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EXTENSION PROJECT:  
*PHASE II*

**Quarterly Report July to September 1998**

**Prepared By**

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**With**

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**NATURE PROGRAM**

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**Sponsored by The United States Agency for International Development**

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With the Land Resources and Conservation Department*

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## ADMINISTRATION AND COORDINATION

### *Financial and Technical Reports/Publications:*

- July to September Financial reports to WSU for onward processing to USAID.
- Proposals for Interproject Collaboration and Information Systems among MAFEP, SADP and MEMP. By P Wyeth with WT Bunderson, International Programs, WSU, MAFE Pub. No. 20.
- Memorandum of Understanding for Inter-Project Collaboration, Strategic Objectives 1 and 2, USAID Malawi. WT Bunderson, J. Engle and KW Burger, August 14, 1998.
- Structure and results of Preliminary Meetings with SADP Staff and Farmer Associations. By OA Itimu, ZD Jere, WT Bunderson, GK Siyeni, AM Mira and GG Chammagomo. Sept 1998.
- Malawi Agroforestry Extension Project: *Annual Workplan for 1998/99*. WT Bunderson, OA Itimu and ZD Jere, MAFE Pub. No. 21.
- Reference Training Manual for Agroforestry and Soil Conservation, MAFE Pub. No. 22.
- Malawi Agroforestry Extension Project: *Achievements, Lessons Learned and Opportunities*. By WT Bunderson, OA Itimu, and ZD Jere. Presented at the Annual Conference of the Department of Land Resources and Conservation, Zomba September 1998.

### *1998/99 Annual Workplan:*

MAFEP's workplan for 1998/99 was submitted to USAID in early September rather than July as required for the new cycle of July to June. The delay was inevitable as this period is out of sequence with the cropping calendar since June to September is a key period required to evaluate results from the previous season and setting new targets. MAFEP's workplan also depends largely on documented results and targets of its partners, who were busy with these tasks. To avoid this problem in future, MAFEP recommends reverting to the original cycle of October to September, a period in perfect tune with MAFEP's agreement (September 1992 to September 2000).

1997/98 results are shown in Table 1a-c with targets for 1998/99. The latter may change due to premature demands to complete the workplan before adequate planning and targeting.

### *Recruitment of Staff:*

On August 1, Mr Zwide Dexter Jere was recruited as MAFEP's senior Extension-Training-Monitoring Specialist to coordinate and manage growing demands on MAFEP for these services. Mr Jere possesses a Masters degree in soil conservation and has 20 years of professional service with the agricultural extension and training arm of the Ministry of Agriculture. Mr Jere's appointment was approved by LRCD and USAID.

### *Equipment and Supplies:*

- Pentium computer installed with appropriate software for the Extension/Training Specialist.
- Cold room unit for long-term storage of tree germplasm (3 x 3 x 2.5 m).
- Plastic containers for storing tree seed, including 2000 x 50kg sacks and 1200 x 25kg sacks.
- Packaging material to transport and deliver 10 tons of tree seed to MAFEP partner sites.
- 2.5 million nursery polythene tubes for delivery to MAFEP partners.
- 200 project designed agroforestry shirts and caps for promoting project-related activities.

### *Maintenance of Equipment and Vehicles:*

- Routine maintenance on all project vehicles, computers, printers, photocopiers, fax machines, telephones, storage facilities, gensets and other office/field equipment.
- Re-installment of email and computer network systems to include new computer stations.

Table 1 a

<b>STRATEGIC OBJECTIVE 2:</b> INCREASED SUSTAINABLE USE, CONSERVATION, AND MANAGEMENT OF NATURAL RESOURCES			
<b>APPROVED:</b> 15/03/95		<b>COUNTRY/ORGANIZATION:</b> USAID/Malawi	
<b>INDICATOR:</b> Increased adoption of improved soil conservation and agroforestry practices.			
<b>UNIT OF MEASURE:</b> a) no. of hectares or trees established (depending on the technology/practice) b) no. of farm families or communities involved			
<b>SOURCE:</b> Washington State University and partner institutions			
<b>INDICATOR DESCRIPTION:</b> Increased adoption of improved soil conservation and agroforestry practices defined as follows:			
<p>1) improved soil conservation practices with contour strips of grass/shrub species, reduced tillage with crop residue management, or combinations thereof<sup>1</sup>:</p> <p>a) no. of hectares (ha) b) no. of farm families (FF)</p> <p>Targets for vetiver strips exceeded due to increased supply of planting material &amp; high farmer interest</p> <p><sup>1</sup> This excludes physical contour and box/tie ridging since the integration of dense vegetative barriers is vital to reduce erosion and runoff. Extension of reduced tillage/crop residue mgt is not included since on-farm trials will not be complete till 2000.</p>	<b>YEAR</b>	<b>PLANNED</b>	<b>ACTUAL</b>
	1996 (B)	a) 400 b) 1,000	a) 385 b) 822
	1997	a) 600 b) 1,400	a) 506 b) 1,272
	1998	a) 750 b) 3,000	a) 2,872 b) 6,464
	1999	a) 5,000 b) 10,000	a) b)
<p>2) improved soil fertility and conservation from soil-improving trees/shrubs planted in intercropping and/or short-term fallow systems:</p> <p>a) no. of hectares (ha) b) no. of farm families (FF)</p> <p>* Achievements in 1997 lower than targeted from optimistic expectations re. the Green Pack program, and low establishment for pigeon peas. Low Ha in 1998 due to low survival of <i>F. albida</i> and only half the area was established with pigeon peas due to short seed supply. Subsequent targets adjusted accordingly.</p>	1996 (B)	a) 3,500 b) 7,000	a) 3,311 b) 6,543
	1997 *	a) 7,000 b) 15,000	a) 4,381 b) 12,993
	1998	a) 10,000 b) 22,000	a) 6,525 b) 23,533
	1999	a) 12,500 b) 35,000	a) b)
<p>3) increased tree planting as woodlots, homestead/boundary planting and living barns for wood and other tree products:</p> <p>a) no. of trees<sup>1</sup> b) no. of farm families (FF)</p> <p>Units are trees in millions planted annually with a 48% survival rate (not cumulative since many trees die or are felled every year). The baseline, targets and achievements are limited to MAFEP and its partners, and exclude tree planting by the Forestry Dept and relief organizations. Low numbers in the baseline year reflect the limited number of MAFEP partners.</p>	1996 (B)	a) 0.08 m b) 255	a) 0.05 m b) 528
	1997	a) 2.5 m b) 10,000	a) 2.4 m b) 9650
	1998	a) 4.0 m b) 15,000	a) 3.82 b) 16,940
	1999	a) 6.0 m b) 24,000	a) b)
<p><b>COMMENTS:</b> Year refers to the growing season (i.e. 1996 = 1995/96; 1997=1996/97 etc). Although practices are differentiated according to primary function, many have multiple uses such as wood, fodder, thatching, and contribute to improved soil/water conservation. Within each category, the number of farmers adopting one or more practices is estimated from limited sample data since the requirement for an aggregate indicator is a new change (ie, earlier monitoring did not assess the overlap in area and number of farmers adopting more than one practice). Future monitoring will provide data on the area, no. of trees, and no. of farmers adopting individual practices or combinations to indicate aggregate and preferential adoption of different conservation practices.</p>			

