e.g. *Tephrosia vogelii* (Tephrosia), *Tuna ciliata*, etc.
- Extension and training for farmer (Training subjects: Leadership & Planning, Crop husbandry, Land husbandry, Agroforestry, Foot processing, Water and sanitation and Horticulture) and staff training of same training subject with farmer
- Rural water supply and sanitation (drilling boreholes, digging shallow well, etc)

APIP is a project financed by European Commission (EC: currently EU) and implemented by the government of Malawi through MAI. The main objective of the project is to increase maize productivity through promotion of hybrid seed and fertilizer aimed at small holder farmers. Currently, the project is providing agriculture inputs as a part of poverty alleviation to the credit worth farmers. The inputs include 50kg of basal fertilizer, 50kg top dressing fertilizer (Urea) and 10kg of hybrid maize seed.

---

<sup>5</sup> PROSCARP project site distributes nationwide to every ADD except Machinga and Blantyre.

# Annex K- 5: Similar Projects List

Donor	Project name	Cost US\$ x 000	Period	Area	Project Object
WB (EAD)	EIS Component of Environmental Management Project Environment Information System	9.15	1999 (6 mos.)	Middle Shire	Preparation of environmental information system for Middle Shire catchment area for policy mitigation strategies
ADB	Lilongwe Fuelwood Production Project	1,311.11	95-02	Lilongwe District	To minimize environmental Degradation and fuelwood production
EU	Social Forestry Project	4,279.74	97-01	Dedza, Ntcheu, Chi kwawa and Mwanza	Improvement of livelihood of the rural people and promotion of participation in social forestry in Malawi
WB (EAD)	Co-Management of Forest Resources	1,800.00	98-03	Machinga, Kasungu, N khala Bay	Promote sustainable management of forest reserves through joint management with rural communities.
FINIDA	Improvement and Strengthening of Forestry Colleges in SADC Region	767.54	97-01	Dedza District	Improve and strengthen the status of Malawi College of Forestry & Wildlife.
UNHCR	Environmental rehabilitation for Malawi's on refugee impacted areas	64.11	1/1/99- 3/12/99	Dedza, Dowa.	To rehabilitate and conserve the environment in the refugee impacted areas in Malawi.
UNDP	Southern Africa Biodiversity Support Programme	99.84	98-99	SADC member countries.	To support status of biodiversity in SADC region.
Tobacco Association of Malawi (TAMA)	TAMA Reforestation Project	2.11	98-99	Lilongwe, Rumphi & Mangochi	To plant tree in tobacco impacted areas
WB (EAD)	Rehabilitation of Msili Hills	2.06	98	Rumphi District	To rehabilitate and manage Msili Hills
WB (EAD)	Rehabilitation of Phungu, Kasezi, Thandata & Chilulu Hills	2.15	98	Rumphi District	To rehabilitate and manage Phungu, Kasezi, Thandata Chilulu Hills
GTZ	Sustainable Management Of Indigenous Forest	7.16	96-02	Kamwamba , Mwanza District.	To improve the local community through sustainable management of indigenous forests.
DfID & UNDP	National Forestry Programme	348.25	99 -	Nationwide	To establish a workable socio-economic & political network for sustainable forest management.
Local Sources	Likoma- Chizumulu Foresatry Development Project	103.75	94-99	Nkhata Bay mainland.	To enhance environmental conservation of twin islands of Likoma- Chizumulu through community participation.
EU	Promotion of Soil conservation and Rural Development (PROSCARP)	12,890.00	97-01	Nationwide	Promotion of Soil Conservation technologies and support to crop diversification by small holders through catchment base subproject.
ADB	Land Resources Conservation	860.00	98-00	Nationwide	Monitor Land use in the country.
IFAD	Small holder Food Security	190.00	95-00		
UNDP	National and Sustainable Renewable Energy Programme	500.00	99-00	Nationwide	Increase use of renewable energy and to manage them properly

