

## **PROJECT PROFILE: MANAGEMENT FOR ADAPTATION TO CLIMATE CHANGE**

### **1. Background of Support from the Norwegian Government**

The concept of the MACC Project is based on a successful results achieved under the Chia Lagoon Watershed Management Project funded by USAID from 2004-2007 and by the Royal Norwegian Embassy in 2008. As the key implementing organization of this project, Total LandCare was approached by the Norwegian Government to scale up the Chia program over a larger geographic area with a focus on adaptation to climate change. This culminated in the design of the MACC Project, which is being funded through the Royal Norwegian Embassy for a period of 5 years from August 2008 to July 2013. Implementation is the responsibility of Total LandCare with the District Assemblies of Salima, Nkhotakota, Ntchisi, Dowa and Nkhata Bay.

### **2. 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.

### **3. Key Objectives**

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

- a) 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.
- b) 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.
- c) Develop opportunities to establish and operate rural-based enterprises with strong links to sound markets to increase opportunities for self-sufficiency and prosperity.

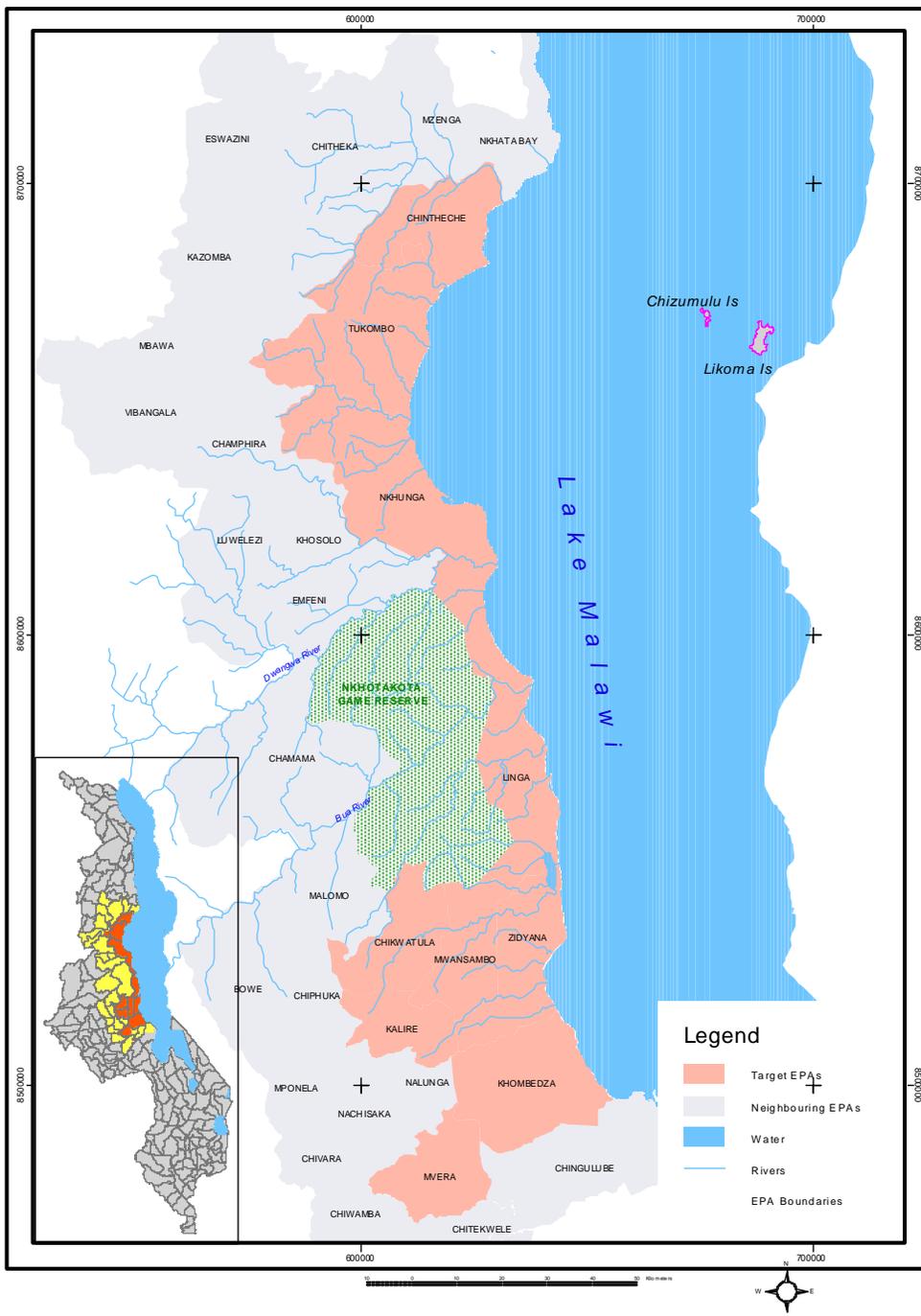
All interventions will be implemented using sound land and water management practices to ensure sustainability. The benefits realized by communities will accrue from the synergistic effects of a holistic approach involving diverse interventions. The results will lead to reduced vulnerability and risks to climate change with impacts that will attract participation among adjacent communities, with good opportunities for buy-in from other donors and organizations to expand the scale of the program to other areas of Malawi.

#### 4. Target Areas

The project covers 11 Extension Planning Areas (EPAs) across five districts with diverse farming systems and agro-ecological zones. The districts and EPAs targeted are shown below and in Map 1.

- 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

**Map 1: Geographic Coverage of MACC showing Districts and EPAs**



## **5. Project Organizational Structure**

TLC has instituted a streamlined management structure to ensure a results-based focus in the field for impact and cost effectiveness. The overall project will be administered and managed across all 5 districts through a field team under the direction of WT Bunderson and ZD Jere (see **Figure 1**). Implementation of project activities will be coordinated through 3 bodies as follows:

1. Project Steering Committee
2. District Management Committee
3. District Field Committee

### **Project Steering Committee (PSC)**

Guidance will be provided from a Project Steering Committee comprising TLC Directors, the District Commissioners of each District, the Director of Environmental Affairs, and the Executive Director of the Agricultural Development Program. Ad hoc members will include project desk officers from the RNE. The PSC will be each semester. Financial and technical support will be provided to each District from specialists at TLC headquarters to assist with field operations, technical issues, training, accounting, reporting, monitoring and evaluation. Field headquarters will be based at the existing project offices in Nkhotakota with field coordinators in each of the 10 EPAs to assure efficient and effective implementation of field activities.

### **District Management Committee (DMC)**

The project will build on the district organizational setup already in place in Nkhotakota District where the field headquarters will be based (see Figure 2). The DMC will comprise management representatives from TLC, the field team and the District to ensure efficient implementation of targeted field programs at the district level. The Project Director, WT Bunderson, will chair the DMC, and ZD Jere will be in charge of Field Programs.

The DMC will meet in each district on a bi-monthly basis under the following agenda:

- Overall coordination of partner activities across their given areas of expertise.
- Carrying out sector-specific activities as agreed upon in the annual workplan.
- Overseeing the execution of the proposed activities in a timely and effective manner.
- Resolving any issues of communication or conflict among the partners.
- Timely and proper disbursement of funds to each partner as per agreed partner budgets.
- Coordinating timely contributions from each partner regarding project financial and technical reports, workplans, budgets, workshops and field days.
- Communication with the Project Steering Committee, the District Implementation Committee, the District Executive Committee, the full District Assembly and the community leaders.
- Initiating and/or maintaining contact with other stakeholders and organizations that could provide potential support to any component of the project.
- Disseminating and sharing experiences, information and results with all partners.
- Making site visits with a theme focus for that month.