**Table 1 b**

<b>STRATEGIC OBJECTIVE 2:</b>		<b>INCREASED SUSTAINABLE USE, CONSERVATION, AND MANAGEMENT OF NATURAL RESOURCES</b>	
<b>APPROVED:</b> 15/03/95		<b>COUNTRY/ORGANIZATION:</b> USAID/Malawi	
<b>INTERMEDIATE RESULT 2.3 :</b>		Service programs improved	
<b>INDICATOR:</b> Agroforestry/soil conservation support through partnerships			
<b>UNIT OF MEASURE:</b> Number (cumulative) except for tree seed since this is used up annually.			
a) number of ADDs/ Govt Depts / Donor Project Partners			
b) number of NGO partners			
c) number of private sector partners <sup>1</sup>			
d) number of trainers and field staff trained in AF/SC practices			
e) hectareage under vetiver nurseries (includes farmers, groups, govt plots and private estates) <sup>2</sup>			
f) tons of improved pigeon peas distributed to partners annually <sup>3</sup>			
g) tons of tree seed distributed annually to partners			
<b>SOURCE:</b> WSU and partner quarterly/annual reports			
<b>INDICATOR</b>	<b>Year</b>	<b>Planned</b>	<b>Actual</b>
<p>MAFE support to USAID/Govt/NGO/private sector partners to improve/expand the implementation of agroforestry/soil conservation practices with farmers.</p> <p><sup>1</sup> Main private sector partners in 1996-1997 were Carlesberg, and Round Table-TEAM which helped sponsor smallholder tree planting programs. New tree planting initiatives/support are being developed with Cheetah, Norsk Hydro and local business interests in processing/exporting groundnuts and pigeon peas.</p> <p><sup>2</sup> Most in smallholder sector. In 1998 approx. 8 ha in estates. Exceeded 98 targets from high farmer interest.</p> <p><sup>3</sup> Pigeon pea seed collection in 1998 fell short of targets due to a poor harvest and exports to India by business men.</p> <p><b>COMMENTS:</b>            Training targets and tree seed in 1998 were exceeded due to increased demands from govt and NGOs            In addition to the above, support to partners includes frequent field visits with technical advice and problem solving assistance; production and dissemination of extension/training materials; and assistance in the design and execution of a new monitoring &amp; evaluation system.</p> <p>During 1996/97, WSU continued to work with six new partners initiated in late 1995/96 in addition to the existing 6 ADDs, Forestry Department and PROSCARP. No new starts were envisioned in 1996, as WSU wished to thoroughly test and evaluate the new approach before entering into new partnerships. In 1998, 15 new alliances were formed with partners from all sectors, and this is planned to increase by another 5 in 1999 (see narrative).</p>	1996	a) 10	10
	b) 2	2	
	c) 2	2	
	d) 200	218	
	e) 31	33	
	f) 0.1	0.1	
	g) 2.1	2.1	
	1997	a) 10	10
	b) 2	2	
	c) 2	2	
	d) 270	269	
	e) 83	87	
	f) 10	10.6	
	g) 6.1	6.1	
	1998	a) 15	15
	b) 10	10	
	c) 4	4	
	d) 562	890	
	e) 155	208	
	f) 15	8.5	
	g) 5.2	6.25	
1999	a) 16		
b) 13			
c) 5			
d) 1465			
e) 300			
f) 20			
g) 9			