# Annex K-6: NGOs' Activities in and neighboring the Study Area

Name	Activities	Geographic Scope
World Vision International	Operating integrated community development projects. Water, health, sanitation, education, food security, agroforestry, afforestation, and small enterprises, etc	Chigaru, Chitera, Machinjiri
Concern Universal <sup>6</sup>	Water and environmental sanitation, food security, capacity building through local NGOs support <ul style="list-style-type: none"> <li>- Promotion of safe water</li> <li>- Construction and maintenance boreholes</li> <li>- Capacity building of village people</li> </ul>	Chigaru, Kuntaja, Kunthembe, Lundu, Kapeni
FINCA	Providing micro credit for women in Southern and Central Region <ul style="list-style-type: none"> <li>- Finance individual woman by group responsibility (lending 228 group in Blantyre district by 16 weeks cycle with 16 % of interest rate going 48 % by year. Repayment rate is 100 % by FINCA)</li> </ul>	All TAs in the SA
Wildlife Society of Malawi	Promotion of wise management of wildlife, natural resources and the environment and income generation <ul style="list-style-type: none"> <li>- Contractor of implementation for GTZ project in Mwanza: Sustainable management of indigenous forests project</li> <li>- Preparation and publication activity for environmental education of the villagers</li> </ul>	Some school in the SA
CURE	Providing technical support and networking among NGOs, Government, donors and other private agencies working in the area of environment Training and capacity building of PRA, gender sensitization awareness and analysis, community mobilization and participatory development and natural resource management	Countrywide
Chitukuko Cha Amayi M'Malawi (CCAM)	Tree nursery inputs.	Study area among others
Action Aid Malawi	Seed and Environment Project	Countrywide
Christian Service Committee (CSC)	Credit revolving Fund	Countrywide
Enterprise Development and Training (EDETA)	Income generating activities	Blantyre and Mwanza
Evangelical Lutheran Development Programme (ELDP)	Environmental rehabilitation	Mainly outside the study area
Greenline Movement	Riverbank protection and agroforestry (Shire River and its tributaries).	Machinga District
National Association of Business Women (NABW)	Credit Programs	Countrywide
Oxfam GB Malawi	Food security programs for working labor	Countrywide
Paper Making Education Trust (PAMET)	Alternative Sources of Energy	Countrywide
Plan International (PLAN)	Supports women in on afforestation Projects	Countrywide
Women World Banking	Business Management Skills & Credit Training.	Countrywide.

<sup>6</sup> Since 1996, CU has installed 140 new boreholes, repaired 150 shallow wells and rehabilitated 30 boreholes in Blantyre.

## **Annex K-7: Overviews and Lessons Learned by SOFEM**

### **Project Overview**

<b>Mos.</b>	<b>Year</b>	<b>Major issues</b>
Apr	1982	"Production of 200 Million Tree Seedlings per Year: A strategy and Focus on Rural Tree Development" was presented by Presidential Order.
Feb.	1983	A first JICA forestry development team was dispatched to Kenya.
Apr.	1984	Kenyan Government made official request to Japan on seedling production.
Nov.	1985	Preparatory Phase of the Project started.
Jul.	1986	Kenya Forestry Research Institute(KEFRI) was established.
Nov.	1986	First Planting in the Pilot Forest was executed.
Nov.	1987	Main Phase (First Phase) started.
Mar.	1988	Japan's grant aid construction, "Nursery Training Center for Social Forestry" was completed.
May	1988	KEFRI came under a new ministry -Ministry of Research, Science and Technology-.
Nov.	1992	Second Phase started
Nov.	1997	Second Phase finished. The SOFEM project started.
Sep.	1999	KEFRI belonged to the Ministry of Environment and Natural Resources as same as Forestry Department.

### **Outputs of the Cooperation are designated as follows by SOFEM**

- Developing practical techniques for planting and tending trees for established village forests
- Developing appropriate methods of establishing village forests with initiative of the local residents
- Improvement of capability of extension agents
- Integration of information of social forestry extension shared among the people and other related organizations.

### **Activities of the Cooperation are also defined as below by SOFEM**

- To develop practical techniques for establishment of farm forest in semi-arid areas.
- To design, establish, monitor and evaluate farm forests.
- To train extension agents and develop appropriate extension methods.
- To collect, synthesize and disseminate information on social forestry extension.

### **Lessons learned by SOFEM**

#### **1) Participatory Forest Concept**

In comparison, villagers' homestead acreage<sup>7</sup> in the SA is smaller than the target area of SOFEM project social forest extension. Therefore, for promotion of participatory forest management by

---

<sup>7</sup> Average acreage of the household in the SA is estimated around 0.85 ha based on the Study



villagers, it is necessary for villagers to contribute land for afforestation practices. This is however rather difficult in the SA on account of small land holding per households.

Village Forest O & M system should be developed by villagers themselves and besides actual management, the operation should include formulation of rules and regulations. Such forest managed on participatory basis should be located close to the village people.

#### 2) Formation of villagers participatory project

Efforts should be geared to participatory projects in which villagers have big interest e.g. water resources development, pond rehabilitation, foot pump irrigation, terrace construction, apiculture, fish culture, including introducing marketable crops, IGAs, etc.

#### 3) Promotion of improvement cooking stove

Villagers may not recognize necessity of installing improved cook stoves instead of their traditional three-stone stoves. Such improved cooking stoves should however be adopted to save more fuelwood. The main issues here is that the stoves should be designed and accepted by villagers themselves. In addition, such stoves should be of simple construction and practical utility for villagers to realize energy saving.

#### 4) Promotion of home garden and introduction of cash crop

It is necessary to promote home garden in each homestead. Extension on vegetable production at home garden should be undertaken under tree canopy, e.g. marketable fruits (tree) species, improved fruits (tree) species, increment of new fruits seedling production, etc.

#### 5) Prevention of forest fire

It is essential to develop cooperative management system by villagers with introduction of effective firebreak, firebreaks tree species and institutional system and rules. In line with prevention of forest fire, the government's institutional development should be strengthen in forest patrol and forest guard e.g. strengthen forest patrol's right and power