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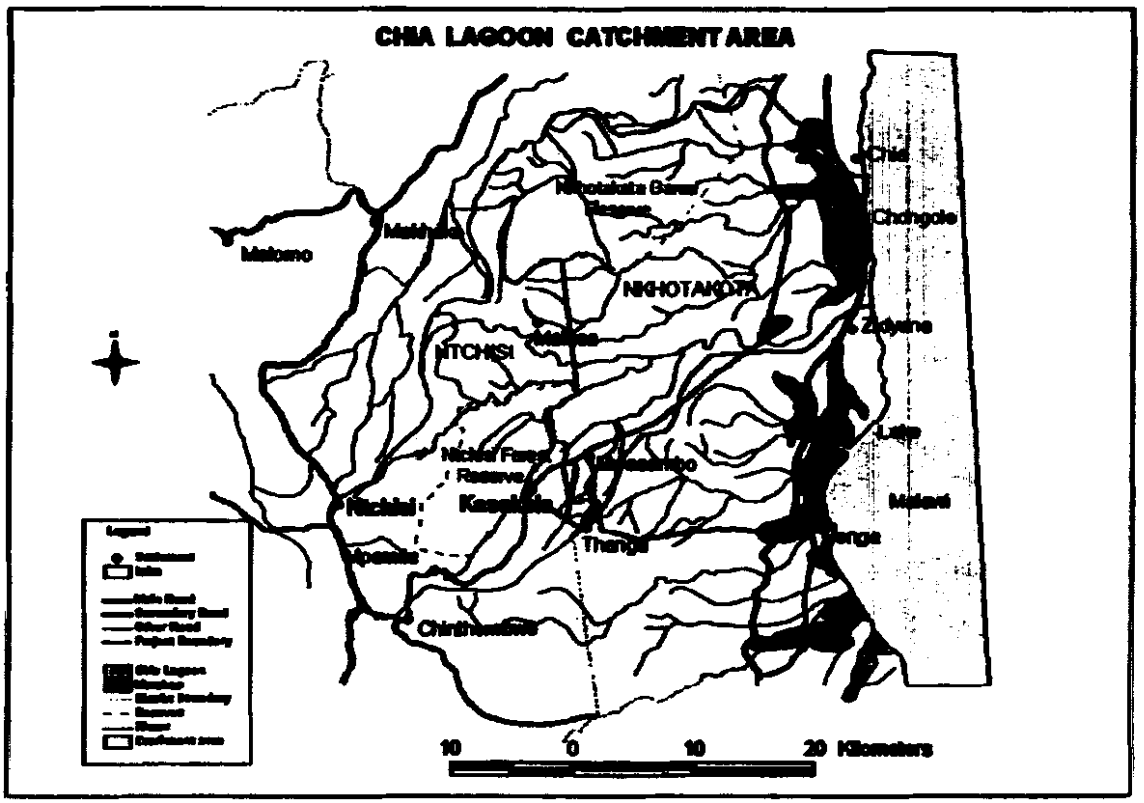
COMMUNITY BASED MANAGEMENT OF CHIA LAGOON WATERSHED:

MONITORING AND EVALUATION PLAN FOR 2004/07



Prepared by a Partner Alliance of

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Rural Communities of the Chia Lagoon Watershed,
Total Landcare (TLC), Business Council Africa (BCA),
Cooperation for the Development of Emerging Countries (COSPE),
Wildlife and Environmental Society of Malawi (WESM) and
Agricouse Malawi Limited

LILONGWE, MALAWI

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COMMUNITY BASED MANAGEMENT OF CHIA LAGOON WATERSHED:

MONITORING AND EVALUATION PLAN

BACKGROUND

This project is being implemented under a partnership alliance with the Nkhotakota District Assembly (KKDA), local communities, several NGOs and a private firm. Funds totaling $4.7 million have been secured with assistance from USAID under the Global Development Alliance initiative for a 3 year period from October 2004 to September 2007.

The partner alliance involves Washington State University (WSU) as the lead institution with the Nkhotakota District Assembly (KKDA) as the focal point for coordinating field programs with other alliance partners. These include Total LandCare (TLC), Cooperation for the Development of Emerging Countries (COSPE), Business Consult Africa (BCA), AgriCane Malawi, and the Wildlife and Environmental Society of Malawi (WESM) Dwangwa Branch. The alliance team reflects a diverse blend of experiences and skills to develop opportunities for accelerating decentralization, community-based natural resource management (CBNRM), and market-driven enterprises for agricultural and natural resource products. The adoption of a truly integrated approach, which involves collaboration with other institutions, NGOs, private sector businesses 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.

Chia Lagoon Watershed covers a total area of 989 km^2, of which 611 km^2 forms the project area. It falls between latitudes 13°0' and 13°30'S, and longitudes 33°50' and 42°20'E, encompassing parts of Nkhotakota and Ntchisi Districts in Central Malawi. The watershed is endowed with vast natural resources vital to the livelihoods of its 55,000 human inhabitants. Over the past 20 years, the watershed has experienced escalating rates of environmental degradation due mainly to the following factors: deforestation; soil erosion; siltation in rivers and lakes; harmful bush fires; declining fish populations in the lakes, rivers and lagoons from over fishing; poaching and encroachment in Dwambazi Forest and Nkhotakota Game Reserves. Priority concerns identified by the local inhabitants to address the above inter-related problems include:

- Reduced fish resources in the lagoon resulting from little control of fishing by communities, invasion of water hyacinth and decline in water quality and quantity;
- Declining crop yields from over-cultivation, poor farming practices and loss of top soil from surface run-off and erosion;
- Decreasing quality and abundance of surface and ground water from soil and forest degradation; one impact has been increased outbreaks of water borne diseases from use of unsafe water;
- Increasing shortages of wood for fuel and construction due to degradation in the cover and composition of natural vegetation from uncontrolled tree cutting, bush fires and opening of land for agricultural purposes;
- Rising scarcity of certain indigenous plant and animal species, including premium hardwoods, fruit trees, medicinal plants and animals.
- Escalating health risks from the increasing incidence of malaria, HIV/AIDS, respiratory ailments, schistosomiasis, trachoma, trypanosomiasis, cholera and dysentery.

PROJECT GOAL AND OBJECTIVES

The goal of the project is to improve the livelihoods of rural communities within the Chia Lagoon Watershed through an integrated community-based approach that involves sustained economic use of the watershed's natural resources of land, water, flora and fauna. This goal is consistent with the economic growth results framework of the USAID's Malawi Mission under *Strategic Objective No. 6*: Sustainable Increases in Rural Incomes.

The goal of the project will be achieved through the following objectives:

1. **Decentralization:** Assistance will be provided to the district decentralization process through support services and resources in policy, technical and business/marketing skills, extension and training materials, environmental monitoring, and overall human development with a focus on organization, leadership, and communications.

2. **Improved Community-Based Natural Resource Management:** The key focus here to empower communities to sustainably use and manage forests, soils, water, fisheries, and wildlife within the catchment through the transfer of knowledge, skills and resources.

3. **Sustainable Agricultural Practices:** Improved agronomic and land-use practices will be promoted through crop diversification, rotations, intercropping, agroforestry, conservation farming, use of organic manure, increased tree planting and various soil conservation methods.

4. **Enterprise Development** will involve the identification and development of enterprises that provide rural people with practical and profitable opportunities to produce agricultural and natural resource-based products in response to demand-driven markets. This will include the ability to add value through basic processing and packaging of products involving the organization of special interest groups/economic units for increased efficiency and competitiveness. It will also leverage opportunities to become more vertically integrated into the market chain through linkages with other producer groups and private sector firms including small medium entrepreneurs (SMEs) engaged in marketing and processing.