Table 1 c

<b>STRATEGIC OBJECTIVE 2:</b> INCREASED SUSTAINABLE USE, CONSERVATION, AND MANAGEMENT OF NATURAL RESOURCES				
<b>APPROVED:</b> 15/03/95 <b>COUNTRY/ORGANIZATION:</b> USAID/Malawi				
<b>INTERMEDIATE RESULT 2.3 :</b> Service programs improved				
<b>INDICATOR:</b> Agroforestry technologies and support services tested, evaluated and adapted at the farm level before broad-based extension to farmers.				
<b>UNIT OF MEASURE:</b> Cumulative number of technologies that are (a) undergoing testing, or (b) have completed testing and modification/adaptation with farmers. Note that new technologies may be added for testing in a given year, while others complete testing.				
<b>SOURCE:</b> WSU quarterly and technical reports				
<b>INDICATOR DESCRIPTION:</b> Each technology undergoes on-farm testing with farm communities in multiple sites to identify what technologies work where and why, and what does not. Refinements/adaptations are made to enhance farmer adoption with faster & greater returns and lower costs by better understanding the socio-economic and bio-physical factors that affect adoption. When testing is complete, extension recommendations are made, but improvements may continue in management and species selection. Technologies below are categorized according to their primary function, though many have multiple uses (wood, fodder, thatching etc) with contributions to soil/water conservation.				
NO. TECHNOLOGIES			TECHNOLOGIES/PRACTICES	Extension Suitability
YEAR	PLANNED	ACTUAL	<b>A. Germplasm multiplication/collection</b>	
1992 (B)	a) 12	a) 12	1) Tree nurseries (individual & communal)	Countrywide
	b) 0	b) 0	2) Vetiver nurseries	Countrywide
1993	a) 13	a) 13	3) Seed banks	Countrywide
	b) 0	b) 0	4) Community seed collection/production	Countrywide
1994	a) 11	a) 11		
	b) 3	b) 3	<b>B. Soil and Water Conservation</b>	
1995	a) 6	a) 6	5) Contour ridging with A-frame/line level	Countrywide
	b) 9	b) 9	6) Gully reclamation <sup>1</sup>	Small/medium gullies
1996	a) 2	a) 2	7) Contour hedgerows of grass/shrub species	Countrywide
	b) 14	b) 14	8) Reduced tillage & crop residue management	Testing incomplete
1997	a) 2	a) 2	<sup>1</sup> Improvements needed for wide and deep gullies.	
	b) 15	b) 15	<b>C. Soil Fertility/Conservation</b>	
1998	a) 2	a) 1	9) Dispersed-systematic tree interplanting	Countrywide
	b) 15	b) 16	10) Hedgerow/alley intercropping	Targeted at farmers with good managerial abilities & interest (10-15% of farmers)
1999	a) 1	a) 1	11) Increased use of improved pigeon peas/other grain legumes	Countrywide
	b) 16	b) 16	12) Improved short-term fallows	Targeted at farmers with idle or fallow land
2000 (T)	a) 1	a) 0	13) Undersowing legume shrubs with food/cash crops	Testing advanced with best practice ready for extension
	b) 16	b) 17	<b>D. Tree Planting for wood/other products</b>	
<b>COMMENTS:</b> After several years of testing and adaptation with farmers in different agro-ecological zones, many technologies are ready for extension on a wide or selective scale depending on farmer and location conditions, with species to match the site. New technologies with great promise for impact include (1) reduced tillage with crop residue management for soil/water conservation with much reduced labour for annual ridging, and (2) undersowing crops with fast-growing n-fixing shrubs, producing more than double the yields in 1-2 seasons, depending on biomass yields. These two technologies are currently undergoing intensive testing to shorten the time for extension.			14) Woodlots/homestead & boundary planting	Countrywide
			15) Living fences	For animal enclosures, homestead/veg gardens
			16) Fodder banks	Targeted at intensive enterprises
			17) Living farm sheds	Targeted at cash crops for processing/grading.

## TECHNOLOGY DEVELOPMENT

- Extensive reviews of on-farm results and farmer demands have identified best-bet technologies and species to recommend. These are described with illustrations in a new MAFEP leaflet. A comprehensive report on the status and adoption potential of each technology is in preparation for publication in January-March 1999 based on consolidated partner results. Extension recommendations are to be incorporated into revisions of the MAFEP Field Manual, NASC publications and new extension leaflets that are now under production.
- NASC Policy and Implementation Guidelines are to be commissioned to selected task forces once funding is secured from EU, USAID and the Embassy of the Netherlands in Lusaka.

## GERMPLASM COLLECTION

A major task this quarter was the collection, transport, inventory and storage of tree seed as many tree species set seed during this period. To improve the storage and consolidation of MAFE seed stock, a cold unit was purchased for installation in the facilities behind the offices in Lilongwe. The inventory of current seed stock before distribution to partners is summarized in Table 2.

Table 2: SEED STOCK AT START OF 98/99 SEASON

Species	Kg	Species	Kg
<i>Acacia augusticima</i>	0.3	<i>Gliricidia sepium</i>	64.7
<i>Acacia galpinii</i>	1,354.0	<i>Jatropha curcas</i>	1,304.6
<i>Acacia nigrescens</i>	25.3	<i>Khaya nyasica</i>	559.6
<i>Acacia polyacantha</i>	1,085.1	<i>Leucaena leucocephala</i>	222.1
<i>Acacia sieberiana</i>	104.4	<i>Lonchocarpus capassa</i>	1.0
<i>Azelia quanzensis</i>	308.0	<i>Melia azaderach</i>	637.1
<i>Albizia lebbeck</i>	108.5	<i>Moringa oleifera</i>	966.8
<i>Albizia zimmermannii</i>	1.3	<i>Parinari curatelifolia</i>	3.4
<i>Annona senegalensis</i>	0.1	<i>Pericopsis angolensis</i>	1.6
<i>Azanza garkeana</i>	1.9	<i>Pinus patula</i>	0.1
<i>Bauhinia thonningii</i>	0.3	<i>Pseudolachnostylis maprounifolia</i>	32.0
<i>Bixa orellana</i>	6.9	<i>Pterocarpus angolensis</i>	215.9
<i>Brachystegia boehmii</i>	10.8	<i>Schizolobium excelsum</i>	0.1
<i>Brachystegia floribunda</i>	36.8	<i>Sclerocarya birrea</i>	11.3
<i>Brachystegia spiciformis</i>	0.5	<i>Sesbania micrantha</i>	6.8
<i>Burkea africana</i>	1.0	<i>Sesbania sesban</i>	11.8
<i>Burttavya nyasica</i>	3.6	<i>Senna siamea</i>	541.3
<i>Caesalpinia decapetala</i>	13.4	<i>Senna spectabilis</i>	4,043.5
<i>Colophospermum mopane</i>	1.5	<i>Sterculia africana</i>	0.1
<i>Combretum imberbe</i>	0.1	<i>Sterculia appendiculata</i>	0.1
<i>Combretum zeyheri</i>	0.1	<i>Strychnos spinosa</i>	0.6
<i>Crotalaria spp.</i>	0.8	<i>Tamarindus indica</i>	0.1
<i>Dalbergia melanoxydon</i>	1.0	<i>Tephrosia vogelii</i>	3,341.7
<i>Delonix regia</i>	0.3	<i>Terminalia sericea</i>	32.5
<i>Erythrina abyssinica</i>	0.5	<i>Toona ciliata</i>	11.0
<i>Eucalyptus camaldulensis</i>	2.1	<i>Trichilia emetica</i>	0.3
<i>Eucalyptus grandis</i>	0.8	<i>Xanthocercis zambesiaca</i>	0.1
<i>Eucalyptus urophylla</i>	0.6	<i>Ziziphus abyssinica</i>	105.7
<i>Faidherbia albida</i>	1,489.3	<i>Ziziphus mauritiana</i>	211.0
<i>Flacourtia indica</i>	1.3	<i>Ziziphus mucronata</i>	22.3
<b>Grand Total</b>			<b>16,910</b>

