



MANAGEMENT FOR ADAPTATION TO CLIMATE CHANGE

**TECHNICAL AND FINANCIAL REPORT:
AUGUST 2010 TO JULY 2011**

Conservation Agriculture

Conventional Farming



Submitted to the Royal Norwegian Embassy

Prepared by:

W. Trent Bunderson, Zwide D. Jere, Richard Museka, Felix Chadwala, Victoria Kambalame, Mwiriha Kapondamgaga, Brand Mbale, Haig Sawasawa and Makaiko Khonje

Total LandCare

With support from

TLC Field and District Assembly Staff from all 5 Districts

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ACRONYMS AND ABBREVIATIONS

ACE	Agricultural Commodity Exchange
ADP	Agricultural Development Program, Min. of Agriculture & Food Security
APS	Annual Program Statement
BERL	Bio-Energy Resources Limited
CARE	CARE International
CBNRM	Community-Based Natural Resources Management
CBO	Community-Based Organization
CHIA	Chia Watershed Management Project, USAID
CISANET	Civil Society for Agricultural Network
COMPASS	Community Partnerships for Sustainable Resource Management, USAID
CRS	Catholic Relief Services
CIMMYT	International Maize and Wheat Improvement Center
DA	District Assembly
DEC	District Executive Committee
DFC	District Field Committee
DMC	District Management Committee
DNPW	Department of National Parks and Wildlife
EAD	Environmental Affairs Department
EPA	Extension Planning Area
EU	European Union
FAO	Food and Agricultural Organization of the United Nations
FD	Forestry Department
GHG	Green House Gases
GIS	Geographical Information System
GOM	Government of Malawi
GTZ	German Agency for Technical Cooperation
GVH	Group Village Head Person
ICRAF	International Centre for Research in Agroforestry
ICRISAT	International Centre for Research in the Semi-Arid Tropics
IDEAA	Initiative for the Development of Equity in African Agriculture
IITA	International Institute for Tropical Agriculture
MACC	Management for Adaptation to Climate Change, Norwegian Government
M&E	Monitoring and Evaluation
MoAFS	Ministry of Agriculture and Food Security
MSMEs	Micro, Small and Medium Enterprises
NASFAM	National Smallholder Farmers Association of Malawi
NGO	Non Governmental Organization
NRB	Natural Resource Based
NRM	Natural Resource Management
PA	Protected Area
PLWHA	People Living With HIV/AIDS
PSC	Project Steering Committee
RNE	Royal Norwegian Embassy
SSLPP	Small Scale Livestock Promotion Project
TA	Traditional Authority
TLC	Total LandCare
USAID	U.S. Agency for International Development
VNRMC	Village Natural Resources Management Committee
VS&L	Village Savings and Loans
WESM	Wildlife and Environmental Society of Malawi

EXECUTIVE SUMMARY

Introduction and Project Goal

This Annual Technical Report covers the period August 2010 to July 2011.

The overall goal of the MACC Project is to improve the livelihoods of rural communities in the central watersheds of Lake Malawi. A key focus is to reduce their vulnerability and risk to climate change by building capacity to increase food security, diversification, and income generation consistent with sound management of land and water resources.

Meetings and Collaborative Activities

- **Project Annual Review Meeting:** A meeting was held on November 25 between TLC Management staff and officers of the Royal Norwegian Embassy a) to review results from 2009/10 and the workplan for 2010/11, and b) to evaluate weaknesses with the project and how these could be addressed. The minutes of this review meeting were prepared and signed by both parties. Key points on areas for improvement were 1) to more effectively document participation by women, 2) to demonstrate how the project is reaching out to households affected by HIV/AIDS, and 3) to document impacts of interventions in terms of improvement in people's livelihoods and general well being.
- **Project Audit Report:** The annual audit report for 2009/10 was completed and submitted under separate cover to the RNE. The audit report for 2010/11 is due to take place in October 2011 for submission to the RNE for their annual review of the project.
- **Other Norwegian funded Projects:** The Development Fund of Norway was introduced to TLC and other Norwegian Funded projects in Malawi in June 2011. The aim is to evaluate the potential for DF to assume a coordinating role for all projects funded by the RNE. In this regard, TLC took the DF Director Knut Andersen and Country Manager, Victor Jere to MACC field sites to familiarize them with the project. Thereafter, a series of meetings were held with DF and other RNE projects to assess how to collaborate more effectively. A key aim is to develop a coordinated harmonized program of operation for the future. Details of these meetings have been reported by the DF to the RNE.

TLC also continues to liaise and share experiences with 3 other key projects in Malawi: The FAO Food Security Project, NASFAM and the Malawi Lake Basin Project with the SCC. Collaboration with these projects offers insights on the value and effectiveness of different interventions and approaches to improve upon or broaden our respective programs. TLC acknowledges and appreciates the strong interest and participation of the Royal Norwegian Embassy through Dr Augustin Chikuni, Ms Marita Sorheim-Rensvik, and Ms. Monica Stensland, who has replaced Marita in facilitating this type of collaboration.

- **National CA Task Force:** TLC continues to be an active member of the NCATF in Malawi with responsibility for technical contributions on best practices in different agro-ecological zones. The Secretariat is the Land Resources Conservation Department in the MoAFS which has held several meetings during the past 6 months to share experiences and lessons, and create better awareness about CA activities and developments in Malawi. The Secretariat has also distributed scientific papers on CA as well as notices about international meetings and conferences across the world. NCATF charged TLC with the task to produce Guidelines on CA practices in Malawi, including a full definition, how to implement all components of CA, and the methodology for effective extension to farmers. TLC's guidelines of CA are currently under review by the NCATF.