5. **Improved Health Services** will be strengthened to reduce the incidence and debilitating effects of malaria, HIV/AIDS, respiratory ailments, schistosomiasis, trachoma, trypanosomiasis, dysentery and cholera through basic preventive and treatment measures. Funding for the health component has yet to be realized, but strong efforts will be made to seek donors and collaboration with other organizations in the sector since the integration of health services is vital to alleviate the incapacitating effects of diseases on household productivity, education, family support systems and social values.

6. **Monitoring and Evaluating Impacts and Ecosystem Change:** Increased capacity will be developed to monitor and evaluate impacts of targeted interventions on communities within the watershed, including the ecosystem dynamics of its natural resources in relation to changes in land and water use.

MONITORING AND EVALUATION PLAN

Financial Reports

WSU will prepare and submit an original and two copies of the financial reports on a *quarterly* basis in keeping with the USAID format (22 CFR 226.52). Accordingly, the SF 269 and SF 272 forms will be submitted in the following manner:

a) The SF 272 and 272a (if necessary) will be submitted electronically to the U.S. Department of Health and Human Services (http://www.dpm.psc.gov) within 45 calendar days following the end of each quarter. A copy of this form shall also be submitted at the same time to the Cognizant Technical Officer (CTO).

b) The SF 269 or 269a (as appropriate) must be submitted to the Cognizant Technical Officer with one copy to Controller at USAID/Malawi.

c) Financial reports will include expenditures of USAID funds, as well as non-federal cost-sharing funds and any other contributions not less than the amount obligated in the project budget.

d) An estimate of quarterly expenditures will be submitted to the USAID Mission CTO 15 days prior to the end of the quarter in question to allow timely appraisals by said CTO of financial issues that need attention.

Semi-Annual Program Performance Reports

WSU will prepare and submit three copies of program performance reports on a *semi-annual* basis to the CTO not later than 30 days after the end of each 6 month period. These reports will include the information described in 22 CFR 226.51(d), to wit:

a) A comparison of actual accomplishments with the goals and objectives for the period, the findings of the investigator, or both. Whenever the outputs can be readily quantified, such quantitative data should be related to cost data for computation of unit costs;

b) Reasons why established goals were not met, or exceeded expectations, if appropriate;

c) Other pertinent information including, when appropriate, analysis and explanation of cost overruns or high unit costs.

Baseline Information and Project Results

The monitoring and evaluation (M&E) plan presented here is linked to the project's technical reports and management information system (MIS). It includes input, output, and impact monitoring based on the development and execution of studies, surveys and questionnaires at specified periods with project partners and collaborators. The MIS system forms an integral part of the project implementation designed to ensure performance and timely detection and correction of implementation weaknesses and inefficiencies.

Strategic elements of the M&E system include:

- Key indicators for each component of the project, disaggregated by gender where possible, to match targeted outputs.
- Input indicators including trainings, provision of extension and other project materials, village/community exchange visits, meetings with communities and their leaders, demonstrations, field days, workshops, etc as specified in the plan of activities.
- Output indicators that include the effectiveness of the project activities such as trainings, demonstrations, exchange visits, study tours and workshops in achieving the objectives of the project.

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- Natural resource indicators to monitor the abundance and quality of water, vegetation, fisheries and wildlife in relation to land use practices over the entire watershed.

The following M&E activities / instruments will be implemented by the project with assistance from public and private sector service providers where needed:

- **Direct Beneficiary Database:** This will form the basis for sample surveys and random site visits, the database for which will be kept up to date.

- **Annual Surveys:** An annual estimate of quantitative performance indicators will be conducted on a sample basis.

- **Assessment of Sector Interventions:** The project will regularly collect data on sector interventions/practices to be promoted in the target sites to evaluate adoption, effectiveness of services, sustainability and preference by farmers.

- **Market Surveys / Market Information:** The project will regularly collect basic market information including prices and quantities and quality of high value products sold. MoAIFS Planning Division and IDEAA will provide assistance in this area.

- **Business Development Service (BDS) Provider Surveys:** The project will conduct an annual sample survey of BDS service providers including input suppliers to assess technology packages and BDS services available, including quality of services offered and utilized by local communities.

- **Small Medium Entrepreneurs:** The project will conduct an annual sample survey of SMEs operating in the project area to evaluate the volume of business by product, market linkages, incomes and business viability.

- **GoM / Partner Programs:** Project staff will work with GoM and NGO partners to utilize their M&E systems to include indirect beneficiaries in the targeted project sites.

- **Secondary Information:** Where available, secondary data collected by GoM agencies (such as import and export figures) and other programs will be utilized to supplement and cross check the project M&E data.

- **Management Information System (MIS):** The project will have a quarterly technical internal MIS reporting, which will include input monitoring to ensure that needed activities are completed timely in relation to the workplan. Selected activities will also be monitored for output evaluation (for example number of staff and farmers trained and feedback on impact of training and training materials).

- **Monitoring Ecosystem Dynamics in relation to changes in land-use:** A Geographical Information System (GIS) will be used to:
  - Produce base maps of the area covering agricultural potential, present land use/cover, vegetation, agro-climatic, infrastructure, hydrology, contours/slopes.
  - Identify "hot spots" within the watershed such as stream banks, degraded land, intensive agriculture and areas of high erosion potential that may be prioritized for intervention.
  - Monitor changes in land use/cover and population growth using time series analysis of satellite images to assess impacts, with attribute data linked to spatial data.
  - Monitor lagoon characteristics of water quality, depth, and surface area, including those of its major drainage systems.
- **Documentation of Lessons Learnt:** Since the project will be a learning program for Malawi, documentation of lessons learnt will be an integral part of the M&E system. This will be done on a quarterly basis to ensure that lessons learnt can loop into the project cycle and be used to improve program implementation.

The M&E data to be collected are organized into the following Tables:

Table 1 shows the benchmark information to collect on the natural and human resource base.

Table 2 shows basic profile information to collect on each village in the catchment.

Table 3 shows collaborative activities with the partner alliance, USAID and other potential collaborators.

Table 4 shows the project result areas and indicators that will be monitored in relation to benchmarks and targets. Results will be collected bi-annually using village and household surveys.

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TABLE 1: GHIA LAGOON WATERSHED MANAGEMENT PROJECT: BASELINE INFORMATION ON NATURAL AND HUMAN RESOURCES