### **District Field Committee (DFC)**

As its name implies, the DFC operates at the field level. Its members include the District Environmental Sub-Committee (DESC), the Project Manager, and field coordinators from TLC and the District. The District Environmental Officer will chair the DFC, with the Project Manager as executive secretary. All meetings will be held at specific sites within the watershed to enhance

information and understanding among all parties about the diverse range of interventions and the implementing partners involved.

The DFC will meet on monthly basis to coordinate all project activities at the field level as follows:

- Identifying priority sites, “hotspots” and actions in consultation with the PMC.
- Reviewing previous month’s activities and planning for the following month.
- Conducting joint supervisory visits/spot checks to project sites.
- Verifying the effective implementation of the proposed activities.
- Reporting to the DMC on activities and progress within the project areas.
- Exchange of information with the communities and the community leaders.
- Overseeing information sharing of events and activities between the communities, community leaders, the District authorities and the field staff;
- Clarifying issues and resolving conflicts among the project and district field staff.
- Guiding awareness and sensitization campaigns for communities in the watershed.

Working with this structure, TLC will incorporate a holistic watershed approach to address the diverse nature of the challenges with a range of services to ensure sustainability. The aim is to develop and accelerate opportunities to promote community-based natural resource management (CBNRM), land and water management practices, and market-driven enterprises for agricultural and natural resource products.

## **6. Extension Strategy and Approach**

Broad stakeholder participation and community mobilization are key elements of responsive and effective project implementation by providing opportunities for stakeholders to participate including government, the private sector, communities, and NGOs. The project works closely with all parties through a tested and proven community mobilization process that uses and strengthens existing structures and legal frameworks. This process involves a holistic watershed approach as a means to address the diverse nature of the problems identified, with a range of services to ensure sustainability and continuity. Emphasis is being placed on decentralization and capacity building at the District level, which includes all relevant government departments, the district assembly, NGOs and donor projects working in the district, and communities/special interest groups.

The adoption of a truly integrated approach, which involves collaboration with other institutions, NGOs, private sector firms and donor-funded projects such as NASFAM and COMPASS II, is designed to enhance, expand and maximize targeted results and impacts on rural livelihoods in the Chia Lagoon Watershed.

Key features of the project’s approach to ensure impact and sustainability:

- ➔ Empower people to become self sufficient in managing their natural resources through participation and education using existing structures and legal frameworks. The mode of operation is demand-driven with a focus on transferring knowledge, skills and tools to improve increase food security, nutrition, health and incomes of rural communities.
- ➔ Build on local knowledge to identify points of impact through experience-based interventions to ensure sustainability with reduced dependence on external support.
- ➔ Provide equipment, materials and inputs on a cost-recovery basis under the premise that free handouts are not valued and are not sustainable.

- ➔ Promote the transition from aid-dependent subsistence to market-based livelihoods by building capacity for vertical integration in the market. Livelihoods will be improved by incorporating business and marketing skills to support adoption and sustainability of environmentally sound resource management and production practices.
- ➔ Facilitate positive change in the watershed by leveraging the strengths and capabilities of different partners to transfer skills, knowledge and resources to communities.

Emphasis is being placed on decentralization and capacity building at the District and local levels with a focus on the following activities:

- Provide training in the relevant technical disciplines, business and financial management, and marketing, with linkages to relevant support groups and information centers.
- Provide, produce and upgrade user-friendly extension and training materials as needed on all components of the project based on results and lessons learned. These materials will provide the tools and knowledge for strengthening extension delivery and training.
- Implement an extension strategy to expand outreach efforts by leveraging the limited human, financial and physical resources available:
  - ◇ Focus on Interventions that generate high impacts.
  - ◇ Placement of field coordinators within the watershed to work with District staff and communities to support key components of the project.
  - ◇ Target villages for each coordinator in clustered concentrations to facilitate logistics, training and extension services.
  - ◇ Intensive support will be provided for 1-2 years per village, which will thereafter be scaled down as communities become self-sufficient in maintaining the program.
  - ◇ Enhance impacts from the synergistic effects of involving collaboration of many villages and traditional leaders under a coordinated program with common goals.
  - ◇ Publicize results to attract interest in participation from other service providers as well as neighboring communities.
  - ◇ Provide access to improved seed, inputs, materials and equipment through direct cash payments or signed loan agreements with TLC or finance institutions under the policy to instill a sense of ownership and value for the goods and services offered to ensure sustainability and impact (i.e., no free hand-outs).
- Support marketing initiatives as follows:
  - ◇ Evaluate existing markets and potentials for specific crops and products.
  - ◇ Facilitate linkages between producers, processors, buyers and industrial consumers.
  - ◇ Expand opportunities for value-added activities by developing and disseminating appropriate processing equipment and technologies to meet market standards.
  - ◇ Increase opportunities for potential private sector investors about the profitability and competitiveness to engage in local marketing and processing of diverse products.
  - ◇ Increase market opportunity for high value crops and products through market research and other promotional activities.

- ◇ Organize promotional campaigns using mass-media to popularize new crops and products among household and industrial consumers.

➤ Target measures to address cross-cutting social issues of gender inequality and HIV/AIDS.

## **7. Operational Framework**

A solid foundation has already been established with a broad cross section of Government agencies, District Assemblies, NGOs, and communities in the 5 targeted Districts based on existing field programs in these areas. Notable among these are the Malawi Lake Basin and FAO Projects. These factors, coupled with the close relationships established with the district assemblies and communities in the 5 districts, facilitated swift mobilization of resources to initiate implementation. The scale of the program will be increased in time by forging mutually beneficial collaborative agreements with other organizations in the public, NGO and private sectors. In this regard, USAID, FAO, and Norwegian Government strongly endorse partnerships between their various projects based on clear benefits for synergy and leverage. Shared experiences and lessons will strengthen areas where there are gaps or weaknesses within each organization. Results are expected to attract interest from other service providers and neighboring communities, which will encourage expansion based on demand-driven incentives.

- Verifying the effective implementation of the proposed activities.
- Reporting to the DMC on activities and progress within the project areas.
- Exchange of information with the communities and the community leaders.
- Overseeing information sharing of events and activities between the communities, community leaders, the District authorities and the field staff;
- Clarifying issues and resolving conflicts among the project and district field staff.
- Guiding awareness and sensitization campaigns for communities in the watershed.