- **Conservation Agriculture Regional Program (CARP):** In July 2011, TLC became an official partner of the Regional Norwegian initiative with COMESA to scale up CA in Malawi, Kenya and Uganda. This is a 4 year program with the CFU in Zambia as the coordinating body. TLC is the implementing partner for Malawi and is targeting 20 EPAs across all 3 regions of the country. Jan Eric of the RNE in Zambia is the key contact for the project, the details of which have been communicated to the RNE in Malawi.
- **Stakeholder Engagement:** A major aim of MACC is to coordinate its programs with other interested parties and organizations to strengthen our respective activities and to share experiences, knowledge and lessons. In order to identify potential collaborators, several group and individual meetings were held to determine common areas of interest and to define the specific roles and activities appropriate for each organization to maximize the resources available, human and physical. To facilitate collaboration, meetings are being held with a broad range of organizations from Government, donor projects, NGOs and private firms to with the aim to more fully engage relevant parties in the project. Collaborative relationships of this nature will complement our comparative strengths to increase effectiveness and impacts of project activities. Details on collaboration with other parties were presented in the 2008/09 Annual Report.

Good progress continues to be made to collaborate with Government Departments, District Assemblies, communities, other donors, projects, and NGOs. This is critical to increase opportunities to reach more people, to improve effectiveness and impacts.

Two projects in particular are noteworthy:

1. The USAID Kulera Biodiversity Project led by TLC with communities around the protected areas of Nyika-Vwaza, Nkhotakota Wildlife Reserve, Ntchisi Forest Reserve and Mkuwazi FR. The latter 3 PAs all fall within the project area of MACC, hence collaboration is essential to share resources and costs for greater efficiency and effectiveness.
2. The GEF World Bank project to support the Nkhotakota Wildlife Reserve

- **Capacity building** continues with District Assemblies, Government Agencies, collaborating NGOs and projects, CBOs, and targeted communities. Details on trainings and meetings held within the districts are summarized in table form in this report.

Field Results for 2010/11

Field results are presented for the year for each intervention in terms of beneficiary villages, households and the scale/level of implementation in terms of area or numbers.

1. INTRODUCTION

1.1 Purpose

The aim is to improve the livelihoods of rural communities within a context that develops and secures the capacity of rural communities for adaptation to climate change in a manner that is productive and sustainable. The underlying principles entail an integrated holistic approach with a three-point thrust:

- ➔ To reduce risks and vulnerability from erratic and unpredictable changes in climate.
- ➔ To improve food security, nutrition, and general well-being of rural communities.
- ➔ To assist farm households in making the transition from subsistence survival to a business oriented mind-set that promotes self-sufficiency and growth.

1.2 Key Objectives

The elements outlined above will be implemented to achieve the following objectives using TLC's successful model of extension and training:

- ➔ Reduce deforestation by improving the economic use and management of natural resources to supply wood energy and construction materials to meet farm and household needs on a sustainable basis focusing on the following interventions:
 - Tree planting with a concentration at the household level to build self-sufficiency.
 - Sustainable management of natural woodlands and trees.
 - Introduction of energy-saving stoves to reduce wood use and the burden on women and girls for fetching wood from areas far from the household.
- ➔ Improve household food security, nutrition, and incomes by increasing and diversifying farm productivity with low input costs through a) crop diversification, b) winter irrigation, and c) integration of livestock.
- ➔ Develop opportunities to establish and operate rural-based enterprises with strong links to sound markets to increase opportunities for self-sufficiency and prosperity.

All interventions are implemented using sound land and water management practices to ensure sustainability. The benefits realized by communities accrue from the synergistic effects of a holistic approach with diverse interventions. This will reduce vulnerability and risks to climate change. Impacts will attract interest from adjacent communities, as well as buy-in from other donors and organizations to expand the program to other areas of Malawi.

1.3 Target Areas

The project covers 11 Extension Planning Areas (EPAs) across five districts with diverse farming systems and agro-ecological zones (see **Map 1**). The districts and EPAs targeted are shown below (Note: Khombedza was split to include Mtosa; Malomo replaced Chikwatula in Ntchisi and Nachisaka replaced Mvera in Dowa due to other TLC projects in these EPAs).

- Nkhata-Bay District: Chintheche and Tukombo EPAs
- Ntchisi District: Malomo and Kalira EPAs
- Nkhotakota District: Nkhunga, Zidyana, Linga and Mwansambo EPAs
- Salima District: Khombedza and Mtosa EPAs
- Dowa District: Nachisaka EPA

2. TRAININGS AND MEETINGS

Table 1 summarizes all trainings, meetings, field days and field tours conducted for field staff, partner organizations and communities. These activities are critical to ensure that capacity is built for sustainability through hands-on experience in all technologies. This is reflected in the quality of implementation during the year.

3. FIELD RESULTS

3.1 Community Participation

The cumulative number of villages and households that have benefitted to date from various project interventions totals 2407 and 43,768 respectively (see **Table 2**).