Resource Base	Resource Type	Indicator	Means of Verification	Frequency	Responsibility	Source of Information
Base Map	Topological Map	Map (contours, roads, bridges ,rivers, lakes, health centres, schools, villages, boreholes, shallow wells etc	Scanning Maps	Once	TLC/Agl&w/Project	Dept of Surveys
	Land Use/ Land Cover	Land Use/ Land Cover Map	Image analysis using GIS Software, ground truthing	Start & End of Project		Project
Natural Resources	Water					
	Lagoon	Water level- Depth of the lagoon	Hydrographic Survey	Annual	Water Dept	Project
		Water analysis - Carbonates, nitrates, potassium, faecal coliform, ph value, silt-load, etc.	Water samples and lab tests	Monthly		
	Rivers	Number of rivers in the catchment area	Mapping - GIS	Monthly	Agl&w/TLC	Project Survey
		Water level- Depth of the river	Water level gauges 3 per river- upper,mid and downstream	Monthly	Project/Water Dept	Project Survey
		Water analysis - Carbonates, nitrates, potassium, faecal coliform, ph value, silt-load, etc.	Water samples and lab tests	Quarterly	Project/Water Dept	Project Survey
	Rainfall	Monthly average rainfall	Rain gauges in strategic points	Monthly	Project/ADD	Project/ KKDA Met.
	Boreholes/ Shallow Wells	No.of boreholes and shallow wells in catchment	Mapping - Location, type, usage	Once	Project/Water Dept	Project Survey/Water Dept
		Water level- Depth of the boreholes/shallow wells	Water level gauges	Once	Project/Water Dept	
		Water analysis - Carbonates, nitrates, potassium, faecal coliform, ph value, silt-load, etc.	Water samples and lab tests	Once	Project/Water Dept	Project
	Dams	No. of dams in catchment	Mapping - Location, capacity/ command area, potential use	Annual	Agl&w/Project/ADD	Project/KKDA
		Water level- Depth of the dam	Measuring rods	Annual	Agl&w/Project/ADD	Land Resource Conservation Dept
		Water analysis - Carbonates, nitrates, potassium, faecal coliform, ph value, silt-load, etc.	Water samples and lab tests		Project/Water Dept	Project Survey/Water Dept
	Soils	Soil Type - Texture, chemical, physical, potential landuse	Scanned Maps	Once	TLC/Agl&w/Project	Project GIS
		Stone Map	Digitise-1:50,000 maps			
		Erosion Risk Map	Soil type, Landcover, Slope			LRCD/ Project
	Fisheries	No., location and size of fishponds	Sample Surveys	Annual	Project/Fisheries	KKDA & Fisheries
		Weight/numbers by species				
		Fish catch sizes per month & per annum for major species in rivers and the lagoon.		Monthly		Project & KKDA
		Protected areas by season and location		Monthly		Project & KKDA
	Wild Life	Numbers by species (and distribution if possible)	Sample Survey	Start & End of Project	Project/DWNP/TLC/ WESM	JICA Study & KKDA
Human Resource Base	Population Structure under each TA/GVH	Total Population	National Census	Once	Project	Existing KKDA HEALTH DEPT
		No. and location of villages - ALL	Actual listing plus GPS			Project GPS LOCATION
		No. of H/holds - INTERVENTIONS ONLY				Project
		H/hold comp. & size (M/F&No.) - INTERVENTIONS ONLY				
	Organizational Structure	Type of structures(Agric/SME/CBNRM)	Actual listing plus GPS	Annual	Project	Existing Organizations, KKDA, GVH
		No. of H/holds per group				
		Extension Support (from Govt, NGOs, project) No. of Ext. officers against total pop., villages		Bi-Annual		Project
	Economic Activities	Primary economic activity (fishing, farming, etc)	Sample Surveys	Annual	Project	Project
		Production level (maize, cassava)				
		No. of communities/ H/Hs practicing CBNRM				
		No. and type of markets available locally/regionally	Market Surveys			
		Average Commodity prices				
		Number of jobs existing in enterprises				
		Total revenue for H/Hs in CBNRM activities				

TABLE 2: CHIA LAGOO WATERSHED PROJECT: VILLAGE PROFILE SHEET

NAME OF VILLAGE:		GROUP VILLAGE HEAD:			TA:	
EPA:		DATA RECORDER:			DATE OF INFORMATION:	
Community Facts	No.	Infrastructure	No.	Distance (km)	Checklist of NGOs/Projects	Check
Village Population		Schools			Care Int'l	
Male		Post Office			CILIC	
Female		Govt Department Offices			COMPASS II	
Children under 15		Clinics			Concern Universal	
# of HH		Maize Mills			Concern Worldwide	
# of Female Headed HH		Mosques/Chruches			CPAR	
# of Child Headed HH		Churches			CSC	
# Children attending school		Access Roads into Village			NASFAM	
# of Orphans		Tarmac Road			NASO	
# of HH with Chronically ill		Markets			NICE	
Other (specify)		Shops (specify type)			Red Cross	
		General			SARNETT	
		Clothing/Shoes			Save the Children	
Community Based Structures:	No.	Ag Inputs			UNICEF	
Committees (specify)		Bottle stores/bars			WESM	
		Other (specify)			World Vision Int'l	
					Other (specify)	
		Water and Sanitation	No.	Distance (km)	Farming	# HH
		Shallow wells with Hand Pumps			Main Food Crops (specify)	
		Bore Holes				
		Tapped Water Points				
		Standard Pit Latrines				
		Ecological Sanitation Latrines			Main Cash Crops (specify)	
Constitutions (specify)	No.	Natural Resources	No.	Ha/Distance		
		Village Forest Areas				
		Forest / Wildlife Reserves			Irrigation (specify system)	
		Lagoon				
		Lake Malawi				
		Dams/Ponds			Fishing (specify type/water body)	# HH
		Rivers				
		Wildlife				
By-Laws (specify subject matter)	No.	Soil Types (specify main ones)	Check	Ha	Livestock Raised (main types)	# HH
		Dambo clays				
		Heavy clays				
		Loamy clay			Natural Res. Products (major types)	# HH
		Sandy Loams/Sandy Clays				
		Shallow stoney soils				
		Other (specify)				

TABLE 3: CHIA WATERSHED MANAGEMENT PROJECT: COLLABORATIION WITH PARTNERS AND OTHER ORGANIZATIONS

Partner Alliance	# of Meetings	Highlights of Content and Subject Matter of Meetings/Collaboration (combined across meetings)	Participation			
			Depts Present	Names of Partners Present	# District Officers	# Extension Staff
Project Management Committee (PMC)						
Stakeholders						
Monthly						
Project Implementation Committee (PIC)						
District Environmental Sub-Committee (DESC)						
Full District Assembly						
Project Approval						
Project Launch						
USAID						

TABLE 3: CHIA WATERSHED MANAGEMENT PROJECT: COLLABORATIION WITH PARTNERS AND OTHER ORGANIZATIONS

Collaborating Organizations	# of Meetings	Highlights of Content and Subject Matter of Meetings/Collaboration (combined across meetings)	Participation	
			Persons Attending	Agreements Reached on Nature of Collaboration
SARNET/IITA				
CHEETAH				
NASFAM				
Relay Consultants & Associates				
Save the Children				
Compass II				
Other				

TABLE 4: PROJECT RESULT AREAS AND INDICATORS

RESULT AREA	Indicator Description	# Seedlings or Plants Raised / Outplanted	Ha Covered (as applicable)	Participation			
				# Clubs Formed/ Strengthened	# H/Hs	# Men	# Women
Improved Conservation & Management of Chia Land/Forest Resources	Tree Nurseries						
	Tree Seedlings Raised						
	Trees Outplanted by type:						
	Homestead/woodlot/boundary						
	Communal woodlots/graveyard enrichment						
	Roadside Planting						
	Streambank Protection						
	Bamboo Planting of Seedlings/Rhizomes						
	Village forest areas demarcated and authority granted						
	Other (specify)						
	Agroforestry for Soil Improvement						
	Interplanting F Albida and Acacia species						
	Interplanting Tephrosia						
	Improved Tephrosia Fallows						
	Other (specify)						
	Improved Wood Stoves Constructed & In Use						
	Vetiver Nurseries						
	Vetiver Hedgerows						
	Gullies Under Reclamation						
	Footpaths/Boundaries Raised						
	Contour, Box, Tied Ridging						
	Conservation Farming/Tillage						
	Compost & animal manure						
	Other (specify)						

RESULT AREA	Indicator Description	No.	Ha Covered (as applicable)	Participation			
				# Clubs Formed/ Strengthened	# H/Hs	# Men	# Women
Improved management of Chia Lagoon resources	Lagoon channels restored/cleared for:						
	Access to bird/game watching for Eco-tourism						
	Access vy villagers						
	Other (specify)						
	Sancturies designated & protected for fish breeding						
	Regulations implemented on proper fishing gear						
	Closed seasons on fishing implemented						
	Beetle tanks for water hyacinth control installed						
	Biological control of water hyacinth with beetles						
	Physical removal of water hyacinth						
	Other (specify)						
Co-management Agreements Signed	Specify access to resources/products: e.g., beehives, thatching grass, dead wood, bamboo, caterpillars, mushrooms, fishing, etc						
	Licensing and training of community tour guides						
	Community operated tourist facilities/camp grounds/trails/fishing						
	Other (specify)						