## KEY INTER-PROGRAM MEETINGS AND WORKSHOPS

*Annual Conference of the LRCD*, held September 7-11 in Zomba with the following aims:

- (a) to review results and targets by the ADDs and Donor Projects under the Department,
- (b) to clarify recommended extension messages, best-bet practices, and extension approaches,
- (c) to resolve problems of financing, organization and coordination, and
- (d) to focus programs in concentrated well-run areas to improve results and impacts.

*SO1-SO2 Linkages between MAFEP, SADP and MEMP*: Multiple meetings were held with MEMP, SADP, LRCD, and USAID to determine the nature and scale of a formal program of collaboration to increase results and impacts under SO1 and 2. These meetings followed the visit of Dr Peter Wyeth from WSU in June to facilitate joint agreement on the organization and structure of this program (see MAFE Pub. No 20). This culminated in a Memorandum of Understanding between the 3 projects and USAID spearheaded by WT Bunderson of MAFEP.

*Annual Partner Review Workshops*: MAFEP hosted two review meetings of 2-3 days apiece in July/August with all ADD and NGO partners.

*Area Sampling Frame*: A National Steering Committee was established to oversee the design, development, use and integration of the area-sampling frame with other monitoring tools. Key members/institutions involved included the Planning Division of the MAI, the USAID Agricultural Policy Advisor (Scott Simons), the National Statistics Office, FAO, World Bank, USAID, and several projects, notably MEMP, FEWS, MAFEP and PROSCARP.

*NRM Database*: The structure and content of an updated NRM database was designed and completed under contract to a TPT Systems with joint funding and coordination from MEMP and MAFEP. An expanded agroforestry database is planned as an integrated component of the main NRM database to provide details on results including the biological performance and farmer acceptance of various practices / species in different agro-ecological zones.

*PROSCARP-MAFEP Collaboration*: Monthly meetings have been initiated between MAFEP and PROSCARP under the chairmanship of LRCD to improve collaboration on joint programs.

*CURE Meeting*: MAFEP attended CURE's Environmental Coordination Meeting in Blantyre on September 22<sup>nd</sup>. Dr Itimu presented MAFEP's program on distributing tree and crop germplasm.

*NRM/AF Training Center under NASC*: Funding for a proposed NRM/AF Training Center under the NASC is being finalized with sponsorship from the Netherlands Embassy in Lusaka. The Center is proposed to be closely allied with MAFEP under the LRCD. Additional funding to support the broader mandate of the NASC secretariat is being sought from the EU and USAID.

*Mozambique Visitors*: MAFEP arranged a comprehensive field visit for 11 Mozambique provincial extension officers from the IBIS Rural Extension Zambezia Project, coordinated by Anne Bouckaert. The visit was conducted from July 19-25<sup>th</sup> to MAFEP/Partner agroforestry and soil conservation sites in Lilongwe, Mzimba, Mzuzu, Nkhata Bay, Salima, Balaka, Mangochi, Zomba, Ntcheu and Dedza. A letter of appreciation is included as Attachment 1.

*University of Florida*: Paul Thangata was attached to MAFE for 3 weeks in August to formalize his MS research next year on policy issues affecting agroforestry adoption. A trip report is available.

## **PARTNER SUPPORT NETWORK**

### **Partner Meetings**

Meetings were held with current and new partners to determine the scale of collaboration in 98/99. To this extent, MAFEP revised its Partnership Form to improve partner information on objectives, results to date, targets for 98/99, extension approaches, practices promoted, M&E systems in use, and services required from MAFEP. Details on new partnerships are discussed below.

### **NGOs**

MAFEP was approached by several NGOs for training, germplasm, technical and monitoring support. These include 4 international NGOs: Concern Universal, Africare, CARE and Catholic Relief Services, and two local ones: Greenline Movement and Self-Help Development. GLM is based in Machinga focusing on soil conservation and stabilizing stream banks. SHDI helps farmers in Linthipe to plant trees for income and wood. CU operates in Chikwawa, Dedza, Blantyre and Ntcheu Districts, with activities that include soil and water conservation, crop diversification, and various forms of tree planting/agroforestry. Africare is located in Ntcheu to promote soil conservation, agroforestry and tree planting in 80 villages. Several farmer-based clubs have also sought support from MAFEP, including the Mvera Catholic Church Group, the Balaka Farmers Nursery Club, and the Bwanje Womens Forestry Society. PC volunteers in the health sector are coordinating support for the two latter groups. CARE and CRS plan to begin agricultural and NRM activities in 99/2000.