Map 1: Geographic Coverage of MACC showing Districts and EPAs

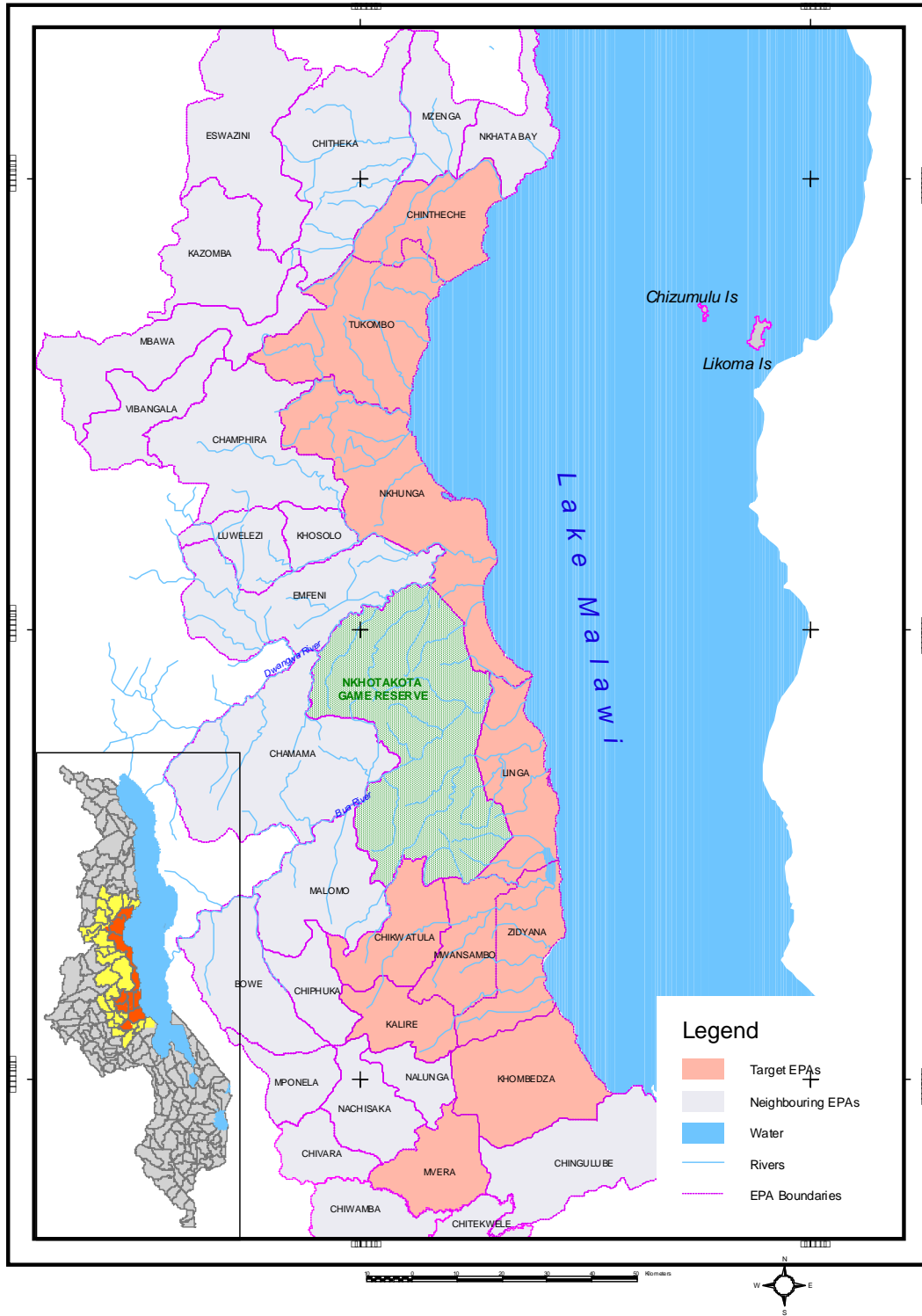


Table 1: Trainings, Meetings, Field Days and Tours Conducted from Aug 2010 to July 2011

MEETINGS/TRAININGS	Nature of Training	Participants (# People)			Total Participants (includes Leaders)		
		# Courses	# Govt	# NGO	# Project	# Male	# Female
Staff Training							
Ext/Training Approaches	3	13	0	2	10	5	15
CBO Structure/Constitutions/Bye-Laws	4	23	0	1	20	4	24
Improved Wood Stoves	6	24	1	3	21	7	28
Conservation Agriculture & Agroforestry	7	49	4	2	41	14	55
Irrigation	5	19	0	1	11	9	20
Crop Diversification	4	6	3	4	13	0	13
Livestock Production & Marketing	1	4	0	0	1	3	4
Business Skills & Marketing	2	2	1	2	5	0	5
Community Sensitization Meetings	# Meetings	# Villages	# Leaders	# Villagers	# Male	# Female	Total PPs
Ext/Training Approaches	25	115	190	1270	890	570	1460
CBO Structure/Constitutions/Bye-Laws	34	788	1004	3848	3145	1707	4852
CBNRM / Co Mgt	54	160	213	3001	1652	1562	3214
Forestry Nurseries / Tree Planting	351	1150	1144	15438	10039	6543	16582
Natural Regeneration	146	421	404	8724	5336	3792	9128
Improved Wood Stoves	257	856	861	12820	7023	6658	13681
Conservation Agriculture & Agroforestry	195	879	865	8682	6619	2928	9547
Irrigation	146	389	360	4792	3387	1765	5152
Crop Diversification	65	256	263	3779	2604	1438	4042
Livestock Production & Marketing	84	245	246	3842	2481	1607	4088
Enterprise Development	24	51	38	624	318	344	662
Business Skills & Marketing	6	52	6	786	701	91	792
Community Training/Demonstrations	# Courses/Demos	# Villages	# Leaders	# Villagers	# Male	# Female	Total PPs
Ext/Training Approaches	6	152	105	159	166	98	264
CBO Structure/Constitutions/Bye-Laws	13	140	133	1 721	998	856	1854
CBNRM / Co Mgt	3	17	72	843	548	367	915
Forestry Nurseries / Tree Planting	30	542	697	12 123	7 167	5 653	12820
Natural Regeneration	7	31	104	1 112	709	507	1216
Improved Wood Stoves	57	466	570	6 096	2 774	3 892	6666
Conservation Agriculture & Agroforestry	36	346	328	3 272	2 331	1 269	3600
Irrigation	36	221	161	2 084	1 154	1 091	2245
Crop Diversification	24	206	136	2 154	1 525	765	2290
Livestock Production & Marketing	26	87	33	478	315	196	511
Enterprise Development	15	42	31	260	155	136	291
Eco Tourism	1	1	0	13	5	8	13
Business Skills & Marketing	6	27	42	192	149	85	234
Field Days	# F-Days	# Staff	# Leaders	# Villagers	# Male	# Female	Total PPs
CBNRM / Co Mgt	2	2	4	122	45	81	126
Forestry Nurseries / Tree Planting	13	64	70	1 221	770	521	1291
Improved Wood Stoves	21	39	94	793	476	411	887
Conservation Agriculture & Agroforestry	25	128	252	2 817	1 732	1 337	3069
Irrigation	6	14	38	433	268	203	471
Crop Diversification	6	24	94	973	573	494	1067
Livestock Production & Marketing	11	50	68	810	503	375	878
Field Tours	# Tours	# Staff	# Leaders	# Villagers	# Male	# Female	Total PPs
Forestry Nurseries / Tree Planting	4	4	0	4	4	0	4
Natural Regeneration	3	3	0	3	3	0	3
Conservation Agriculture & Agroforestry	4	6	52	176	136	92	228
Irrigation	1	1	0	1	1	0	1
Crop Diversification	1	0	5	51	33	23	56
Livestock Production & Marketing	3	1	1	15	10	6	16