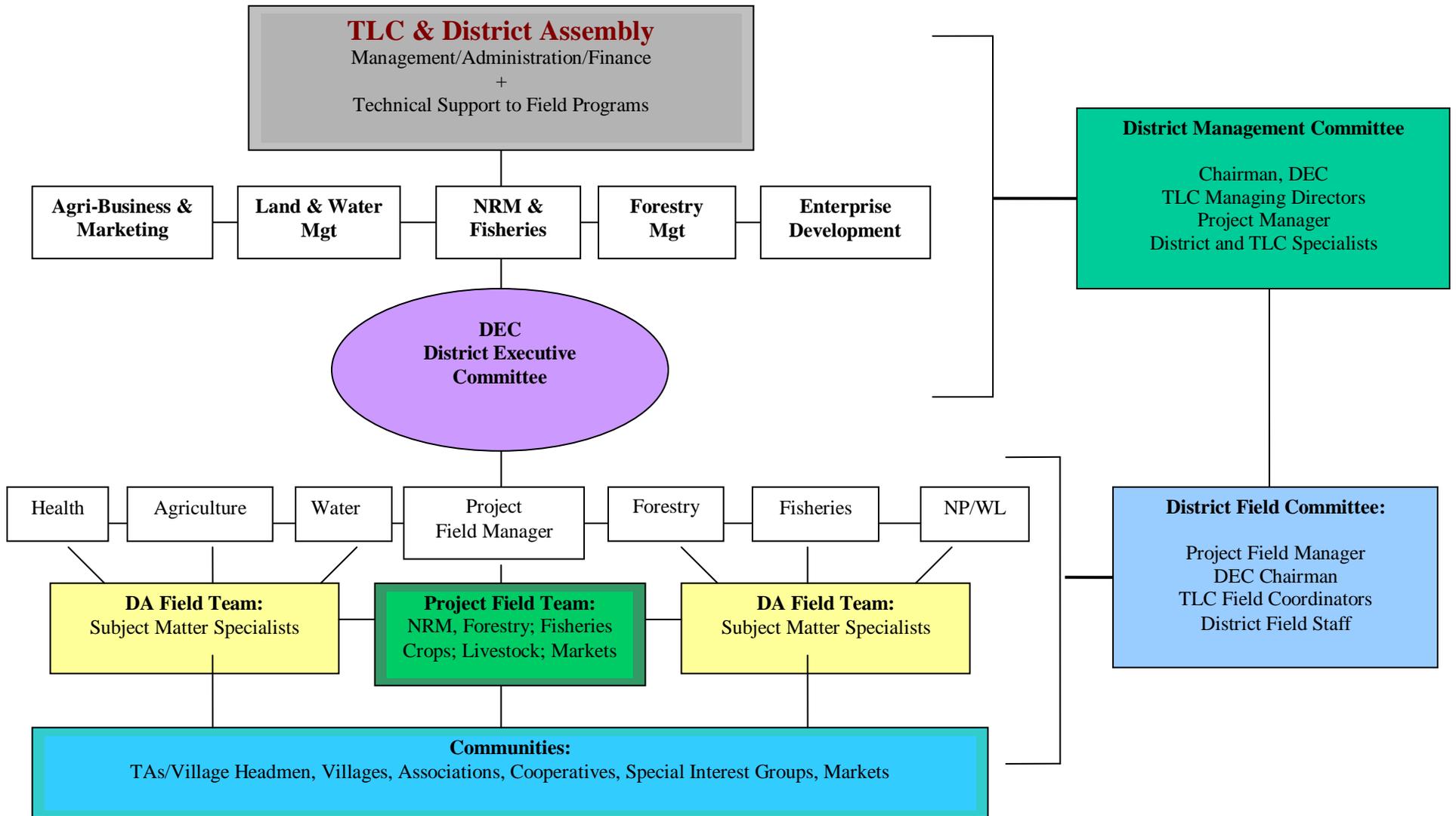
Working with this structure, TLC will incorporate a holistic watershed approach to address the diverse nature of the challenges with a range of services to ensure sustainability. The aim is to develop and accelerate opportunities to promote community-based natural resource management (CBNRM), land and water management practices, and market-driven enterprises for agricultural and natural resource products.

## **8. Project Staffing Structure**

TLC will use its existing infrastructure of specialists to coordinate and support field programs, which will be implemented at the District level by recruiting the following field staff:

- **Project Manager** with responsibility to coordinate, supervise and monitor the day-to-day activities of the project and its staff including management of accounts for expenditures and collaboration with District Assemblies, Government departments and other stakeholders.
- **Administrator/Accountant** with responsibility for a) procurement, b) accounting of expenditures in accordance with approved RNE procedures, c) inter-office communications, d) logistical support for field programs, and e) managing 3<sup>rd</sup> parties and visitors.

**FIGURE 1A: PROJECT ORGANIZATIONAL STRUCTURE AT THE DISTRICT LEVEL**



- **Community-Based Natural Resource Specialist** with responsibility for training and supporting special interest groups/communities in the border zones of protected forest and wildlife reserves in all technical, business and marketing matters related to co-management agreements for the use of forest and wildlife resources, including assistance with the establishment and implementation of community-based constitutions/bye-laws for sustainably using and managing these resources, including eco-tourism.
- **Fishery Resource Specialist** with responsibility for training and supporting fish-farming groups, beach-village committees and fisheries associations in all technical, business and marketing matters related to capture fisheries, cage culture, and fish farming, including establishment and implementation of community-based constitutions and bye-laws for managing various fisheries, e.g., rivers, Chia Lagoon, Lake Chikukutu, and Lake Malawi.
- **Enterprise Development Specialist** with responsibility to train and support special interest groups/communities in all technical, business and marketing matters related to establishing and operating small enterprises, e.g., mushroom production, bee keeping, and fish farming.
- **Agri-Business Specialist** will develop the organizational structure of farmers to command a balanced presence in agri-business and marketing. A key focus will be to evaluate agri-business opportunities and markets for different commodities and enterprises as profitable ventures. This will include assessing local capabilities, improving access to local market information, and promoting active engagement by farmer groups and associations. Priority will include training in business skills to selected and capable special interest groups and support to better organize existing farmer associations/structures. Activities will also target local service providers and agri-business dealers that could support these farmer groups.
- **Monitoring and Evaluation Specialist** with responsibility for quantifying and analyzing data and impacts related to each component of the program, which will include opportunities to address any weaknesses identified and to improve the scale and quality of desired results.
- **10 Field Coordinators** with responsibility for training and extension services with targeted communities, for all activities and interventions related to forestry, rain-fed and irrigated agriculture, land and water management practices.
- **4 Drivers** with responsibility for driving and maintaining project vehicles.

## 9. Field Setup

Field programs will be coordinated by the Field Manager based in Nkhotakota with support from TLC Headquarters. Field staff will be placed in targeted sites to support all interventions with farmers so that activities are conducted correctly and in a timely manner. Programs will be serviced by field coordinators, each responsible for clusters of clubs and households in a contiguous area to facilitate training and extension support under the following guidelines:

- **Land and Water Management:** Field coordinators will be responsible for all training and extension support to farmers, organized in clustered groups, for all activities related to crop diversification, irrigation, agroforestry, conservation practices, and livestock. Support also includes management of loans and transactions for seed, input packs and equipment, plus assistance with markets and buyers of produce. The scale of these operations will depend on demand within the 100-250 villages that fall within the target area of the field coordinator.

- **Forestry:** Each forestry coordinator will support production and planting of 500,000 seedlings raised in 100-250 communal nurseries. The Project will supply nursery tubes, seed, basic tools, training and extension follow-ups. Villagers provide the land, water, soil and labor to raise, manage and plant the seedlings. Village nurseries will range in size from 2,000 to 5,000 seedlings managed by 10-25 households.
- **Enterprise Development:** Field coordinators will be responsible for all training and extension support to farmers, organized in groups, for all activities related to the establishment and operation of smallscale enterprises such as fish farming, cage culture, mushroom production, and bee keeping. As above, support also includes management of loans and transactions for seed, input packs and equipment, as well as assistance with markets and buyers of produce. The scale of these operations will depend on demand within the 100-250 villages that fall within the target area of the field coordinator.

Intensive support is typically provided for 2 years with the aim of developing the capacity of communities to become self-sufficient. Thereafter, support will be scaled down to an advisory level with communities responsible for maintaining and expanding the program.

## **10. Collaboration with Other Stakeholders**

The scale of the program may be expanded by leveraging the resources of selected Government, Project and NGO entities that are interested in collaboration and/or receiving technical/training support from TLC. A key element will involve close collaboration with other RNE Projects, in particular the Malawi Lake Basin Project, the FAO Food Security Project and NASFAM. Experiences and lessons from these projects will be used to strengthen areas where there are opportunities for improvement, or weaknesses.