### **Government Departments**

**ADDs:** During the annual review meetings, MAFEP agreed to offer performance-based grants to expand and intensify results of MAFEP's original sites. The aim is to concentrate efforts in well targeted catchments to produce significant visible impacts. The grant limit is MK200,000/ADD, sufficient to target 330 farm families with established practices equivalent to 130 ha under contour, 6 ha of vetiver nursery, 82,000 tree seedlings, 30+ ha of undersowing and 30+ ha of intercropping with grain legumes. Targets below these levels will correspondingly reduce the size of the grant. Funds will be allocated quarterly depending on reported achievements and expenditures against the targets and budget. This grant system is described in the 1998/99 Workplan.

**Environmental Affairs Department:** The Education and Outreach Unit of the DEA approached MAFEP to provide formal training in agroforestry/soil conservation to 22 officers from six districts. The aim is to equip these officers with knowledge and skills to provide information and assistance to farmers who have requested support on matters related to agroforestry and conservation. This training course is organized for mid October in Dedza, and will include field trips. MAFEP will also present a paper at a DEA workshop to create increased awareness about problems and causes of environmental degradation and their solutions. In addition, the EOU wishes to collaborate with MAFEP in producing posters, extension leaflets, radio programs, and agroforestry articles to include in their upcoming newsletter.

**Peace Corps and the Department of National Parks and Wildlife:** Peace Corps and the Department of National Parks and Wildlife approached MAFEP to provide technical training and extension materials/references to PC volunteers and NP field staff in nursery management, soil and water conservation, and best-bet agroforestry practices. The aim is help farmers in the border zones of National Parks to improve sustainable farming practices and to increase tree and grass products for local use or sale. A training course is being organized for October in Zomba with the provision of reference books, field manuals and extension materials. MAFEP was also requested to train 15 new volunteers arriving in February/March 1999.

### **Private Sector**

CHEETAH, a small commercial firm is seeking support from MAFEP to diversify crop production, with interests in vegetable, insecticide and cosmetic products from trees such as *Moringa oleifera*, *Azadirachta indica* (neem), *Jatropha curcas* and *Bixa orellana* (anatto).

### **Distribution of Tree Germplasm and Nursery Polytubes**

MAFEP organized the packing and delivery of tree seed to partner organizations to the extent that the requested seed was available. Details are shown in Table 3. MAFEP also provided over 3.1 million nursery polytubes to NGOs and 700,000 tubes to PROSCARP and the ADDs.

### **Training**

MAFEP conducted several training courses during the quarter to meet specific training needs identified by recipient organizations. A central focus was to train **core-training teams** for ADDs and NGO partners to improve extension delivery approaches, to expand knowledge and skills in best-bet agroforestry and soil conservation practices, and to improve workplan development with better monitoring and evaluation. Table 4 summarizes courses conducted, indicating participating organizations, target audiences, and subjects covered.

The TOT courses are to be followed with training of frontline staff by both ADDs and NGOs as agreed at the partner review meetings. To this effect, Mzuzu and Karonga ADDs have each conducted training for 40 frontline staff over a two-week period. Lilongwe ADD also conducted training for frontline staff but reduced the duration to 6 days. Other ADDs are in the process of organizing training. A summary of topics, duration and target audience of these courses will be presented next quarter when reports are submitted by the ADDs.

### **Monitoring and Evaluation**

MAFEP's M&E system underwent extensive reviews with field pre-testing in selected sites with key ADD, NGO and Project staff. New dataforms for transects and the CBM&E components have been completed (see 98/99 Workplan). Simple, user-friendly analysis packages are under development for use at the field and ADD level. Implementation of the new M&E system is planned for January/February with most partners following intensive training in early January.

### **Reduced Tillage/AF Demonstrations**

Data from last season have been analyzed (except for pigeon peas, data for which is still coming in), and the management of the program has been reviewed with the ADDs, PROSCARP and LRCD. Based on this, new manuals with dataforms have been printed and distributed in duplicate to both the old and new sites. A report of last season's results will be available next quarter.

### **Production of Extension-Training Materials**

- A tree planting booklet for the new SADP-MAFE linkage project.
- A Training Kit for Agroforestry and Soil Conservation in Malawi, containing a technical reference manual, a comprehensive set of overhead transparencies, and a series of 130 slides.
- A new leaflet on best-bet agroforestry and soil conservation practices in English, Chichewa and Tumbuka. The leaflet will be sent for professional layout and printing at WSU, and for conversion into posters.