Note: Overall, participation by women in all meetings and trainings was 41.6%

3.2 Gender Participation

TLC actively seeks to involve women in all trainings and meetings (41.6%, see Table 1). A key initiative to ensure good participation is to avoid off-site venues due to cultural barriers by men to allow single or married women to attend such meetings alone. Implementation of most interventions on agriculture and forestry is by necessity a joint endeavor involving all members of the household who are able-bodied and old enough to participate. This is reflected in the results presented in Tables 3-10. The rare exceptions to joint participation of the genders are small enterprises that can be handled individually due to lower labor demands, e.g. bee keeping. Some of these involve more men than women and vice versa.

3.3 Results on Interventions and Impacts

Results for 2010/11 vs. targets are summarized in **Table 2**.

In most cases, targets were achieved. Exceptions are explained in the narrative for each component described below.

A report on household and impact surveys for all interventions has been carried out and is being edited for submission under separate cover.

3.4 Community Based NRM Associations

The formation of new CBNRM associations with co-management agreements has been affected by the institution of a new system with the Departments of National Parks & Wildlife and Forestry. This system involves establishing an umbrella association for each protected area in the country to coordinate all village/community based structures for that PA. This means that all previously registered CBNRM associations that include co-management agreements in a protected area will fall under this umbrella association. Villages that wish to enter into such agreements must sign up with the umbrella association which is managed by an executive committee comprising leaders from the border zone of the PA in question and representatives from the Government Department in charge of managing the PA.

The structure is in the process of being harmonized between the two mentioned Departments above. Legal registration of these entities with the Registrar General under the Ministry of Justice takes time, but good progress is being made in terms of organizing the associations for each PA with management plans, constitutions and bye-laws.

3.5 Forestry

Results for the season are shown in **Table 3**.

During the season, 2,162,205 tree seedlings were planted against the original target of 2,500,000 which was doubled last year to 5 million. Due to limited human, financial and physical resources, this target was cut back to the original level as the balance could be taken up by the Kulera Biodiversity Project.

No bamboo was planted due to the lack of seed from the synchronized flowering and seeding by bamboo in this area which occurs once in a lifetime, usually after 20+ years. However, TLC has now secured local bamboo seed to meet the targets next year.

Promotion of natural regeneration in village and individual forest areas has so far totaled 390 ha with an estimated 653,770 regenerating trees.

The new brick stoves are proving to be very popular due to their efficiency, durability and ease of construction. A total of 8,326 households are using these stoves, and the driving force is women as they are responsible for fetching firewood and for cooking.

Table 2: MACC Results vs. Targets August 2010 - July 2011 (page 1 of 4)

PERFORMANCE INDICATOR	MEASUREABLE INDICATORS OF PERFORMANCE	TARGETS VS. RESULTS 2009/10		TARGETS VS. RESULTS 2010-11			Comments
		Target	Result	Target	Result	%	
CUMULATIVE BENEFICIARIES TO DATE	No. of Participating Villages	2 000	2 318	2 500	2 407	96.3%	Data collected annually & reported at Year end
	No. of Participating Households	40 000	42 004	45 000	43 768	97.3%	
COMMUNITY-BASED NRM & CO-MGT AGREEMENTS ESTABLISHED AND IMPROVED (support the formation, re-organization and registration of these associations/groups under 2 Umbrella Associations)	No. of Participating Villages	500	67	500	In process with the Departments of Forestry and National Parks/Wildlife		Two Associations being formed with constitutions & bye laws for registration with Min of Justice
	No. of New CBNRM Associations Formed & Registered	2	0	2			
	No. of Co-Mgt Agreements with Constitutions & Bye Laws	2	0	2			
	No. of Village Resource Assessments Conducted	NA	NA	2			
	Ha of Forest Areas Demarcated for Cons. & Mgt	200	822	400	390	97.5%	Too early to produce harvestable products
	No. of Regenerating Natural Trees	250 000	1 233 435	600 000	583 770	97.3%	
	Quantities of Harvestable Products ⁴	NYD	NYD	NYD	NYD	NA	
	Sales and Income of NR Products ⁴	NYD	NYD	NYD	NYD	NA	
FORESTRY PRACTICES IMPLEMENTED AND ENHANCED	No. of Participating Clubs/Villages	1 000	1 166	1 250	796	63.7%	Targets were doubled from original workplan due to high interest, but implementation was shared with TLC's USAID Kulera Project, thus results were reduced based on revised targets
	No. of Participating Households	15 000	24 079	25 000	13 573	54.3%	
	No. of Nurseries Established	1 000	1 099	1 250	833	66.6%	
	No. of Tree Seedlings Raised	2 500 000	3 272 607	5 000 000	2 217 971	44.4%	
	No. of Tree Seedlings Planted	2 000 000	2 591 797	4 000 000	2 162 205	54.1%	
	No. of Bamboo Seedlings Raised	50 000	No seed due to synchronized flowering every 20 yrs				
	No. of Bamboo Seedlings Planted	40 000					
	No. of HHs with improved stoves	1 000	2 858	3 000	8 326	277.5%	