Results from collaboration are expected to attract interest from other service providers and neighboring communities. Collaborative agreements may then be initiated to support and complement activities by TLC. Liaison with Government Agencies will be conducted on the need to revise / strengthen policies and related enforcement on a) indiscriminant cutting of indigenous trees, and b) land tenure issues that promote shifting cultivation and related impacts on deforestation.

## **11. Beneficiary Selection, Sensitization, Mobilization and Training**

Community sensitization and mobilization is an important step but also a pre-condition in ensuring full participation by the target groups in identifying their needs and owning the activities proposed. The following activities will be implemented to achieve this:

- After helping communities to identify their needs and resource availability through PRAs, TLC will conduct social awareness campaigns through Theatre for Development (TFD) performances, radio messages and meetings in the target sites to publicize the project with its interventions. Field coordinators and village extension agents in liaison with local leaders and District Executive Committee (DEC) staff, will facilitate selection of beneficiaries which will be demand-driven, tailored to suit the needs and capabilities of the different groups.
- Once beneficiaries are selected, they will be grouped either in new clubs or if they are already members of existing clubs, the clubs concerned will be strengthened through training and provision of necessary tools. Farmers will be grouped according to common interests. Groups will include forestry and irrigation clubs, seed multiplication clubs, and specialized clubs for fish farming, mushroom production, bee keeping agro-processing, and organic products.
- Training of locally constituted farmer groups will focus on formulating village/group action plans, group dynamics, leadership styles, formulating bye-laws/constitutions and methods to regulate their implementation and compliance, business and bargaining

skills. In addition, groups will be trained in information sharing and networking. Mass media communications like radio programs, TV coverage, leaflets and t-shirts will be used to disseminate the positive case studies emerging from the project to the wider population beyond the project impact area for learning and sharing purposes.

- After beneficiaries are organized in groups, they will be supported in developing their own plan of action based on their priority needs, resources and requests for project support.
- Training of beneficiaries will be conducted by field coordinators and field specialists. This activity will include demonstrations, hands-on participation and use of project reference materials.

## **12. Village Profiling**

Target beneficiaries were broadly characterized as rural smallholder farmers in the central and northern regions of Malawi. TLC will carry out activities to further characterize beneficiaries and the impact the project is having on them. TLC will GPS all targeted villages and record:

- Location of the village
- Number of households in each village
- Major assets in the community (such as a borehole)
- Activities undertaken by the community (such as crops raised or enterprises engaged)
- External NGO activities in the community

The primary objective of the activity is for selection and monitoring purposes. The activity will assist TLC in identifying villages with little or no NGO activity, thereby ensuring minimal conflict and duplication to achieve stated targets. TLC will maintain up-to-date records updated to provide a clear and visual evaluation of project impacts and needs over time.

## **13. Establishment of Field Offices and Procurement of Equipment**

Field offices and storage facilities will be setup in strategically placed centers with basic support resources for sound administration, management, accounting, communications and reporting. Procurement will include the following:

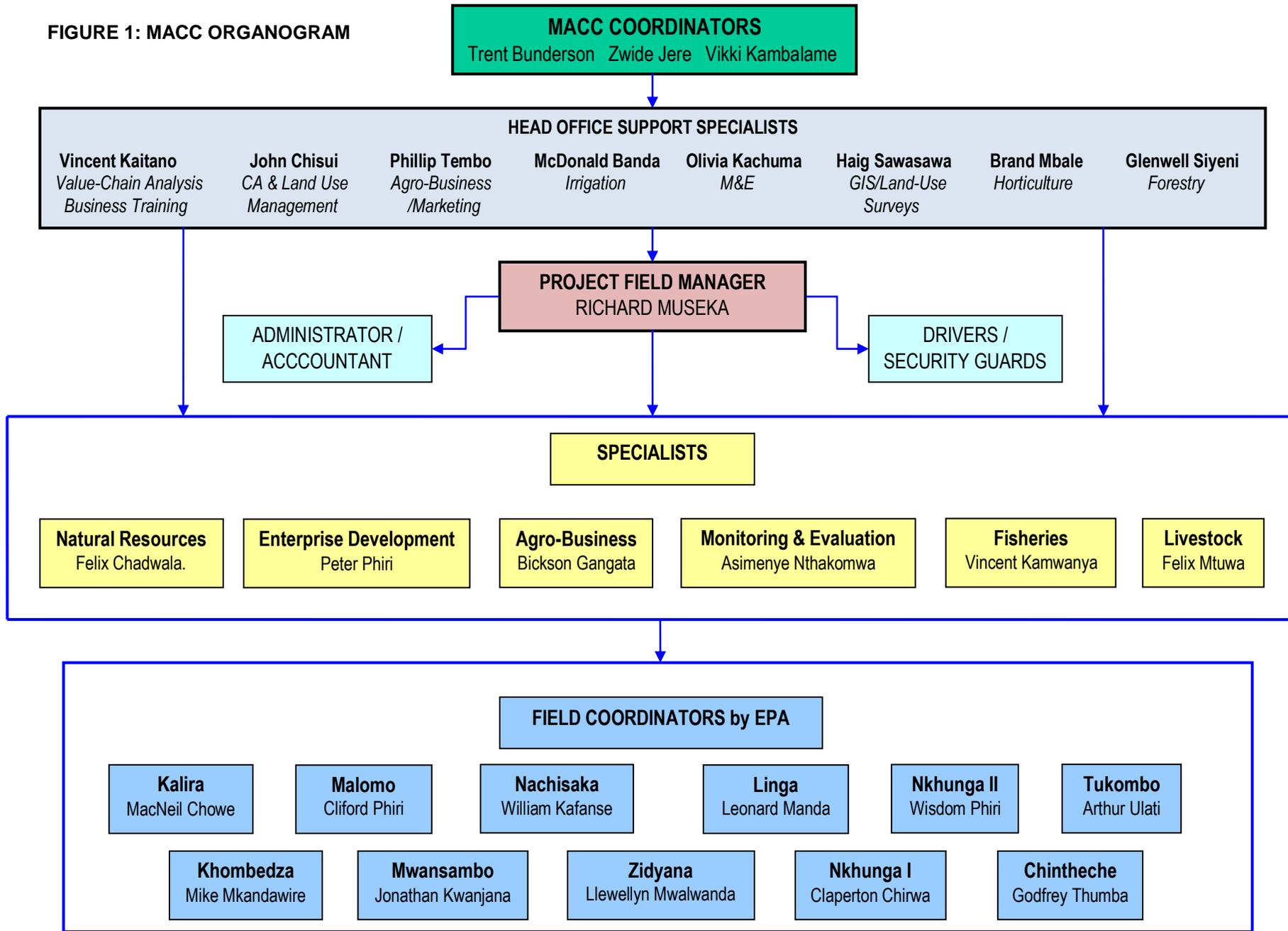
- Four Toyota 4x4's
- One 7-ton truck to assist in the timely procurement and distribution of forestry, agricultural, irrigation, and other equipment and supplies.
- 10 x Yamaha AG 100 cc or DT 125 cc motor cycles for field based staff.
- 40 Mountain bikes for community-extension workers operating under the field coordinators
- 5 Computers/printers and related accessories for the senior officers recruited