Table 3A: Kg of Tree Seed Distributed NGOs and Private Sector, 1998/99

Long-Term Species	Balaka Nursery Clubs	Bwanje Womens For. Society	CCAP-LS	Chilengedwe Club	CPAR	CSC	ELDP	I Kunwenda Estate	ICRISAT	INTERAIDE	IPM Project - DFID	LMC	MCCG	Rockefeller Foundation	SADP	SHDI	VEZA	WVI	Total Kg of Seed	Potential Total No. Seedlings
<i>Acacia galepini</i>	1.25		14				1.50					5.4			81.90			10.3	112.9	270,840
<i>Acacia polyacantha</i>			13									5.65			58.50			15.8	94.5	311,685
<i>Azizelia quanzensis</i>	4			5.2	175							11			135.60			23.4	354.2	88,550
<i>Albizia lebbek</i>		3	2.3												32.00			2.5	39.8	119,400
<i>Albizia zimmermannii</i>												0.05							0.1	158
<i>Brachystegia spiciformis</i>												0.07							0.1	61
<i>Burkea africana</i>												0.05							0.1	57
<i>Burkeldaya nyasica</i>				0.075															0.1	3,750
<i>Eucalyptus spp.</i>	0.005															17.5			17.5	875,250
<i>Faidherbia albida</i>	2.5	6.5	5	7.5	2	0.50	1.52			20.00		8.1			180.00		33.00	21.8	288.4	663,366
<i>Gliricidia sepium</i>			10	18	20							0.6						7.80	56.4	197,400
<i>Gmelina aborea</i>			7									2.5							9.5	950
<i>Jatropha curcas</i>			0.9									2							2.9	1,643
<i>Khaya nyasica</i>		6	16	2	70	99.70	0.70					13.5					29	22.10	259.0	257,273
<i>Melia azadirach</i>			0.8															9.60	10.4	9,100
<i>Moringa oleifera</i>			0.8									5.9							6.7	15,075
<i>Pterocarpus angolensis</i>												0.05							0.1	90
<i>Pterocarpus angolensis</i>		7										0.05							7.1	14,699
<i>Senna siamea</i>		2	10		7	50.90	12.63					4.05	1.37		42.60	4		12.50	147.1	1,617,550
<i>Senna spectabilis</i>		3.5	0.6		2	14.42	11.43					5.60	1.13		55.40	4		20.9	119.0	1,269,120
<i>Sesbania sesban</i>			4		2							5.10							11.1	182,717
<i>Swartzia madagarensis</i>												0.05							0.1	53
<i>Terminalia sericea</i>		3																	3.0	3,906
<i>Toona ciliata</i>		0.1	0.30	0.02													0.3	0.46	1.2	35,400
<i>Ziziphus abyssinica</i>												0.05							0.1	6
<i>Ziziphus mauritiana</i>			1.00															2.4	3.4	2,550
<b>Totals</b>	<b>7.8</b>	<b>48.1</b>	<b>86.7</b>	<b>14.8</b>	<b>278.0</b>	<b>165.5</b>	<b>27.8</b>	<b>0.0</b>	<b>0.0</b>	<b>20.0</b>	<b>0.0</b>	<b>69.8</b>	<b>2.5</b>	<b>0.0</b>	<b>586.0</b>	<b>54.8</b>	<b>33.0</b>	<b>149.6</b>	<b>1,544</b>	<b>5,940,649</b>

Short-term Undersowing Species	Total Kg of Seed	Potential Total No. Ha
<i>Tephrosia vogelii</i>	120.00	329

Table 3B: Kg of Tree Seed Distributed to Government and Donor Projects, 1998/99

Long-Term Species	FD	ADDS								PROSCARP								TOTALS	
	Lhw Forestry Fuelwood Project	Shire Valley ADD	Blantyre ADD	Machinga ADD	Salima ADD	Lilongwe ADD	Kasungu ADD	Mzuzu ADD	Karonga ADD	SVADD	BLADD	MADD	SLADD	LADD	KADD	MZADD	KRADD	Kg of Seed	Potential No. Seedlings
<i>Acacia galepinii</i>		26.30	1.60	36.70	3.00	6.70	232.80	23.40	18.70	15.70			43.70	62.00	110.80			581.4	1,395,360
<i>Acacia polyacantha</i>	1.21	8.40	4.20	29.00	24.60	24.10	121.30	8.10	6.00	9.20	15.90	22.20	53.20	22.50	25.90			375.8	1,240,173
<i>Faidherbia albida</i>	3.26	24.30	13.70	75.60	23.00	85.40	154.40	108.70	16.40	13.50	15.40	69.40	164.30	66.70	96.40	38.00		968.5	2,227,458
<i>Gliricidia sepium</i>														5.00	2.80			7.8	27,300
<i>Khaya nyasica</i>	2.86						94.30	8.40						9.00	18.60			133.2	132,272
<i>Senna siamea</i>	0.92	2.50			14.40		9.00	2.00	1.80	3.50		1.30		4.00	5.50			44.9	494,120
<i>Senna spectabilis</i>	2.17	0.70	15.60	78.00	0.90		31.20	12.20	13.30	2.00		0.20	6.00	20.00	16.10	40.00		238.4	2,542,613
<i>Toona ciliata</i>							0.27	0.10				0.50		0.60	0.10	0.07		1.6	98,460
<i>Ziziphus abyssinica</i>								8.00										8.0	1,000
<i>Ziziphus mauritiana</i>						36.00		7.30	2.00					32.00		5.00		82.3	61,725
<b>Totals</b>	<b>10.4</b>	<b>62.2</b>	<b>35.1</b>	<b>219.3</b>	<b>65.9</b>	<b>152.2</b>	<b>643.3</b>	<b>178.2</b>	<b>58.2</b>	<b>43.9</b>	<b>31.3</b>	<b>93.6</b>	<b>267.2</b>	<b>221.8</b>	<b>273.4</b>	<b>85.9</b>	<b>0.0</b>	<b>2442</b>	<b>8,220,482</b>

Short-term Undersowing Species	No <i>tephrosia</i> seed provided directly to ADDs or PROSCARP as the seed required can be collected locally																Total Kg of Seed	Potential Total No. Ha	
<i>Tephrosia vogelii</i>	43.50																	43.5	9

**Table 4: Training Courses Conducted**

Date	Topics Covered	Organizations	Target Audience	No. of Participants
July 7-9	AF / SWC / A-frame / Line Level	MCCG	Farmers	119
July 30-31	97/98 Results; AWP structure and targets; M&E; Best-bet Technologies; Seed requirements; Seed Collection	All 8 ADDs	Management & Field Supervisors	16
July 31	A-frame / CMR pegging	CPAR	Farmers	34
Aug 13-14	97/98 Results; AWP structure and targets; M&E; Best-bet Technologies; Seed Requirements; Seed Collection	Partner NGOs: Interaide; ELDP; CPAR; LMC; WVI; CCAP-LS; CSC; GLM; CU; SHDI; BWFS; MCCG	Management & Field Supervisors	26
Aug 8 - Sept 4	Training Skills / PRA-PEM / AF / SWC / A-Frame / Line level / Nurseries	All 8 ADDs	Trainers	35
Sept 1-5	AF / SWC / Nurseries	Blantyre ADD	Front Line Staff	25
Sept 28 - October 9	Training Skills / PRA-PEM / AF / SWC / A-Frame / Line level / Nurseries	Partner NGOs: InterAide CPAR LMC WVI CCAP-LS CSC GLM CU SHDI BWFS LFFP Africaire MCCG CRS/CADECOM	Trainers	2 1 4 2 1 3 2 3 1 3 3 1 3 3 1 3 1
			<b>SubTotal</b>	<b>30</b>
			<b>Totals by Category</b>	
			Front Line Staff	25
			Management Staff	42
			Trainers	65
			Farmers	153
			<b>Grand Total</b>	<b>285</b>