Table 2: MACC Results vs. Targets August 2010 - July 2011 (page 2 of 4)

PERFORMANCE INDICATOR	MEASUREABLE INDICATORS OF PERFORMANCE	TARGETS VS. RESULTS 2009/10		TARGETS VS. RESULTS 2010-11			Comments
		Target	Result	Target	Result	%	
IMPROVED SUSTAINABLE LAND & WATER MANAGEMENT PRACTICES ADOPTED	No. of HHs Participating in CA	1 500	3 296	3 500	3 790	108.3%	CA is now combined with AF, Vetiver & Organic Manures
	Area under CA (ha)	450	1 092	1 400	1 386	99.0%	
	Maize Yields under CA Pure Stand	3 500	4 952	4 500	5 524	122.7%	Yields are based on long term farmer plots in 6 areas
	Maize Yields under CA Intercrop	3 250	4 448	4 200	5 613	133.7%	
	Yields of Maize under Traditional Practice	3 000	3 815	3 750	4 402	117.4%	Low access to fruit trees
	No. of HHs with Fruit Trees	750	163	500	254	50.8%	
	No. of HHs with S&WC Measures	1 000	760	1 000	224	22.4%	Focus is now on CA
	No. of HHs using Organic Manure	No Target	4 625	4 000	1 931	48.3%	
No. of HHs with AF Species	500	951	1 000	2 269	226.9%	SI Trees & Tephrosia	
CROP DIVERSIFICATION AND IRRIGATION	Ha under Rainfed Kilombero Rice	400	398	400	481	120.3%	Includes seed to 106 farmers; others had kept own seed
	Yield of Rainfed Kilombero Rice (tons)	800	892	800	915	114.3%	
	Ha under Winter Sugar Beans	150	69	150	53	35.3%	Available seed limited the area planted
	Yield of Winter Sugar Beans (tons)	200	87	200	78	39.2%	
	Ha under Rainfed Grain Legumes	200	202	200	257	128.7%	Yields affected by late planting and erratic rainfall
	Yields of Rainfed Grain Legumes (tons)	300	85	300	205	68.5%	
	Ha under Paprika / Bird's Eye Chillies	50	426	100	827	826.5%	Includes rainfed & irrigated crops
	Yield of Paprika / Bird's Eye Chillies (tons)	30	90	80	508	635.4%	
	Ha under sweet Cassava	100	226	100	260	259.5%	Includes previous & new planting material supplied
	Yield of Cassava (tons)	2 000	116	2 000	3 114	155.7%	
Ha under Irrig Veggies, Spices & Cereals	250	420	250	189	75.6%	Results based on 1 irrigated crop	
Yield of Irrig Veggies, Spices & Cereals (tons)	450	467	600	486	81.0%		

Table 2: MACC Results vs. Targets August 2010 - July 2011 (page 3 of 4)

PERFORMANCE INDICATOR	MEASUREABLE INDICATORS OF PERFORMANCE	TARGETS VS. RESULTS 2009/10		TARGETS VS. RESULTS 2010-11			Comments
		Target	Result	Target	Result	%	
ENTERPRISES PROMOTED	Under Assessment with selected participants already undertaking the enterprises + a few new ones						
Bee Keeping	No. of Clubs	30	42	30	8	26.7%	Program was scaled down based on mid term evaluation due to low production levels
	No. of HHs Participating	300	544	300	94	31.3%	
	Quantities of Honey Harvested (kg)	1 500	854	2 000	716	35.8%	
	Honey Sales and Income (MK)	202 500	311 459	450 000	214 200	47.6%	
Cage Culture & Fish Farming	No. of Cages Built and in Use	30	11	2	0	0.0%	Cage culture discontinued due to poor production & mgt
	Quantities of fish harvested (kg)	5 000	360	400	0	0.0%	
	Fish Sales and Income (MK)	500 000	167 290	200 000	0	0.0%	
	No. of Fish Ponds Stocked with Fingerlings	20	21	5	5	100.0%	Fish farming appears to be successful with only a few individuals due to costs and poor mgt
	Quantities of fish harvested (kg)	3 000	1 149	500	354	70.8%	
	# of Fingerlings sold	NA	NA	1 000	1 148	114.8%	
	Fish / Fingerling Sales and Income (MK)	300 000	325 838	142 500	151 150	106.1%	
Livestock Production	No. of Households keeping improved Livestock	100	143	250	189	75.6%	Rate of growth & supply of quality animals affected results
	Animal Sales and Income (MK)	1 000 000	551 315	2 500 000	1 414 082	56.6%	
Mushroom Production	No. of HHs	20	41	20	38	190.0%	Production levels remain low due to limited mgt abilities and markets
	No. of New Mushroom Houses Built	20	12	2	4	200.0%	
	Quantities of Mushroom Harvested (kg)	1 500	263	200	370	185.0%	
	Mushroom Sales and Income (MK)	540 000	131 220	72 000	285 500	396.5%	
Collection & Sales of Wild Mushrooms	No. of Individuals Active in Mushroom Collection	2 000	2 941	2 500	180	7.2%	
	Quantities of Mushroom Collected (kg)	3 000	157 165	150 000	1 920	1.3%	
	Mushroom Sales and Income (MK)	1 080 000	1 677 360	1 500 000	288 000	19.2%	

Table 2: MACC Results vs. Targets August 2010 - July 2011 (page 4 of 4)