TABLE 4: PROJECT RESULT AREAS AND INDICATORS

RESULT AREA	Subject Matter	Extension Approach Used	# Meetings /Trainings	Participation			
				# Leaders	# HHs	# Men	# Women
Community Sensitization							
Meetings with Villages /Communities							
Tours Conducted with Communities							
Training Communities							

Decentralization & devolution of KKDA	Indicator Description	No.	Ha Covered (as applicable)	Participation			
				# Clubs Formed/ Strengthened	# HHs	# Men	# Women
Improved CBNRM Structure & Organization	Community participation in sector interventions						
	Village Natural Resource Management Committee						
	Policy/By-law formulated & Implemented:						
	Closed seasons/sanctuaries/fish gear						
	Use/mgnt of village forest areas						
	Streambank protection						
	Other (specify)						
	Access to micro-financing/revolving funds						
	Associations Existing or Formed						
	Exchange visits conducted						
	Inter-community debate/dialogue						
Improved CBNRM Planning	Community action plans developed						
	Environmental action plan developed						
	Hotspots located for action						
	Community profiles completed						
	State of environment report documented						
	Micro-projects developed & implemented						
	Other (specify)						

Training of Staff	Subject Matter	No. of Trainings	# EPAs	Type & # of	Type & # of Project Staff

TABLE 4: PROJECT RESULT AREAS AND INDICATORS

Crop Diversification (Specify Crop & Variety) *	Source and Type of Planting Material	No. or Amt of Material Planted	Ha Planted (as applicable)	Participation			
				# Clubs Formed/ Strengthened	# HHs	# Men	# Women
Rice							
Bananas							
Cassava - sweet							
Cassava - bitter							
Sweet Potatoes							
Beans							
Soya Beans							
Groundnuts							
Sugar Cane							
Pigeon Peas							
Other:							
Multiplication of Improved Material *							
Rice							
Bananas							
Cassava - sweet							
Cassava - bitter							
Sweet Potatoes							
Beans							
Soya Beans							
Groundnuts							
Sugar Cane							
Pigeon Peas							
Other:							

TABLE 4: PROJECT RESULT AREAS AND INDICATORS

Winter Irrigation	Description of System	No. Pumps/Packs as applicable	Ha Planted (as applicable)	Participation			
				# Clubs Formed/ Strengthened	# HHs	# Men	# Women
Treadle Pumps & Input Packs							
Stream Diversion							
Water and Sanitation	Shallow wells with Hand Pumps						
	Bore Holes						
	Tapped Water Points						
	Standard Pit Latrines						
	Ecological Sanitation Latrines						
Enterprise Development *	**Description of Enterprise and Type of Product**	**Sales/HH (specify units per product)**	**Average Income/HH**	**Participation**			
				# Clubs Formed/ Strengthened	# HHs	# Men	# Women
Agro-Based Rainfed Crops	Cassava - bitter						
	Cassava - sweet						
	Bananas & other fruit trees						
	Sugar cane						
	Cotton						
	Rice						
	Groundnuts						
	Soya Beans						
	Beans						
	Bird's Eye Chillies						
	Other:						

TABLE 4: PROJECT RESULT AREAS AND INDICATORS

Enterprise Development *	Description of Enterprise and Type of Product	Sales/HH (specify units per product)	Average Income/HH	Participation			
				# Clubs Formed/ Strengthened	# HHs	# Men	# Women
Agro-Based Irrigated Crops	Peppers						
	Maize						
	Tomatoes						
	Beans						
	Onions						
	Sugar Cane						
	Leaf Vegetables						
	Other (specify):						
Natural Resource Based Products	Bee keeping/honey production						
	Mushroom Production						
	Production of Bamboo Products						
	Fish Sales:						
	Fingerlings from ponds						
	Fish from ponds						
	Fresh fish from lagoon						
	Smoked fish from lagoon						
	Rearing Wildlife						
	Cane Rats						
	Guinea Fowl						
	Other (specify)						
	Collection/Sale of Forest Products						
	Wild Mushrooms						
	Dead Wood						
	Thatching Grass						
	Bamboo Poles						
	Caterpillars						
	Wild Fruits						
	Medicinals						
	Other (specify)						
Eco-Tourism	Guiding fees						
	Activity Fees						
	Hiking						
	Fishing						
	Camping						
	Bird Watching						
	Boating						
	Game Viewing						

CHIA LAGOON WATERSHED MANAGEMENT PROJECT

1st SEMI-ANNUAL REPORT
OCTOBER 2004 TO MARCH 2005

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April 30, 2005

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INTRODUCTION

Background and Problem Analysis

This proposal was developed as a joint response to a request from the Nkhotakota District Assembly to address a broad range of inter-related problems affecting the livelihoods of communities in the Chia Lagoon Watershed. The project is being implemented under USAID's Global Development Alliance initiative approved on October 1 2004. It involves a partnership alliance with the Nkhotakota District Assembly (KKDA), local communities, five NGOs and a private firm.

Total funding involves US$ 2.07 million from USAID and $ 2.7 million from the partner alliance covering a 3 year period from October 1 2004 to September 30 2007.

Priority concerns of the local inhabitants include:

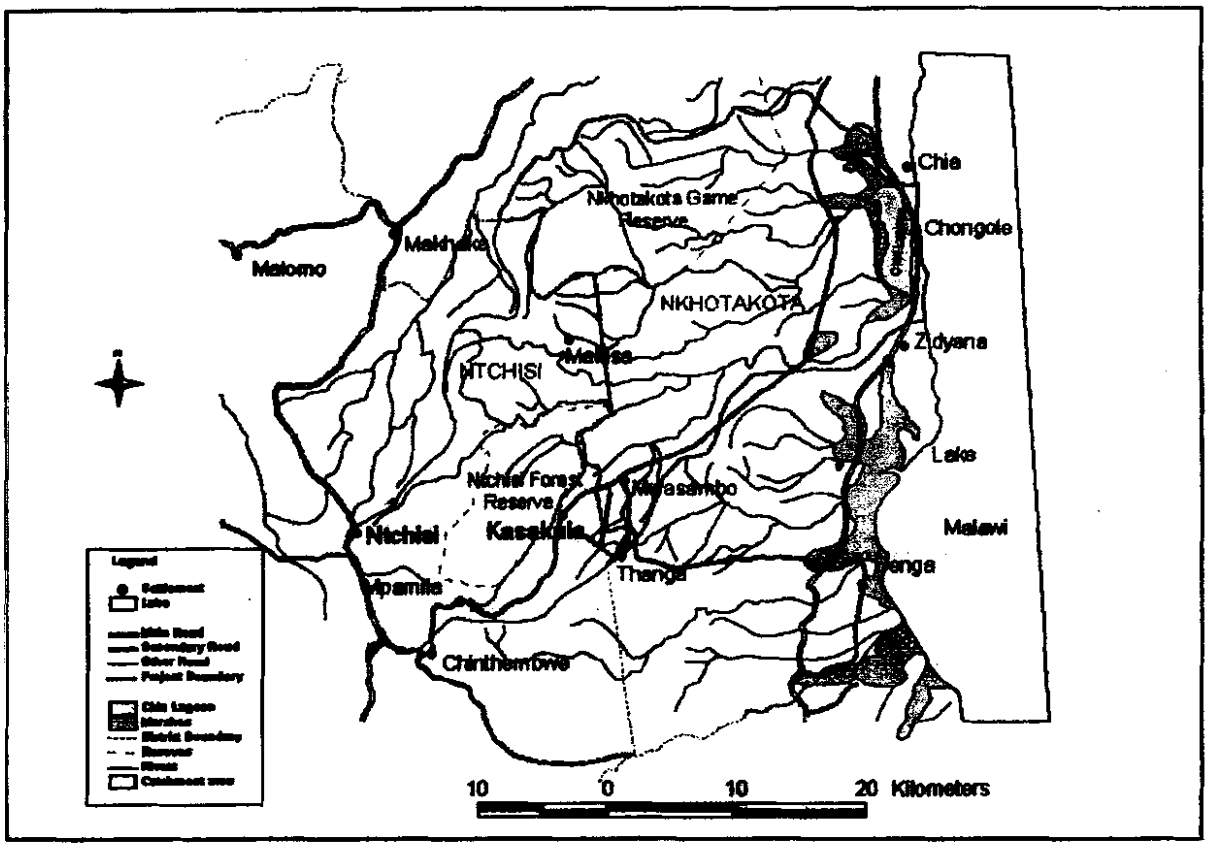
- Degradation of natural resources from poor land-use practices which have led to:
  - declining agricultural productivity and food insecurity
  - decreasing incomes to meet basic household needs
  - acute shortages of wood for energy and building needs
  - sedimentation of the lagoon with dropping fish catches
  - declining biodiversity of the lagoon's aquatic and terrestrial resources
  - increasing dependence on external assistance in times of drought
- Escalating health risks from the increasing incidence of disease due to malaria, HIV/AIDS, respiratory ailments, schistosomiasis (bilharzia), trachoma, trypanosomiasis (sleeping sickness), dysentery and cholera. These diseases have incapacitating effects on rural productivity, education, family support systems and social values.