## **14. Targeted Interventions with Breakdown of Costs**

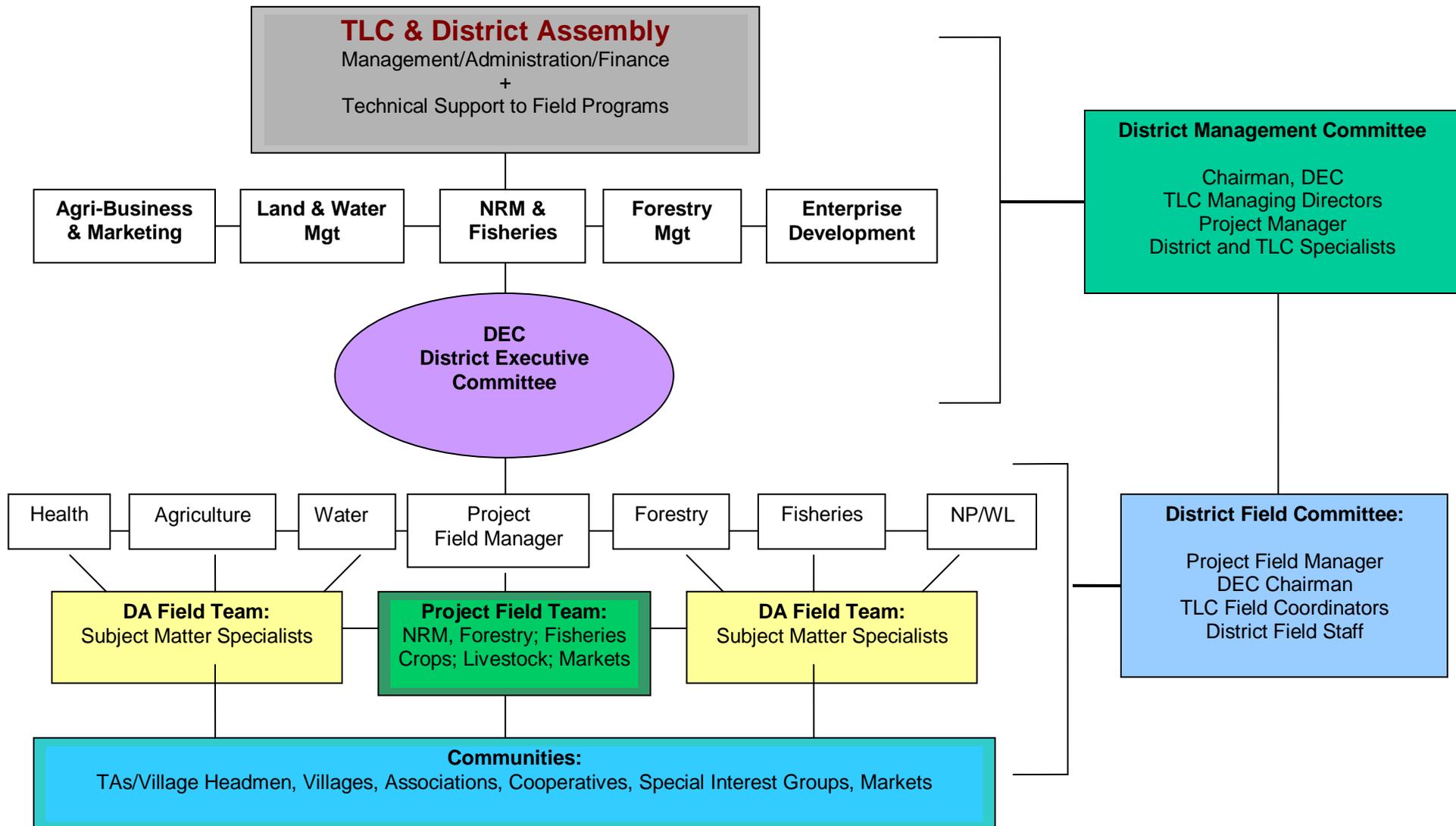
TLC will target five intervention areas outlined in **Table 1** for climate change adaptation to benefit vulnerable rural communities in selected areas of Malawi. A detailed plan of work is shown in **Table 2** with targets by year in **Table 3B**.

A brief description of targeted practices and interventions is provided under **Interventions** in the main menu which includes illustrations in the **photo gallery**.

**FIGURE 1: MACC ORGANOGRAM**



**FIGURE 2: PROJECT ORGANIZATIONAL STRUCTURE AT THE DISTRICT LEVEL**



**Table 1: Proposed Measures of Adaptation for Priority Vulnerable Sectors and Systems in Rural Areas**

Sector/ System	Priority Interventions/Practices for Adaptation	Impacts on Livelihoods and Climate Change	Links to Established Strategies
Land & Water Management (in the context of Agriculture)	<ul style="list-style-type: none"> <li>a) Crop diversification with improved varieties of cassava, beans, groundnuts, rice, root &amp; tuber crops, tree and horticultural crops</li> <li>b) Winter production of maize, beans and high value horticultural crops using low cost irrigation systems</li> <li>c) Value-added agro-processing using simple, low-energy demanding methods/equipment</li> <li>d) Improved farm integration and management of livestock, focusing on small stock (e.g., goats, pigs, rabbits, guinea pigs, poultry, guinea fowl)</li> <li>e) Agroforestry/soil fertility management with a focus on simple, low input practices</li> <li>f) Conservation agriculture/reduced tillage, soil &amp; water conservation measures</li> <li>g) Evaluation of crop/plant/soil sequestration of carbon, water runoff, and loss of topsoil</li> </ul>	<ul style="list-style-type: none"> <li>• Increased / stable crop yields with lower risks in times of drought / floods</li> <li>• Improved food security, nutrition and incomes for self-reliance and growth</li> <li>• Reduced demand on labor, allowing opportunities for diversification</li> <li>• Beneficiaries include vulnerable households that are female headed, elderly or affected by HIV/AIDS and other diseases</li> <li>• Reduced forest / soil degradation and related effects from the siltation and pollution of water bodies</li> <li>• Reduction in emissions of CH<sub>4</sub> and N<sub>2</sub>O due to reduction in nitrogen fertilizer application and improved manure management</li> <li>• Increased storage of soil carbon with documentation</li> </ul>	MGDS; ADP; NAPA; UNFCCC; UNDP; IPCC; World Development Report 2008
Water Use (in the Context of Irrigation)	<ul style="list-style-type: none"> <li>a) Construction of small and medium dams for irrigation and other uses</li> <li>b) Small-scale rainwater harvesting techniques</li> <li>c) Integrated watershed management with soil and water conservation techniques, conservation agriculture and reforestation</li> <li>d) Enforcement of community-based bye-laws on soil conservation, water use and stream bank protection</li> <li>e) Assessment of water quality and sediment loads in key rivers and lakes</li> </ul>	<ul style="list-style-type: none"> <li>• Sustainable increases in crop yields and area under irrigation</li> <li>• Improved water infiltration and retention with increased water uptake by crops/vegetation and reduced risk of erosion and runoff</li> <li>• Groundwater recharge and maintenance</li> <li>• Reduced siltation of lakes and dams, reduced incidence of disease</li> </ul>	MGDS; ADP; NAPA; UNFCCC