## **SO1-SO2 LINKAGES UNDER USAID WITH SADP and MEMP**

A memorandum of understanding to increase impacts under SO1 and SO2 was produced in August and signed by USAID in mid September. Specific objectives are to:

1. Increase smallholder adoption of improved land-use practices and technologies that are economically attractive and sustainable in terms of farm livelihoods and agricultural productivity.
2. Develop improved data and EIS capabilities to monitor and explain environmental impacts from existing or changing land-use practices.

Success requires additional resources and a collaborative, demand-driven program of improved targeting to promote rapid adoption of new/improved technologies, management practices, information systems, and policies. Details and project responsibilities are provided in the MoU and associated report by P Wyeth, International Programs, WSU (MAFE Pub. No. 20).

### **MEMP Linkages**

Expanding collaboration with MEMP will involve:

- Identification of sites and the nature and scale of environmental data collection for collaborative environmental monitoring in relation to resource characteristics and land use.
- Mapping specific MAFEP partner sites in Ntcheu, Zomba, Mwanza and Mangochi Districts to understand how successful impacts relate to the degree of degradation, resources, and land use.
- Assessments of factors affecting adoption rates for different practices.
- Conducting verification trials to better document runoff and erosion parameters under different cultural practices with and without agroforestry measures in selected sites.
- Improved targeting based on MEMP's EI System on the nature of land use and environmental degradation.
- Institutionalizing support and training to operationalize MAFEP's M&E system and MEMP's EIS with Government, donor projects and NGOs:
  - to simplify and standardize monitoring efforts
  - to integrate transect methods for use in the area-sampling frame.
- Expanding and improving the use and development of the E/NRM/Agroforestry database for use by policy makers, donors, projects, and implementing institutions in research and extension.

### **MAFEP-SADP Linkages**

MAFEP conducted extensive field meetings with all 6 ADCs and 15 farmer associations during the quarter with the following aims:

- To explain what MAFEP is and does in the context of proposed collaboration with SADP.
- To explore operational modalities for collaboration with assessments of staff interest and available resources.

- To identify priority farm and land-use problems, differentiating perceptions of SADP staff and farmers, both male and female.
- To prioritize problems and interests related to farm/land management based on farmer consensus in each association.
- To document current actions by farmers to address these problems and needs, and to evaluate them in terms of strengths and weaknesses.
- To identify the level of farmer interest and support for improved tree planting and soil conservation to assess demands for different practices and tree species.
- To identify legume crops with good potential to diversify farming with improved diets and incomes while reducing demands on soil resources.

A 5-member team evaluated results of these field visits to target priority ADCs and associations for the 1998/99 season. With the upcoming rainy season, available time and resources will also limit the scale of planned programs, focusing on the following:

- Concentration in the Rumphu, Ntcheu, and Zomba Centers, although new initiatives will be established with farmer associations in all SADP Centers.
- Delivery of vetiver planting material to establish local nurseries for future planting of vetiver hedges (cannot begin till after start of the rains in December 98).
- Delivery of tree seed in high demand for soil fertility, wood, income and other uses with training and extension support to farmers from agroforestry field staff. *Tephrosia vogelii* is being packed in 500 g pockets to undersow 0.1 ha. Seed of 7 other tree species is being packed in quantities sufficient to grow 100 seedlings per pack. The species and uses are indicated below. Quantities of each species to distribute per association will be determined October 1<sup>st</sup>.

Tree Species	Primary Uses	Recommended Location and Spacing
<i>Acacia galpinii</i> <i>Acacia polyacantha</i> <i>Albizia lebbeck</i> <i>Faidherbia albida</i>	Soil fertility; fuelwood; farm tools; fodder; shade; medicines	2 x 2 m in homesteads & woodlots; 2-4 m apart on boundaries; space widely in farms, 10 x 10 m
<i>Azelia quanzensis</i>	Timber; panelling; flooring; drums; canoes/boats; shade; medicines	2 x 2 m in homesteads & woodlots; 4 m apart on boundaries
<i>Senna siamea</i> <i>Senna spectabilis</i>	Poles; fuelwood; shade	2 x 1 m in homesteads & woodlots; 2-4 m apart on boundaries
<i>Tephrosia vogelii</i>	Soil fertility; fuelwood; soil/water conservation; insecticides; live hedges	Intercrop 2 stations between maize or other crop stations

- Crop diversification with emphasis on improved/recommended varieties of pigeon peas, groundnuts, beans and soyabeans. Estimated total quantities are 20-25 tons. Given the shortage of improved seed, farmers will return the loaned seed + 50% interest to expand the available seed supply. MAFE/SADP will assist farmers to identify markets for these improved crops.

**Recruitment of Land-Use Management Advisors and Purchase of Motorcycles:** Given the upcoming start of the rains, recruitment of the 6 LMAs is an urgent priority along with the purchase of motorcycles for field work. MAFEP obtained and passed on quotes on motorcycles to SADP.