Description of the Watershed and Target Communities

Chia Lagoon Watershed covers a total area of 989 km2, of which 611 km2 forms the project area. It falls between latitudes 13°0' and 13°30'S, and longitudes 33°50' and 42°20'E, in parts of Nkhotakota and Nchisi Districts in Central Malawi (see Figure 1). The watershed encompasses Nchisi Forest Reserve in the southwest, and part of Nkhotakota Game Reserve to the northwest. The drainage of the area is dominated by the Lifuliza, Lilioe and Bambera river systems, which originate in the Nchisi hills through deeply incised gorges and valleys before entering the lowland plains and the lagoon.

The watershed has vast natural resources, which are vital to the livelihoods of its 55,000 human inhabitants. The uplands are characterized by *Brachystegia-Julbernardia* savanna and woodland interspersed with intensive cultivation of maize, groundnuts, cassava and tobacco. The lowland plains support *Acacia-Bauhinia* woodland with paddy rice, cassava and maize as dominant crops. The Chia Lagoon, which has an outlet into Lake Malawi to the east, is an important fishery resource for communities living around its borders with a body surface area of 17 km^2. The lagoon's fringes are heavily colonized by marsh reeds (*Phragmites* spp.) and shrubs (e.g., *Aeschynomene*, *Mimosa* and *Sesbania* spp.) that thrive under waterlogged conditions.

Figure 1: Catchment Area of Chia Lagoon Watershed



Participatory rural appraisals of the area have identified major problems of natural resource degradation in the Chia Lagoon watershed from poor land-use practices for the past 20 years. The main causal factors include opening new land for agriculture, cultivation on steep slopes and stream banks, poor farming practices, uncontrolled cutting of trees for wood, and setting bush fires which destroy or degrade valuable vegetative cover. The results have led to sedimentation of the lagoon, negatively affecting its rich biodiversity and the livelihoods of its local communities. A contributing factor is due to the varied claims over the use of the watershed's natural resources, a problem which has degenerated into conflicts among different user groups. The situation is exacerbated by short-term interests of survival, social prestige, and material gain among the communities involved.

Impacts on the watershed's natural resources include:

1. **Soil degradation:** There is evidence of severe soil degradation in terms of physical, chemical and biological properties due to over-cultivation and loss of topsoil from surface run-off and erosion. The result is a major constraint in maintaining the area's agricultural productivity.

2. **Degradation of natural vegetation:** Loss of vegetation cover in the watershed (due to reasons specified above) has led to a steady decline in wood supplies on customary land. To help compensate for the deficit, communities are encroaching into the forest and game reserves, a situation which is only aggravating degradation of the watershed with rising conflicts between different user groups.

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3. **Reduced abundance and diversity of fish resources in the Lagoon:** There has been a drastic reduction in fish stocks in the lagoon. The Fisheries Department (1999) reported a decline in catches from over 500 tons between 1992 and 1995 to less than 300 tons in recent years. This has been accompanied by changes in the species composition of fish. Several factors have contributed to this problem. The most notable are as follows:

   - *Little or no control of fishing by the communities:* Includes use of inappropriate fishing gear and poisonous plants to kill fish, depletion of breeding stocks, non-observance of closed seasons, and concentration of fishers in the lagoon when fishing in the lake is hampered by bad weather.

   - *Invasion of water hyacinth:* This not only impedes navigation of fishing vessels but it also affects light conditions for aquatic animal and plant life in the lagoon.

   - *Decline in water quality and quantity* due to siltation and chemical pollution from poor or inappropriate cultivation practices upstream (see details below).

4. **Declining water quality and quantity in the Lagoon:** Although no hydrographical surveys and water quality assessments have been conducted, it is apparent that the water quality and quantity of the lagoon have been severely degraded. There is high siltation as evidenced by the sediment loads in the lagoon and its rivers, and shallow water depths at the mouths of rivers as well as the lagoon fringes. Invasion of the water hyacinth in the lagoon, and undesirable shrub species on its fringes, are results of adverse changes in the ecosystem caused largely by improper land-use practices in the upland areas of the catchment.

5. **Declining human health:** The health condition of people in the watershed is declining from a combination of social and environmental factors. Major problems include cholera and diarrhoea/dysentery due to poor standards of hygiene and sanitation in villages and households, and the use of contaminated water. Lack of adequate health care has led to increases in other common diseases, notably malaria, bilharzia (schistosomiasis), HIV/AIDS, sleeping sickness (trypanosomiasis), trachoma, skin infections and respiratory ailments. These diseases have a greater impact on expectant mothers and children under the age of 5. Much could be done to reduce the incidence of these diseases through simple preventive and treatment measures involving focused efforts on community education and upgrading the standards of support to established health facilities.

Project Goal and Objectives

Given the importance of the Chia Lagoon Watershed and the communities within the area, the District Assembly of Nkhotakota took the initiative to address the problems, culminating in this proposal. However, because the project area is limited to the Nkhotakota part of the catchment, a broader effort is needed to incorporate the Nkhata District Assembly and its communities to achieve the scale of impacts expected from a fully integrated catchment approach.

The inter-relationships among the problems outlined above are clear. They demonstrate the urgent need for an integrated approach to produce more effective and lasting results as opposed to mechanistic or sectoral approaches that treat the problems in isolation. Planned studies of the socio-agro-ecosystem will provide a better understanding of the interactions among the different problems and how to address them in a more holistic manner.

The overall goal of the project is to improve the livelihoods of rural communities within the Chia Lagoon Watershed through an integrated community-based approach that involves sustained economic use of the watershed's natural resources of land, water, flora and fauna. This goal is consistent with the economic growth results framework of the USAID's Malawi Mission under *Strategic Objective No. 6: Sustainable Increases in Rural Incomes.*

The goal of the project will be achieved through the following objectives:

1. **Decentralization:** Assistance will be provided to support and strengthen the district decentralization process through services and resources in policy, technical training, business/marketing skills, extension and training materials, environmental monitoring, and overall human development with a focus on organization, leadership, and communications.

2. **Improved Community-Based Natural Resource Management:** The key focus is to empower communities to sustainably use and manage forests, soils, water, fisheries, and wildlife within the catchment through the transfer of knowledge, skills and resources.