Sector/ System	Priority Adaptation Technologies and Practices	Impacts on Livelihoods and Climate Change	Links to Established Strategies
Forestry / Forests	<ul style="list-style-type: none"> <li>a) Reforestation using a wide range of fast growing indigenous and exotic species</li> <li>b) Improved management of natural forests/woodlands through demarcation, regeneration, and better management with communal mechanisms of regulation.</li> <li>c) Use of remote sensing techniques to map and analyze changes in land use/cover</li> <li>d) Evaluation of crop/plant/soil carbon sequestration</li> <li>e) Enforcement of bye-laws established by communities/associations</li> <li>f) Assessment of changes in land-use/cover, biodiversity (quality/quantity)</li> </ul>	<ul style="list-style-type: none"> <li>• Increased biodiversity for resilience to climate change and natural disasters</li> <li>• Improved abundance/access to fuel wood &amp; building materials</li> <li>• Increased income from forest products</li> <li>• Increased carbon sequestration</li> <li>• Reduced forest / soil degradation and related effects from siltation and pollution of water bodies</li> <li>• Better understanding of Eco-System dynamics, interactions and impacts of land use on the environment, which will lead to more effective actions to address problems</li> </ul>	MGDS; NAPA; UNFCCC; UNDP
Energy	<ul style="list-style-type: none"> <li>a) Energy efficient stoves for household use, with potential energy savings of up to 50% with verification surveys</li> <li>b) Improved management of trees and woodlands to improve regeneration and to reduce wasteful and destructive practices</li> <li>c) Substituting the use of wood for many construction uses with sustainable renewable sources, with a focus on bamboo, river reeds, and crop residues such tobacco, maize and rice stalks</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced labor by women/girls for fetching wood and cooking</li> <li>• Beneficiaries include vulnerable households that are female headed, elderly or affected by HIV/AIDS and other diseases</li> <li>• Reduced deforestation from wood savings</li> <li>• Increased carbon sequestration from improved forestry, land &amp; water management practices</li> <li>• Reduced carbon dioxide and other GHG emissions from improved energy efficiency, reduced deforestation, energy substitution</li> </ul>	MGDS; NAPA
Community-based Natural Resource Management (CBNRM) & Natural Resource Products	<ul style="list-style-type: none"> <li>a) Improved CBM of capture fisheries through establishment of breeding sanctuaries, closed seasons, gear restrictions, and management plans linked to community-based bye-laws</li> <li>b) Co-management of border zones of Protected Areas including eco-tourism</li> <li>c) Enforcement of community-based by-laws</li> <li>d) Enterprise Development: Fish farming, bee keeping, mushroom production etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Biodiversity conservation</li> <li>• Improved household nutrition and incomes</li> <li>• Increased capacity for enterprise development in rural areas with a business mindset to promote market driven self-sufficiency</li> <li>• Understanding of symbiotic relationships between humans and nature</li> </ul>	MGDS; NAPA

**Table 2: MACC PROJECT: Activity Plan, Cost Breakdown and Budget for 2008 to 2009**

INTERVENTION / ACTIVITY	ACTIONS	RESPONSIBLE PARTY	PHYSICAL EQUIPMENT/ INPUTS	SCHEDULE												COST BREAKDOWN US\$	BUDGET US\$	
				O	N	D	J	F	M	A	M	J	J	A	S			
<b>1. Forestry &amp; Energy</b>	1.1 Create awareness on issues & actions among local leaders, communities & collaborators	MACC Field Staff	NA														Includes TLC Admin/Mgt/Fin Team, MACC Field Staff, Vehicles & Ops, Offices, Other Equipment and Support	10,968
	1.2 Select villages/community groups who express interest in participation																	7,312
	1.3 Develop village/project action plans with defined roles & responsibilities																	14,623
	1.4 Procure & supply forestry materials/equipment	TLC Project Managers & Stores Officer	Seed, hoes, shovels, water cans, clippers														2 million seedlings @ \$0.20 each; 200 stove molds @ \$10; 500 forest sites @\$40 each	62,000
	1.5 Train groups/clubs in leadership and form committees	MACC Field Staff	NA														Includes TLC Admin/Mgt/Fin Team, MACC Field Staff, Vehicles & Ops, Offices, Other Equipment and Support	7,312
	1.6 Sensitise & train community members on all practices																	25,591
	1.7 Provide training & extension support on:																	80,429
	Nursery Establishment & Management																	
	Tree & Bamboo Outplanting																	
	Construction/use of Improved Stoves																	
Managing Natural Trees & Woodlands																		
Managing all Practices																		
<b>2. Sustainable Water Use for Irrigation</b>	2.1 Assess needs & potentials for water harvesting & small dam construction	MACC Field Staff	NA													Includes TLC Admin/Mgt/Fin Team, MACC Field Staff, Vehicles & Ops, Offices, Other Equipment and Support	2,742	
	2.2 Create awareness on issues & actions among local leaders, communities & collaborators																5,484	
	2.3 Select & train water user groups to spearhead water management & control																2,742	
	2.4 Develop village/project action plans with defined roles & responsibilities																8,226	
	2.5 Provide support to construct stream diversion & water harvesting facilities																13,709	
	2.6 Assist in the construction of small dams & water harvesting facilities																10,968	
	2.7 Procure & supply irrigation equipment and inputs:	TLC Project Managers & Stores Officer, MACC Field Staff																
	Treadle Pumps		Kickstart Pumps & Assessories												700 TPs @ \$105 each	73,500		
	Set of Hoses for T Pumps		Suction & delivery hoses												700 sets of Hoses @ \$40 each	28,000		
	Input Packs for T Pumps		Seed, fertiliser, pesticides												700 input packs @ \$70 each	49,000		
	Irrigation equipment for Stream Diversion		Cement, sand, rocks, PVC pipes, tools												700 Irrigation eqpt @ \$20/HH	14,000		
	Input Packs for Stream Diversion		Seed, fertiliser, pesticides												700 input packs @ \$42 each	29,400		
	Rehabilitation of Large Schemes	TLC/Hired Contractor	Heavy construction equipment & inputs											Rehabilitation costs @ \$50,000 x 1 Scheme	50,000			
2.8 Provide training/extension support to communities /clubs to implement sustainable mgt practices	MACC Field Staff	NA											Includes TLC Admin/Mgt/Fin Team, MACC Field Staff, Vehicles & Ops, Offices, Other Equipment and Support	65,805				

**MACC PROJECT: Activity Plan, Cost Breakdown and Budget for 2008 to 2009**

INTERVENTION / ACTIVITY	ACTIONS	RESPONSIBLE PARTY	PHYSICAL EQUIPMENT/ INPUTS	SCHEDULE												COST BREAKDOWN US\$	BUDGET US\$	
				O	N	D	J	F	M	A	M	J	J	A	S			
5. Agro- & NRM-based Business and Marketing	5.1 Define factors that characterise the full value chain with emphasis on marketing	TLC Management Team	NA														Includes TLC Admin/Mgt/Fin Team, MACC Field Staff, Vehicles & Ops, Offices, Other Equipment and Support	7,312
	5.2 Evaluate strengths & weaknesses at the local, regional & int'l levels																	5,484
	5.3 Identify priority actions to address gaps / weaknesses that will produce the best payoff																	3,656
	5.4 Train farmers in business skills & marketing with power to negotiate prices	MACC Field Staff																7,312
	5.5 Assist clubs/associations with business management & marketing of produce																	18,279
	5.6 Initiate linkages with traders / buyers /transporters to encourage investment																	9,140
	5.7 Facilitate formal linkages / contracts between farmers & above traders/buyers																	3,656
	5.8 Select best-bet players to formalise business agreements for investment:																	5,484
	Transport of produce from central farm depots to local & regional markets			Equipment procured by Chia II														7,312
	Local traders and buyers with storage and/or transport facilities																	2,194
Entrepreneur Agro-processors & related equipment/facilities														1,462				
Markets at local, regional & national levels	NA													1,828				
6. CBNRM & Natural Products	6.1 Assess potential for CBNRM activities & natural resource based enterprises	MACC Field Staff	NA													Includes TLC Admin/Mgt/Fin Team, MACC Field Staff, Vehicles & Ops, Offices, Other Equipment and Support	3,656	
	6.2 Facilitate identification of resources/areas for co-management																7,312	
	6.3 Facilitate exchange visits and dialogue between communities																10,968	
	6.4 Support awareness campaigns and rallies through meetings, TFD, radio & other media to speed up understanding of key issues																12,795	
	6.5 Support policy, bye-law formulation/reform & mgt plans to regulate use & management of natural resources																21,935	
	6.6 Evaluate potential & facilitate transfer of rights / access for NRM from Govt to local communities via co-mgt agreements																16,451	
	6.7 Support the development of promising NRM products as business ventures:																	
	Bee keeping	Bee keeping equipment														100 sets @ \$100/set	10,000	
	Mushroom production	Construction materials & spawn, plastic paper														20 mushroom houses built + spawn @ \$350/house	7,000	
	Fish farming	Ponds/Fingerlings														Fingerlings cost for 30 ponds @ \$128/pond	3,840	
	Capture Fishery Resource Management	Cages														Cost of 30 cages @ \$250 each	7,500	
Eco-tourism	Boats, shovels, hoes, wheel barrows, tools													\$1000/Activity Set x 5: Bird & game viewing, hiking, cultural centers	5,000			