PERFORMANCE INDICATOR	MEASUREABLE INDICATORS OF PERFORMANCE	TARGETS VS. RESULTS 2009/10		TARGETS VS. RESULTS 2010-11			Comments
		Target	Result	Target	Result	%	
Eco-Tourism ⁵	No. of Participating Villages in Eco-Tourism	3	11	3	4	133.3%	Low numbers due to the focus was on farming and other practices. New cultural centers are not yet ready for visitors
	No. of Households	100	162	100	54	54.0%	
	No. of Tour Managers Trained	2	0	2	0	0.0%	
	No. of Tour Guides Trained	2	12	2	0	0.0%	
	No. of Cultural Centres built	1	8	1	4	400.0%	
	No. of Hiking/Bike Trails built	2	1	1	0	0.0%	
	No. of Boats Constructed	1	1	1	0	0.0%	
	No. of Hides Constructed	1	0	1	0	0.0%	
	No. of 4x4 Tracks Built for Access	1	0	1	0	0.0%	
	No. of Visitors	No Target	59	100	12	12.0%	
	Income Generated per Club	No Target	37 000	100 000	14 000	14.0%	
PROGRAM IMPACTS MONITORED	Average Income per year	25%	Sample surveys to be done at end of Yr 2	25%	Household / Impact Survey conducted & reported under separate cover		
	% of Households Food Secure Year-round	20% / year		20% / year			
	% Households Wood Secure ⁶	None Yet ⁶		None Yet ⁶			
	Natural Resource Monitoring ⁷	Not Yet Determined					

NOTES

NYD=Not Yet Determined; NA=Not Applicable; TBD=To Be Determined

1. Baseline surveys was conducted and reported in 2009 so figures will be filled in after the analysis is complete.
2. Targets in subsequent years may change based on results, costs and response by communities.
3. Results will be specified in semi-annual and annual reports - January and June of each year.
4. Figures depend on resource assessment and mgt plan to identify products, sustainable harvest levels, prices & markets.
5. Targets on outputs & sales not yet established due to need for information on the nature & potential of tourist markets
6. There is a lag time of at least 3 years before planted trees are large to harvest wood
7. Natural resource monitoring is under investigation with the procurement of professional services & satellite imagery over the project life

Table 3: Forestry Interventions, Aug 2010-July 2011

Tree Planting	Results Across Sites
# Villages	796
# Households	13 573
# Male Participants	8 456
# Female Participants	5 117
# Nurseries	833
# Seedlings Raised	2 217 971
# Trees Planted on Homesteads	523 647
# Trees Planted on Communal Lands	1 402 969
# Trees Planted on Farms	233 038
# Fruit Trees Planted	2 551
# Total Trees Out-Planted (all types)	2 162 205
Nat Regeneration (Village Forest Areas)	
# Villages	79
# Households	1 381
# Male Participants	671
# Female Participants	430
Total Area (ha)	282
Regenerating Trees (#)	422 430
Nat Regeneration (Individual Forest Areas)	
# Villages	49
# Households	75
# Male Participants	58
# Female Participants	29
Total Area (ha)	108
Regenerating Trees (#)	161 340
Improved Kitchen Stoves (#)	
# Villages	629
# Households ²	8 326
# Female Participants	8 327

Participation by women in forestry activities was 37.1%

² Participation with the stoves is 100% women but they are used to cook food for the entire household

3.6 Chia Lagoon Fisheries Management Association

The MACC Project has continued to support the management of the Chia Lagoon Fisheries Management Association which comprises 12 BVCs with 831 fishers, and 73 fish vendors from 17 villages.

Fish catches and sales by fishers from the Lagoon are shown in **Table 4** while sales at the Chia Market are presented in **Table 5**.

Results above show good average catches and sales per fisher for the period. The average income per fisher for the 12 month period is Mk 54,407. This helps to explain the importance of managing the fisheries in the lagoon in order to safeguard the livelihoods of the people around its borders. Sales of fish at the Chia Market indicates that the vendors are making an excellent living with an average income of

Table 4: Fish Catches by Species at the Beach, Chia Lagoon Aug 2010 to Jul 2011

Period	Species	Catch (kg)	Price / kg	HH Use (Kg)	Total Sales (Kg)	Total Sales (MK)	Avg HHI (MK)
Total / Avg for the Period Aug 2010 - July 2011	Chambo	10 271	130.81	1 048	9 433	1 233 917	1 485
	O/Tilapia	34 852	159.21	3 316	29 845	4 751 742	5 718
	Kambuzi	65 792	109.63	6 528	58 750	6 440 704	7 751
	Kampango	5 180	128.39	503	4 531	581 694	700
	Mlamba	165 658	112.46	16 045	144 409	16 239 600	19 542
	Mpasa	2 792	223.79	182	1 640	367 105	442
	Sanjika	1 342	202.70	119	1 075	217 850	262
	Others	156 188	112.46	15 184	136 754	15 379 610	18 507
Total / Avg		442 075	117.00	42 926	386 437	45 212 221	54 407

Table 5: Fish Sales at Chia Fish Market for the period Aug 2010 to July 2011

Period	Type of Fish	Main Species	Price/kg (MK)	Total Sales (Kg)	Total Sales (MK)	Avg HHI (MK)
TOTAL FOR THE PERIOD AUG 2010 - JUL 2011	Fresh *	Chambo	774	4 018	3 111 514	42 623
		Kampango	137	1 994	272 623	3 735
		Mlamba	142	994	140 696	1 927
		Others	776	3 256	2 527 607	34 625
		Sub-Total	590	10 262	6 052 440	82 910
	Dried	Chambo	0	0	0	0
		Kampango	0	0	0	0
		Mlamba	0	0	0	0
		Others	495	127	62 679	859
		Sub-Total	495	127	62 679	859
	Smoked	Chambo	700	3 347	2 342 803	32 093
		Kampango	24	6 737	159 074	2 179
		Mlamba	170	309	52 434	718
		Others	765	2 645	2 022 307	27 703
		Sub-Total	351	13 037	4 576 619	62 693
Total / Avg	Grand Total		456.40	23 426	10 691 737	146 462

* Includes frozen fish stored in the cold room

The income per vendor is substantial which illustrates the value of this fishery resource.