3. **Sustainable Agricultural Practices:** Improved agronomic and land-use practices will be promoted through crop diversification, rotations, intercropping, agroforestry, conservation farming, use of organic manure, increased tree planting and various soil conservation methods.

4. **Enterprise Development** will involve the identification and development of enterprises that provide rural people with practical and profitable opportunities to produce agricultural and natural resource-based products in response to demand-driven markets. This will include the ability to add value through basic processing and packaging of products involving the organization of special interest groups/economic units for increased efficiency and competitiveness. It will also leverage opportunities to become more vertically integrated into the market chain through linkages with other producer groups and private sector firms including small medium entrepreneurs (SMEs) engaged in marketing and processing.

5. **Improved Health Services** will be strengthened to reduce the incidence and debilitating effects of malaria, HIV/AIDS, respiratory ailments, schistosomiasis, trachoma, trypanosomiasis, dysentery and cholera through basic preventive and treatment measures. Funding for the health component has yet to be realized, but strong efforts are being made to seek donors and collaboration with other organizations in the sector. This is a critical component of the project since the integration of health services is vital to alleviate the incapacitating effects of diseases on household productivity, education, family support systems and social values.

6. **Monitoring and Evaluating Impacts and Ecosystem Change:** Increased capacity will be developed to monitor and evaluate impacts of targeted interventions on communities within the watershed, including the ecosystem dynamics of its natural resources in relation to changes in land and water use.

IMPLEMENTATION

Partnership Alliance

The implementation of the project is being organized through partner alliance of Washington State University (WSU) as the lead institution with the Nkhotakota District Assembly (KKDA) as the focal point for coordinating field programs with other alliance partners. These include Total LandCare (TLC), Cooperation for the Development of Emerging Countries (COSPE), Business Consult Africa (BCA), AgriCane Malawi, and the Wildlife and Environmental Society of Malawi (WESM) Dwangwa Branch. The alliance team reflects a diverse blend of experiences and skills to develop opportunities for accelerating decentralization, community-based natural resource management (CBNRM), sustainable agricultural practices and market-driven enterprises for agricultural and natural resource products. The areas of specialty for each partner are highlighted in the box below.

The Alliance Team

Washington State University: Project Direction & Oversight, Financial Management, Market Surveys, Feasibility Assessments of Enterprises, CBNRM, Ecosystem Studies, M&E

Total LandCare Malawi: Agroforestry, Soil Conservation, Irrigation and Water Harvesting, Training and Extension Services

Cooperation for the Development of Emerging Countries: Community Mobilization and Empowerment, Agro-processing, Formation & Management of Cooperatives/Associations

Nkhotakota District Assembly: Community Mobilization, Information and Extension Services, Field Implementation

Business Consult Africa and AgriCane Malawi: Business Management and Training, Feasibility and Market Assessments, Product Development, Agro-processing, Private Sector Linkages

Wildlife & Environmental Society of Malawi: Wildlife & Environmental Conservation and Education; Community Environmental Action Plans, Eco-Tourism

AgriCane Malawi: Assessments of landuse & cover, irrigation potential, alternative crops, introduction of value-added processing, GIS mapping

Extension Strategy and Approach

Broad stakeholder participation and community mobilization are key elements of responsive and effective project implementation. This provides opportunities for all stakeholders to participate including government, the private sector, communities, and NGOs. The alliance is working 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.

Services provided by the project include:

1. Training in the relevant technical disciplines, business and financial management, and marketing, with linkages to relevant support groups and information centers.
2. Production/upgrading of user-friendly extension and training materials as needed on all components/sectors of the program based on results and lessons learned. These materials will provide the tools and knowledge for strengthening extension delivery and training.
3. Implementation of an extension strategy to expand outreach efforts by leveraging the limited human, financial and physical resources available:
   - ◊ Each site within the watershed will be serviced by one field technician initially covering 30 villages. Over time, this number will triple as villages become more self-sufficient in managing the interventions.
   - ◊ Targeted villages in each site will be organized in a clustered concentration 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 and expanding the program.
   - ◊ The program will be expanded geographically by leveraging the resources of selected NGO and other partners who are interested in participating in the targeted activities, and/or in receiving technical/training support from the alliance.
   - ◊ Impacts will be greater and more visible due to the synergistic effects of involving the collaboration of many villages and traditional leaders under a coordinated program of implementing partners with a common goal.
   - ◊ Results produced will attract interest in participation from other service providers as well as neighboring communities.
4. Market assessments to provide information with a realistic understanding of:
   - ◊ Markets and their dynamics;
   - ◊ Inter-relationships of different market players;
   - ◊ Market opportunities for communities and the constraints that hinder the realization of those opportunities;
   - ◊ Private sector providers of business and information services;
   - ◊ Appropriate and effective market-led strategies;
   - ◊ Interventions that generate high impacts.

Monitoring and Evaluation

A project monitoring and evaluation (M&E) plan has been developed and revised in response to comments and suggestions from the Malawi USAID mission. It includes input, output, and impact monitoring based on the development and execution of studies, surveys and questionnaires at specified periods with project partners and collaborators. The plan forms an integral part of the project implementation designed to ensure performance and timely detection and correction of implementation weaknesses and inefficiencies.

Strategic elements of the M&E Plan include:

- Baseline information on the human and natural resource base.
- A computerized profile of each village in the catchment to characterize major human, socio-economic and bio-physical features entered into a database.
- Key indicators for each result area of the project, disaggregated by gender where possible, to match targeted outputs.
- Input indicators including trainings, provision of extension and other project materials, village/community exchange visits, meetings with communities and their leaders, demonstrations, field days, workshops, etc as specified in the plan of activities.
- Output indicators that include the effectiveness of the project activities in achieving the objectives of the project.
- Natural resource indicators to monitor the abundance and quality of water, vegetation, fisheries and wildlife in relation to land use practices over the entire watershed.

For further details, please refer to the revised M&E Plan submitted to USAID in April.

PROJECT RESULTS TO DATE

Overview of Progress

The Chia Watershed Project was approved by USAID on October 1 2004 through a grant arrangement with Washington State University. The timing had a major influence on the nature and scale of certain field components of the project as it coincided with the start of the rainy season. It specifically affected efforts to establish tree and vetiver grass nurseries, bamboo propagation, agroforestry, soil conservation and the diversification and multiplication of rainfed crops.

The initial thrust of the project focused on establishing an efficient structure for coordinating and managing the project. Key actions are highlighted below:

- Defining the project setup, organization and responsibilities of the partner alliance, including their inter-relationships.
- Establishing bank accounts for the project and for each partner.
- Holding meetings with a) the Nkhotakota District Assembly, and b) key stakeholders to discuss and explain the project for its acceptance and approval.
- Organizing a formal project launching ceremony hosted by the Vice President of Malawi, Dr. Cassim Chilumpha at Chia Lagoon
- Holding partner meetings at Nkhotakota District to discuss and define:
    - the project setup and partner roles
    - inter-partner communications
    - disbursement of funds, equipment and other resources
    - financial and technical management and reporting requirements
    - priorities and responsibilities for field activities
    - linkages between the partner alliance
    - collaboration with other parties / organizations in the area
    - evaluation of field activities in progress