**MACC PROJECT: Activity Plan, Cost Breakdown and Budget for 2008 to 2009**

INTERVENTION / ACTIVITY	ACTIONS	RESPONSIBLE PARTY	PHYSICAL EQUIPMENT/ INPUTS	SCHEDULE												COST BREAKDOWN US\$	BUDGET US\$	
				O	N	D	J	F	M	A	M	J	J	A	S			
<b>7. Research &amp; Monitoring Ecosystem Change</b>	7.1 Evaluate needs & parameters for monitoring	MACC Field Staff														Includes staff, vehicles, other resources, operations etc.	1,462	
	7.2 Establish sites for data collection																731	
	7.3 Procure equipment / materials:	TLC Procurement Team	GIS maps/images; various tools and software for research/data collection/analysis; conducting surveys															
	Land-use/Cover Change																5 Sat images/maps/Software @\$1000 each	5,000
	Carbon Sequestration / Verification																Equipment & software to monitor C	5,000
	Forest Cover/Biodiversity/Fish Catches																Tools to survey biodiversity	5,000
	Water runoff, erosion, water quality																Equipment for monitoring	6,000
	Hydrographic surveys														Equip & cost of conducting survey	20,000		
	7.4 Install monitoring devices in the selected sites across the project area	MACC Field Staff	NA													Includes TLC Admin/Mgt/Fin Team, MACC Field Staff, Vehicles & Ops, Offices, Other Equipment and Support	1,462	
	7.5 Collect data on above NR factors regularly & produce technical reports on results																7,312	
7.6 Analyse satellite data using GIS to provide a time series land use/cover change	TLC GIS Specialist														3,656			
<b>8 M&amp;E, Reports and Meetings</b>	8.1 Conduct natural resource & socio-economic baseline surveys of area	Hired Consultants														\$2000 per EPA x 10 EPAs	20,000	
	8.2 Design internal & Community-Based M&E Systems	TLC M&E Team	NA													Includes TLC Admin/Mgt/Fin Team, MACC Field Staff, Vehicles & Ops, Offices, Other Equipment and Support	1,645	
	8.3 Develop database for data input & analysis																2,194	
	8.4 Conduct M&E training with staff & participating farmer groups / communities																1,097	
	8.5 Conduct M&E surveys with selected farmer clubs / communities																6,581	
	8.6 Analyse results of M&E Surveys																2,194	
	8.7 Document M&E results for incorporation into Reports																1,097	
	8.8 Review efficiency, effectiveness & adequacy of the M&E system			TLC Management Team														658
	8.9 Make modifications to improve M&E System														439			
	8.10 Produce bi-ann tech & fin reports	MACC Project Managers													1,316			
	8.11 Conduct bi-weekly staff meetings														1,535			
	8.12 Produce monthly financial reports	TLC Accounts Office													1,097			
	8.13 Participate in Steering & District Mgt Committees														439			
	8.14 Hold annual review meeting with RNE/Govt/Collaborating Partners	TLC Management Team	Stationery / Lunch / Refreshments													Cost of Meeting @ \$3500	3,500	
	8.15 Contract external audit		Contractor													Cost of External Audit @ \$7000	7,000	
8.15 Develop 2009/10 workplan and budget	NA														TLC Mgt Team	1,645		
<b>TOTAL COST/BUDGET FOR 2008/09 (Note: Uses the depreciated value of all vehicles for 2008/09 i.e., with actual purchase price, total = \$1,598,235)</b>																	<b>1,347,059</b>	

**Table 3B: MACC PROJECT: M & E Framework with Output Indicators for Years 1-5**

PERFORMANCE INDICATOR	MEASUREABLE INDICATORS OF PERFORMANCE	Baseline <sup>1</sup>	Target <sup>2</sup> / Actual <sup>3</sup>	TARGET & ACTUAL VALUES BY YEAR					DATA COLLECTION & REPORTING		
				2008/09	2009/10	2010/11	2011/12	2012/13	Frequency and Reports	Data Collection Method	Collection Responsibility
<b>OVERALL PARTICIPATION</b>	No. of Participating Villages		Target	1,000	1,000	1,000	1,000	1,000	Once/Year	Community-Based M&E with verification sample surveys of associations / clubs	TLC M&E team & MACC Field Officers
			Actual								
	No. of Participating Households		Target	20,000	20,000	20,000	20,000	20,000			
			Actual								
<b>COMMUNITY-BASED NRM &amp; CO-MGT AGREEMENTS ESTABLISHED AND IMPROVED</b>	No. of Participating Villages		Target	1,000	1,000	1,000	1,000	1,000			
			Actual								
	No. of New NRM Associations Formed & Registered		Target	4	4	4	4	4			
			Actual								
	No. of Co-Mgt Agreements Developed with Constitutions & Bye Laws		Target	4	4	4	4	4			
			Actual								
	No. of Village Resource Assessments Conducted		Target	4	4	4	4	4			
			Actual								
	No. of Village Forest Areas Demarcated for Conservation & Mgt		Target	200	200	200	200	200			
			Actual								
No. of Regenerating Natural Trees		Target	250,000	250,000	250,000	250,000	250,000				
		Actual									
Quantities of Harvestable Products <sup>4</sup>		Target	Not set yet; need more data on potential output & markets								
		Actual									
Sales and Income of NR Products <sup>4</sup>		Target	Not set yet; need more data on potential output & markets								
		Actual									
<b>FORESTRY PRACTICES IMPLEMENTED AND ENHANCED</b>	No. of Participating Clubs		Target	1,000	1,000	1,000	1,000	1,000	Once/Year	CBM&E with verification sample surveys of clubs	TLC M&E team & MACC Field Officers
			Actual								
	No. of Participating Households		Target	15,000	15,000	15,000	15,000	15,000			
			Actual								
	No. of Nurseries Established		Target	1,000	1,000	1,000	1,000	1,000			
			Actual								
	No. of Tree Seedlings Raised & Planted		Target	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000			
			Actual								
	No. of Bamboo Seedlings Raised & Planted		Target	50,000	50,000	50,000	50,000	50,000			
			Actual								
No. of Tree Seedlings Surviving		Target	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000				
		Actual									
No. of Bamboo Seedlings Surviving		Target	40,000	40,000	40,000	40,000	40,000				
		Actual									
No. of Improved Stoves Built & in Use		Target	1,000	1,000	1,000	1,000	1,000				
		Actual									
No. of households using improved kitchen stoves		Target	1,000	1,000	1,000	1,000	1,000				
		Actual									