3.7 Sustainable Agricultural Practices

Table 6 shows results on conservation agriculture, agroforestry and other soil and water conservation practices.

Conservation agriculture deserves a special note because of its huge impact in terms of its excellent performance during dry spells with little or no signs of stress when replanting was often needed with traditional practices, or where crops are showing severe drought stress which will impact crop yields. TLC is now integrating agroforestry and soil conservation practices such as vetiver and organic manures on land with CA. The reasons are due to the beneficial and complementary effects of these practices when combined on the same land.

Table 6: Sustainable Agricultural Practices, Aug 2010-July 2011

Conservation Agriculture	Result
# Villages	503
# Households	3 790
# CA Input Packs Delivered	3 490
# Male Receiving Input Packs	NDA
# Female Receiving Input Packs	NDA
Area Under CA	1 386
Faidherbia albida	
# Villages	187
# Households	2 244
# Male Participants	2 006
# Female Participants	1 422
# FA Trees Planted	116 519
# Ha under FA	2 330
AF Tephrosia/PP Intercropping	
# Villages	6
# Households	25
# Male Participants	16
# Female Participants	9
# Ha	5
Organic Manures	
# Villages	316
# Households	1 931
# Male Participants	1 357
# Female Participants	641
# Ha	118
Vetiver Grass	
# Villages	32
# Households	224
# Male Participants	169
# Female Participants	56
# Length of Hedgerows (m)	14 970
# Ha under Vetiver	15

NDA - No data available on gender breakdown but entire HH is involved in CA
48.1% of the participants summed across interventions were women

CA is being recommended where *Faidherbia* trees are found or planted. Observations on plots where CA was integrated with mature winter thorn trees show that yields of 8 tons or more are possible from positive effects of this tree on soil fertility and the micro-environment. Farmers who grow crops under *Faidherbia* also benefit from CA because it controls the growth of heavy weeds under the tree, which severely impacts the yield potential of crops.

Another key benefit is that newly planted *Faidherbia* seedlings survive and grow better under CA because most seedlings (typically very small in size) are killed by accidental hand weeding of the crop. Those that survive often succumb to fires set in the dry season to remove weeds and crop residues. CA minimizes the high mortality of seedlings from accidental weeding and burning.

Overall, the results are providing a platform for smallholder farmers to reduce their vulnerability and risk to climate change with more stable crop yields, lower inputs costs, and significant reductions in the loss of top soil and runoff. Substantial savings in labor allow farmers to expand and/or diversify food and cash crops which receive more attention, culminating in better quality, higher yields and increased incomes. The bottom line is that farmer demands for support with CA outweigh project resources. An initiative to address this challenge involves a regional COMESA program coordinated by the Conservation Farming Unit (CFU) in Zambia with funds from the Royal Norwegian Embassy in Lusaka. TLC is responsible for implementing the program in Malawi and funds were received at the end of July 2011.

3.8 Crop Diversification and Irrigation

Rice schemes rehabilitated by TLC, along with low cost irrigation systems with treadle pumps and stream diversion, are excellent examples of positive impacts to improve food security and incomes at the household level (see **Table 7**). Other forms of irrigation (treadle pumps and stream diversion) continue to have a major influence on improving food security and incomes of households which is creating a buffer against the threats and vulnerability of climate change and the high dependency on rain-fed crops.

Results on treadle pump irrigation and stream diversion reflect new farmers and sites for 2010/11. Total numbers were lower than expected. The main reason is that certain NGOs have attracted farmer groups formed and trained by TLC by the lure of free equipment and inputs. One cannot blame farmers for choosing the option of free inputs. However, the programs of these NGOs are short term (some less than 12 months) with no training and extension support to build the capacity of farmers to sustain their irrigation activities. With the departure of these NGO programs, many farmers are returning to TLC for support. Conflicting approaches of this nature are unfortunate but fairly common in many TLC sites.

Table 7: Irrigation, Aug 2010-July 2011

Irrigated Schemes	Results
# Household Participants ¹	778
Area Irrigated (Ha)	116
Production (tons)	212
Treadle Pump Irrigation	
# Clubs/Villages	12
# Household Participants	319
# T Pump Kits Delivered	189
# Male Receiving T Pump Packs	148
# Female Receiving T Pump Packs	41
Area Under Irrigation	93
Stream Diversion	
# Clubs/Villages	32
# Male Receiving Input Packs	268
# Female Receiving Input Packs	145
# Household Participants	337
# Input Packs Delivered to Households	413
Area Under Irrigation	57

¹ No gender breakdown but entire HH is involved in rice schemes
30.8% of the recipients of inputs were women

In terms of diversification, production and sales information are presented by crop in **Table 2** with details in **Table 8**. The growing numbers of farmers demonstrate increased interest from positive impacts of the program. 34.3% of the recipients of inputs were women.