- Procuring and insuring office and field equipment:
  - computers, software, printers, copier, fax, furniture
  - GIS equipment, scanner, GPS's, software
  - 4x4 vehicles
  - Off road motorcycles
- Recruiting and relocating new project staff, with allowances for the normal 1-3 month period of notice for terminating current positions.
- Setting up offices at the KKDA premises to provide effective management and communication support with government and project field staff, as well as other collaborating organizations.
- Developing workplans and budgets for each partner.
- Disbursing funds and equipment to partners according to agreed plans and budgets.
- Mobilizing communities through awareness and sensitization meetings and exchange visits involving traditional authorities and villagers.
- Initiating collection of baseline information on the human, socio-economic and natural resource base within the catchment area:
  - People, villages and socio-economic activities
  - Water
  - Fisheries
  - Forestry
  - Soils
  - Wildlife
- Implementing field programs involving:
  - Strengthening community structures and interest groups
  - Forming and strengthening clubs for bee keeping, mushroom production, and harvesting various plant products
  - Actions to protect streambanks
  - Planting trees, vetiver grass, and bamboo
  - Multiplying crop germplasm focusing on rice, cassava, and bananas
  - Assessments of irrigation potentials, including rehabilitating and re-organizing Mpamantha irrigation scheme, treadle pump irrigation, stream diversion, and water harvesting.
  - Constructing fish ponds and organizing the supply of fingerlings.
- Collaborative activities were established with the following organizations:
  - Cheetah to initiate paprika production by targeted farmer clubs under winter irrigation using treadle pumps and stream diversion.
  - SARRNET to assess potentials for establishing processing plants for cassava starch, flour and chips.
  - COMPASS II to establish CBNRM activities with selected villages involving forestry, wildlife, and fisheries.
  - NASFAM to establish groups/associations linked to the production, processing and marketing of high value crops, including rice, bird's eye chillies, groundnuts, cotton
  - Bunda College and the bean-Cowpea CRSP Project to establish linkages to promote the multiplication and use of improved bean and cowpea varieties.

Project Organization and Management

The organizational management of the project - from the alliance partnership to the communities in the watershed - is shown in Figure 2. As the lead institution, WSU and it's Project Director has overall responsibility for managing and administering the project. All technical, logistical and financial matters are handled through this unit, including the

production of technical and financial reports with contributions from each alliance partner. Field programs are coordinated at the partner level by the Director of Total LandCare through the District Coordinating Officer at KKDA and the Project Manager. Partner activities are being coordinated by the COSPE Country Representative who liaises directly with all partners and project field staff for planning activities in the field. Line management at the field level is being directed through the District Environmental Officer at the KKDA Headquarters, with the Project Manager as the executive secretary.

Three representative bodies have been set up to support the administration of this management structure:

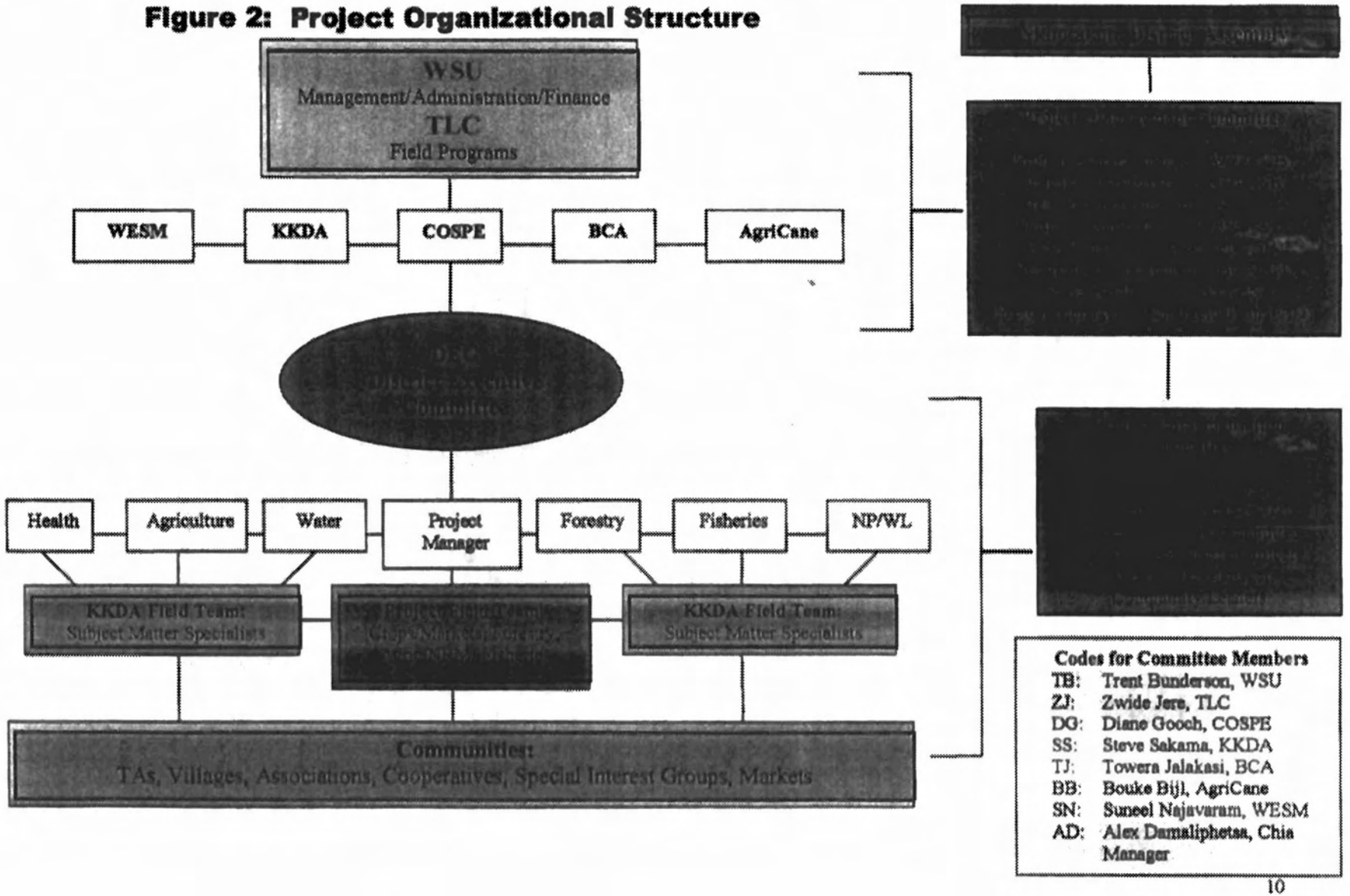
1. Project Management Committee
2. Project Implementation Committee, and
3. Community Committees

Project Management Committee (PMC)

The PMC comprises representatives from each alliance partner and project management to lead initiatives in their areas of specialization (see member composition, Figure 2). The Project Director, WT Bunderson (WSU) serves as the chair, with Z Jere (TLC) in charge of Field Programs, and D Gooch (COSPE) as the Communications Coordinator. The committee meets on the first Thursday and Friday of each month for the following functions:

- Overall coordination of the individual 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 the stated individual funding needs.
- Coordinating timely contributions from each partner regarding project financial and technical reports, workplans, budgets, workshops and field days.
- Communication between the partners, the Project 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.

Figure 2: Project Organizational Structure



Project Implementation Committee (PIC)

The PIC operates at the field level. Its members include the District Environmental Sub-Committee (DESC), the Project Manager, partner field representatives and the government and project field coordinators. The District Environmental Officer (S Sakama) chairs the PIC, with the Project Manager as executive secretary. All meetings are held at sites within the watershed to enhance the exchange of information and understanding among all parties about the diverse range of interventions and the implementing partners involved.

The PIC meets 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 PMC 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.

Community Committees (CCs)

CCs are being formed to provide designated focal groups at the community level to carry out and administer specific activities as indicated in the project workplan. Targeted communities elect respected and active members to represent the community's concerns and issues and to assist the project staff in the implementation, management and support for community participation of any proposed action. Already existing in the project area are Community Based Natural Resource Management Committees and Beach Village Community Committees.