## **WORKPLAN FOR OCTOBER-DECEMBER 1998**

### **Reports and Workplans**

- Complete financial reports for October-December.
- Produce a technical review of alley cropping from a comprehensive assessment of research and on-farm trials nationwide by different partner organizations.
- Complete the analysis and report of AF / SC demonstrations and trials for the 97/98 season.
- Revise the 1998/99 Workplan, if needed, based on feedback from USAID.

### **Equipment and Supplies**

- Purchase 4x4 vehicle for the Linkage Program.
- Purchase computer and related accessories.
- Purchase seed packaging materials for 30 tons of crop seed and 16 tons of tree seed.

### **Germplasm Collection and Inventory**

- Continue collection of tree germplasm in preparation for next season.
- Organize collection of bamboo planting material for pilot testing in Dedza.
- Inventory balance of seed stocks, and organize cold storage.

### **Partner Support Services**

- Purchase, pack and deliver seed inputs and prizes for all 230+ agroforestry demo sites.
- Continue production/distribution of seedlings and field demonstration trials at LGC.
- Design and produce new extension leaflets and posters on vetiver and woodlots.
- Continue technical and training support to field partners.
- Finalize preparation of Instruction Manual on MAFEP's M&E system.

### **MAFE-SADP-MEMP Linkages**

- Recruit a long-term technical advisor for the Linkage Coordinator position under the SO1-SO2 collaborative program, and organize office space, furniture and other support services.
- Arrange orientation sessions for the Linkage Coordinator with USAID, LRCD, and the 3 collaborating USAID projects.
- Develop an acceptable reporting/meeting format for effective inter-project communications.
- Organize packing and delivery of tree and crop seed to ADCs for distribution to farmers.
- Produce seed registration books for each association to document names of recipient farmers with details on quantities of each seed type received.
- Conduct training of ADC/other field staff on planting and managing tree and crop seed.
- Advertise, recruit, train and orient 6 LMAs for each ADC with specific TORs.
- Organize farmer training in all associations.
- Conduct field trips to ADCs to assist and supervise field initiatives by newly recruited LMAs.
- Organize collection and delivery of vetiver planting material to establish vetiver nurseries in the 3 core centers of Rumphu, Zomba and Ntcheu.
- Assist in the design and construction of runoff plots with MEMP at Kamunde.
- Identify sites for environmental monitoring with details on data requirements and methods for their collection.

## LIST OF ACRONYMS AND ABBREVIATIONS

ACDI	Agricultural Cooperatives Development International
AF	Agroforestry
ARET	Agricultural Research and Extension Trust (parastatal)
BWFS	Bwanje Womens Forestry Society
CCAP-LS	Church of Central African Presbyterian, Livingstonia Synod
CMU	Coordination and Management Unit of MAFE (USAID)
CPAR	Canadian Physicians for Aid and Relief
CRS	Catholic Relief Services
CSC	Christian Services Committee
CURE	Coordinating Unit for the Rehabilitation of the Environment
DARTS	Department of Agriculture Research & Technical Services (MOA&I)
DAET	Department of Agricultural Extension and Training (MOA&I)
EU	European Union
FD	Forestry Department (MFF&EA)
FRIM	Forestry Research Institute of Malawi (MFF&EA)
GIS	Geographic Information Systems
GLM	Greenline Movement
ICRISAT	International Center for Research in the Semi-Arid Tropics
IPM-DFID Project	Integrated Pest Management Project funded by DFID
LFFP	Lilongwe Forestry Fuelwood Project
LMC	Lutheran Mobile Clinics
LRCDD	Land Resources and Conservation Department (MOA&I)
LRT	Lilongwe Round Table
M&E	Monitoring and Evaluation
MAFEP	Malawi Agroforestry Extension Project
MCCG	Mvera Catholic Church Group
MEMP	Malawi Environmental Monitoring Project (University of Arizona)
MAI	Ministry of Agriculture and Irrigation
MPT	Multi-purpose Trees
NASC	National Agroforestry Steering Committee (MFF&EA/MOA&I)
NATURE	Natural Resource Management and Environmental Support Program (USAID)
NGO	Non-Governmental Organization
NPA	Non-Project Assistance
NTSC	National Tree Seed Centre (FRIM)
PA	Project Assistance
PROSCARP	Promotion of Soil Conservation and Rural Production (formerly PAPPPA)
RT	Reduced Tillage
SADP	Small Agribusiness Development Project (ACDI-USAID)
SC	Soil Conservation
SHDI	Self Help Development International
SO	Strategic Objective
TEAM	Tobacco Exporters Association of Malawi
USAID	United States Agency for International Development
VEZA	Village Enterprise Zone Association
WVI	World Vision International
WB	World Bank
WSM	Wildlife Society of Malawi
WSU	Washington State University

**Attachment 1: Mozambique Visit to MAFEP/Partner Sites**

From: IBIS-ERZ <IBIS-ERZ@maf.org>  
To: mafe@malawi.net <mafe@malawi.net>  
Subject: Thanks for the visit !!  
Date: Monday, July 27, 1998 10:52 PM

Dear Dr. Bunderson,

On behalf of my colleagues and myself, I would like to express our sincere thanks for the visit that was organised by your organisation. We especially wish to thank Mr. Siyeni for his excellent guidance through the whole visit. His enthusiasm was remarkable and showed great interest in the work and willingness to share his knowledge. We are very satisfied with what we saw, not only on agroforestry techniques but equally on how Malawian extension works and is able to convey messages that are very quickly adopted by farmers. We learned a lot !!! We have invited Mr. Siyeni to visit us in Mozambique. This invitation of course extends to you and other colleagues.

We have decided to translate the whole agroforestry field manual into Portuguese, that is if you agree with this idea. Of course, we will send you a copy when ready.

We were also very fond of the Malawi agroforestry t-shirts, and if they are still on sale, I will send you a list of the number we would like to buy.

Thanks again.

Greetings from all of us,

Ann Bouckaert  
**Project Coordinator**