**Table 3B: MACC PROJECT: M & E Framework with Output Indicators for Years 1-5**

<b>IMPROVED SUSTAINABLE LAND &amp; WATER MANAGEMENT PRACTICES ADOPTED</b>	No. of Households Participating in CA	Target	2,500	2,500	2,500	2,500	2,500	Twice/Year (Rainfed & Irrigated Crops)	Sample Household Surveys	TLC M&E team & MACC Field Officers
		Actual								
	Area under CA (ha)	Target	750	750	750	750	750			
		Actual								
	Yields of Maize under CA	Target	3,500	3,500	3,500	3,500	3,500			
		Actual								
	No. of Households Planting Improved Fruit Trees	Target	750	750	750	750	750			
Actual										
No. of Households adopting S&WC Measures	Target	1,000	1,000	1,000	1,000	1,000				
	Actual									
No. of Households intercropping with Tephrosia/Pigeon Peas & Faidherbia	Target	500	500	500	500	500	Once/Year			
	Actual									
<b>CROP DIVERSIFICATION</b>	Area under Kilombero Rice (ha)	Target	250	250	250	250	250	Once/Year	Community-Based M&E with verification sample surveys of clubs	TLC M&E team & MACC Field Officers
		Actual								
	Yield of Kilombero Rice (tons)	Target	625	625	625	625	625			
		Actual								
	Area under Kalima & Sugar Beans (ha)	Target	125	125	125	125	125			
		Actual								
	Yield of Kalima & Sugar Beans (tons)	Target	150	150	150	150	150			
		Actual								
	Area under Groundnuts, Soya Beans, Pigeon Peas (ha)	Target	200	200	200	200	200			
		Actual								
	Yield of Groundnuts, Soya Beans, Pigeon Peas (9tons)	Target	300	300	300	300	300			
		Actual								
	Area under Paprika / Bird's Eye Chillies (ha)	Target	40	40	40	40	40			
		Actual								
	Yield of Paprika / Bird's Eye Chillies (tons)	Target	30	30	30	30	30			
		Actual								
	Area under sweet Cassava (ha)	Target	250	250	250	250	250			
		Actual								
	Yield of Cassava (tons)	Target	5,000	5,000	5,000	5,000	5,000			
		Actual								
Area under Irrigated Vegetables, Spices & Green Maize (ha)	Target	225	225	225	225	225				
	Actual									
Yield of Irrigated Vegetables, Spices & Green Maize (tons)	Target	450	450	450	450	450				
	Actual									

**Table 3B: MACC PROJECT: M & E Framework with Output Indicators for Years 1-5**

ENTERPRISES PROMOTED											
<b>Bee Keeping</b>	No. of Clubs Participating in Bee Keeping	Target	50	50	50	50	50				
		Actual									
	No. of Households Participating in Bee Keeping	Target	500	500	500	500	500				
		Actual									
	Quantities of Honey Harvested (kg)	Target	5,000	5,000	5,000	5,000	5,000				
		Actual									
Honey Sales and Income (MK)	Target	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000					
	Actual										
<b>Cage Culture &amp; Fish Farming</b>	No. of Cages Built and in Use for Fish Cage Culture	Target	30	30	30	30	30				
		Actual									
	Quantities of fish harvested (kg)	Target	7,500	7,500	7,500	7,500	7,500				
		Actual									
	Fish Sales and Income (MK)	Target	825,000	825,000	825,000	825,000	825,000				
		Actual									
	No. of Ponds Built and Stocked for Fish Farming	Target	30	30	30	30	30				
		Actual									
	Quantities of fish harvested (kg)	Target	7,500	7,500	7,500	7,500	7,500				
		Actual									
	Fish Sales and Income (MK)	Target	825,000	825,000	825,000	825,000	825,000				
		Actual									
No. of Households keeping improved Livestock	Target	200	200	200	200	200					
	Actual										
No. of improved livestock distributed to households by species	Target	2,000	2,000	2,000	2,000	2,000					
	Actual										
Animal Sales and Income (MK)	Target	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000					
	Actual										
<b>Mushroom Production</b>	No. of Households participating in Mushroom production	Target	40	40	40	40	40				
		Actual									
	No. of Mushroom Houses Built	Target	20	20	20	20	20				
		Actual									
	Quantities of Mushroom Harvested (kg)	Target	3,000	3,000	3,000	3,000	3,000				
		Actual									
	Mushroom Sales and Income (MK)	Target	1,080,000	1,080,000	1,080,000	1,080,000	1,080,000				
		Actual									

Seasonal depending on enterprise production cycle

Sample Household / Club Surveys

TLC M&E team & MACC Field Officers

**Table 3B: MACC PROJECT: M & E Framework with Output Indicators for Years 1-5**

<b>Agro-Processing</b> <sup>5</sup>	No. of Entrepreneurs Selected to Undertake Agro-processing	Target	3	3	2	2	0	Seasonal depending on enterprise production cycle	Surveys / interviews with each entrepreneur	TLC M&E team & MACC Field Officers
		Actual								
	No. of Cassava Graters Distributed on Loan	Target	2	1	1	1	0			
		Actual								
	No. of Cassava Chippers Distributed on Loan	Target	2	1	1	1	0			
		Actual								
	No. of Grain Mills Distributed on Loan	Target	1	1	0	0	0			
		Actual								
	No. of Seed Oil Presses Distributed on Loan	Target	1	1	0	0	0			
		Actual								
No. of Groundnut Shellers Distributed on Loan	Target	4	4	4	4	4				
	Actual									
No. of Solar Driers Distributed on Loan	Target	2	1	1	1	0				
	Actual									
Sales & Income from Each Type of Processing (MK)	Target	Not set yet; need more data on potential output & markets								
	Actual									
<b>Eco-Tourism</b> <sup>6</sup>	No. of Participating Villages in Eco-Tourism	Target	3	3	3	3	3	Once/Year	CBM&E with verification sample surveys of households	TLC M&E team & MACC Field Officers
		Actual								
	No. of Households	Target	100	100	100	100	100			
		Actual								
	No. of Tour Managers Trained	Target	4	2	2	2	2			
		Actual								
	No. of Tour Guides Trained	Target	6	4	2	2	2			
		Actual								
	No. of Cultural Centres built	Target	1	1	1	0	0			
		Actual								
	No. of Hiking Trails Constructed	Target	4	2	1	1	1			
		Actual								
	No. of Mtn Bike Tracks Constructed	Target	3	3	3	3	3			
		Actual								
	No. of Boats Constructed	Target	1	1	1	0	0			
		Actual								
No. of Hides Constructed	Target	2	1	1	1	1				
	Actual									
No. of 4x4 Tracks Built for Access	Target	1	1	1	1	1				
	Actual									
No. of Visitors	Target	Not set yet; need more data on potential output & markets								
	Actual									
Income Generated per Club	Target	Not set yet; need more data on potential output & markets								
	Actual									
<b>PROGRAM IMPACTS MONITORED</b>	Average Income per year	Target	25%	25%	25%	25%	25%	Benchline in Year 1	Sample household surveys	TLC M&E team & MACC Field Officers
		Actual								
	% of Households Food Secure Year-round	Target	20% / year	20% / year	20% / year	20% / year	20% / year			
		Actual								
	% Households Wood Secure <sup>7</sup>	Target	None in Yrs 1-3 <sup>7</sup>			25%	25%			
		Actual								
	Natural Resource Monitoring <sup>8</sup>	Target								
		Actual								
							Change from benchmarks will			

**NOTES**

1. Baseline surveys will be conducted in Nov/Dec 2008 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. Actual figures will be specified in semi-annual and annual reports - January and June of each year.
4. Figures depend on resource assessment and management plan to identify specific products, sustainable harvest levels, prices and markets.
5. Targets on outputs and sales not yet established due to need for more information on potential productivity, harvest levels, prices and markets
6. Targets on outputs and sales not yet established due to need for more information on the nature and potential of tourist market and prices
7. There is a lag time of at least 3 years before planted trees are large to harvest wood
8. Cannot be predicted, but change from benchmark indicators will be monitored over the project's life time