Table 8: Crop Diversification, Aug 2010-July 2011 ¹

Crop Diversification	Results
Rice, Kilombero	
Amt of Seed Reserved or Given (kg) ²	31 265
# Associations	4
# Male Receiving Seed	1 212
# Female Receiving Seed	325
# Household Participants	106
Ha Planted	481
Groundnuts, CG7 / Chalambana 2000	
Amt of Seed Given (kg)	1 965
# Clubs	13
# Male Receiving Seed	76
# Female Receiving Seed	67
# Household Participants	143
Ha Planted	31
Sugar Beans, Kholopete	
Amt of Seed Given (kg)	2 475
# Clubs	16
# Male Receiving Seed	176
# Female Receiving Seed	51
# Household Participants	227
Ha Planted	53
Soya Beans, Mixed	
Amt of Seed Given (kg)	1 130
# Clubs	9
# Male Receiving Seed	35
# Female Receiving Seed	41
# Household Participants	76
Ha Planted	23
Cassava, Manyokola	
# of Bundles Given (50 sticks)	2 497
# Clubs	85
# Male Receiving Stick Bundles	803
# Female Receiving Stick Bundles	608
# Household Participants	1 411
Ha Planted	38
Bird's Eye Chillies and Paprika ³	
# Male Receiving Seed	3 005
# Female Receiving Seed	932
# Household Participants	3 937
Ha Planted	827

* 34.3% of the recipients of inputs were women

¹ No gender breakdown but entire HH is involved in irrigated rice

² Includes rice seed provided this year and seed reserved from previous years

³ Based on combined figures provided by the Spice Project

3.9 Livestock Production

Table 9 shows the numbers of livestock distributed to farmers for the period August 2010 to July 2011. All farmers received training on animal care and production, construction of suitable animal housing, and marketing. 35.4% of the beneficiaries were women. The results to date clearly show that livestock are generating good income for farmers.

Table 9: Livestock Production

Participation, Production & Sales	Goats, Boer Mix	Pigs, Tristars
# Total Recipients	49	24
# Male Animals Given	51	28
# Female Animals Given	73	26
# Offspring Produced	125	36
# Animals Sold	20	21
Income Received (MK)	129 100	142 500
Average Price/Animal (MK)	6 455	6 786
Average Income/Participant (MK)	2 635	5 938
Participation, Production & Sales	Chickens, Black Australops	Guinea Fowls
# Total Recipients	101	15
# Male Animals Given	734	55
# Female Animals Given	1 366	54
# Young Given	2 050	0
# Eggs Produced	24 262	458
# Eggs Sold	16 067	235
Income Received from Eggs (MK)	489 105	7 377
Average Price/Egg (MK)	30	31
# Birds Produced	3 339	4
# Birds Sold	750	4
Income Received for Birds (MK)	642 800	3 200
Average Price/Bird (MK)	857	800
Average Income/Participant (MK)	11 207	705

* 35.4% of the recipients of animals were women

3.10 Enterprise Development and Eco-Tourism

Promoting small-scale enterprises was kept at a low level with selected individuals due to observed challenges with production, business skills and marketing. Enterprises under evaluation included bee keeping, fish farming, eco-tourism, mushroom production, and collection of wild mushrooms. Results on the food dryer were submitted under separate cover last year. Cage culture was abandoned due to poor upkeep of the cages, theft of fish, and general miss-management. Agro-processing of cassava and groundnuts was put on hold based on the outcome of the mid-term evaluation report as well as results with other enterprises.

Ultimately, since a key aim of MACC is to impact as many rural households as possible to improve food security and to reduce poverty and the effects of climate change, the number of households that can be impacted by promoting enterprises is a critical factor affecting the future of this program.

Key aims of the evaluation of enterprises are:

- a) to identify points of intervention where there are clear weaknesses or gaps,
- b) to increase output levels through improved management,
- c) to target farmers based on available resources and capabilities to manage the enterprise as a true business, and
- d) to define the structure of loans secured through the project or micro-finance institution to provide essential equipment and inputs needed for operating the enterprise.

The current status of enterprises in terms of household participation, production and sales is presented in **Table 10**. Overall, income levels were low across enterprises and benefitted a disproportionately low number of households who managed the enterprises very well. This meant that the others received much lower incomes than the average shown in **Table 10**. Men dominated fish farming, bee keeping and eco-tourism while women dominated mushroom activities. Despite considerable resources and effort to improve production, management and marketing, success was limited to very few individuals. Results on eco-tourism were also extremely low, and focused exclusively on 2 centers built in only 2 EPAs. No other activities were developed in terms of building hiking or biking trails, or constructing game hides and boats.

Table 10: Enterprise Development and Eco-Tourism

Participation, Production & Sales	Enterprises and Eco-Tourism					Cultural Centers
	Fish Farming		Bee Keeping	Mushrooms		
	Fish	Fingerlings		Domestic	Wild	
# Clubs	2		8	3	0	4
# Males Supported	23		71	8	9	38
# Females Supported	9		23	30	171	16
# Total Recipients	32		94	38	180	54
Unit of Production	kg	#	kg	kg	kg	# Visitors
Production (kg or #)	385	1 254	716	370	1 920	NA
Sales (kg or #)	354	1 148	533	325	1 440	12
Income from Sales (MK)	131 150	20 000	214 200	285 500	288 000	14 000
Avg Price/Unit	370	17.4	402	880	200	1 167
Avg Income/Participant (MK) ¹	4 098	625	2 279	7 513	1 600	259

¹ Includes all participants whether active producers or not

Men dominated most enterprises (73%) except those involving mushrooms which were controlled by women (92%)

Concluding Remarks:

From the data presented in this report and in previous years, TLC believes that the enterprises and eco-tourism supported by the project have very limited potential for effective adoption among the targeted households in the catchment area of the project. These findings are in line with the findings of the team that conducted a midterm evaluation of the project. Although a few individuals are being successful, TLC recommends ending further support toward promoting these activities in the project area.

3.11 Ecosystem Monitoring/Research & Development

Systems, methodologies and resources to monitor key aspects of the ecosystem are being finalized for quantitative assessments of impacts and change over time. Capabilities needed to institute effective systems of monitoring will be the focus of the next 12 months. This will involve contracts for professional services. With the acquisition of satellite imagery spanning several years from the beginning of the project, TLC will be able to document changes in land cover and their related causes from changes in land use and population pressure.

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