The committees have responsibility for the following:

- Overseeing the development and enforcement of regulations to better manage the resources utilized by the community.
- Assisting in the dissemination of information and the introduction of sustainable and improved resource management technologies.
- Coordinating activities and trainings of the community with the district and project field coordinators.
- Developing by-laws to control the utilization of the natural resources in a sustainable fashion.
- Representing the needs and interests of community members to the government and project field staff.

In addition, community committees are vital in supporting economic initiatives for producing and processing agricultural and natural resource based products. The project will support the strengthening of these committees to become fully functioning organizational bodies that are legally registered and recognized as Community Associations and/or Cooperatives that promote

micro-enterprise development. These Community-based entities will have elected leaders fulfilling organizational/managerial roles and will be responsible to their members for:

- Financial management of the members' monies with full transparency to members on all monetary transactions.
- Accurate and up-to-date bookkeeping and regular reports on accounts.
- Dissemination of technical information to the members.
- Coordination of activities and trainings with members and project/partner field staff.
- Sharing information with other interested parties or communities.
- Management of market linkages and sales for both inputs and outputs.
- Over-all business administration in a transparent and conscientious manner.

Staff Recruitment

Positions for the project have been filled as follows:

- Project Manager – Alex Damaliphetsa who takes charge of project management with support from the Environmental District Officer.
- Agronomist/Marketing Specialist – Richard Museka who handles agronomic aspects of the agricultural based interventions/enterprises, natural resource management, farmer organization and marketing.
- Field Coordinator (Agriculture/NRM) – Edgar Bayani who is responsible for coordination of field activities in sustainable agriculture, natural resource management and enterprise development.
- Field Coordinator (Fisheries) – Vincent Kamwanya who coordinates activities with government field collaborators in co-management of fishery resources, community mobilization and fish farming.
- Field coordinator (Forestry) – Halton Thungula coordinates activities related community organization, bye-law formulation, co-management of natural resources, agroforestry, tree ouplanting, etc.

Procurement of Project Equipment/Materials

The following were procured during the period:

	Item	Source	Unit	Quantity		Remarks
				Planned	Actual	
1	Vehicles					Vehicles were timely procured.
	4x4 Pick Ups	Local	#	3	3	
	Motor Cycles	Local	#	9	9	
2	Field Input/Supplies					Procurement of treadle pumps, inputs for irrigation, nursery & production ponds and beetle tanks is planned for the second semester.
	Agroforestry/Soil Cons					
	Tree Nurseries	Local	#	30	30	
	Vetiver Nurseries	Local	ha	3	3	
	Extenson/Training Materials sets	Local	#	60	60	
	Irrigation					
	Treadle Pumps/Assessories	Local	#	300	0	
	Extension/Input Packs	Local	#	300	0	
	Planting Mat. for Multiplication	Local	ha	10	25	
	Fisheries					
	Nursery & Production Fish Ponds	Local	#	6	0	
	Beetle Prop Tanks (hyacinth control)	Local	#	6	0	
3	Office/Field Equipment					Procurement of the remaining equipment and materials such as the high capacity desktop for GIS and satellite data will be done during the second semester.
	Desktop Computers	WSU	#	2	2	
	Office Furniture	WSU	# sets	2	2	
	Printers	Local	#	2	2	
	UPS	WSU	#	2	1	
	GIS Software					
	ArcView GIS Version 3.3	WSU	Set	1	1	
	ArcView Version 9.0	WSU	Set	1	1	
	MapInfo Professional Version 7.8	WSU	Set	1	1	
	GIS Hardware			1		
	Scan Plus IV Scanner	WSU	Set	1	1	
	DrawingBoard III Digitizer	WSU	Set	1	0	
	Global Positioning System GPS)	WSU	Set	6	6	
	Dell Precision Workstation Desktop	WSU	#	1	0	
	Remote Sensing Data/Images	WSU	Set	4	0	
	Computer consumables	Local	#	2	2	
	Fax Machines	Local	#	1	1	
	Photocopier	Local	#	1	1	
	Binder	WSU	#	1	0	
	Balance scales	Local	#	2	0	
	100m Tape measures	Local	#	3	0	

Collaboration with Partners, Key Stakeholders and Other Organizations

A major aim of the Project was to coordinate its programs with other interested parties and organizations active in the catchment area and with those who wish to share their experience and knowledge in the targeted sectors of intervention. 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. See Annex 1 for full details.

Alliance Partners Annual Planning Meeting

At the initiation of the project in October, an alliance partners meeting was conducted in which each partner was introduced, their role within the project defined and discussion about the most effective organizational structure determined. All alliance partner members were present as well as representatives from each of the district sector departments, i.e., fisheries, agriculture, forestry, environmental affairs, water, parks and wildlife. An annual workplan and budget was produced with the participation and input of all partners and partner's staff present.

Stakeholder Meeting

A stakeholders meeting was held at the Capital City Hotel the beginning of February 2005 with over 70 people in attendance. The Chia Lagoon Watershed Project was officially announced and presented to all potential stakeholders. Comments, suggestions and the sharing of experiences and exploration of mutual areas of interest were promoted and examined. Representatives from the District Offices, the Ministries and Government organizations, Non-Government Organizations, National and International Programs, Donors and Private Sector were present.

Launching Ceremony

On February 16, 2005 the official launch of the Chia Lagoon Watershed Management Project was conducted at the Chia Primary School in Nkhotakota District. The Vice-President the Honorable Dr. Cassim Chilumpha was the honorary guest speaker. There were several thousand present from the surrounding communities, local government, national ministers and ministries, NGOs and private sector. The event was well covered by both the local and national media.

Meetings with USAID

Briefing meetings were held with representatives from USAID to explain and define donor policy, accounting procedures and reporting requirements. Project representatives have attended USAID synergy meetings for the up-dating of activities and exchange of information with other USAID–funded projects.

Briefing Meeting with the District Assembly

The Project was presented to the full District Assembly and the members agreed to give their complete support to the project to facilitate its implementation and success.

Collaboration with Other Organizations

As mentioned earlier, collaboration with various organizations has been established and/or is in the process of being determined and defined. At the present the organizations with which the Chia Project will be coordinating the activities, or is considering, are: SARRNET/ITA; Cheetah, NASFAM, Relay Consultants and Associates, Save the Children, USA; COMPASS II; FINCA; Water Aid/Malawi Water Supply and Sanitation Collaborative Council; Bunda College.

Field Results

This section highlights key results for this period under each result area. Picture illustrations of some of the project results are given in Annex 3.

Decentralization

The following have been achieved under this project result area during the last six months:

1. **Community Sensitization and Awareness**

◊ The project conducted several sensitization and awareness meetings in 90 villages involving 2,224 participants. The meetings covered topics on sector interventions, which included re-organization/re-activation of Village Beach Committees, Village Natural Resource Management Committees, irrigation, fish farming, mushroom production, bee keeping and overview of project objectives and approaches.

◊ The project conducted a tour for 12 members of the KKDA to project sites to appreciate the level of degradation of the Lagoon itself and parts of the watershed. Participants noted serious degradation within the project area and felt the need for action to address the problem. More tours of this nature are planned to expose local leaders and their subjects to the problems and challenges associated with poor land use practices.

2. **Improved CBNRM Structure and Organization**

The main focus was to revamp 47 existing Village Natural Resources Management Committees. This involved reorienting them on their responsibilities and how to demarcate and manage village forest areas. The project will also facilitate the formulation of bye-laws and constitutions on managing village forest areas, closed fishing seasons, use of appropriate fishing gear, designation of fish breeding sanctuaries and streambank protection.

3. **Staff training**

Highlights of courses conducted for district and project staff are:

◊ 2 project and 3 district staff attended a training course in appreciative inquiry which was conducted by COMPASS II in Mzuzu.

◊ 21 field technicians, 4 project personnel and 4 district staff attended a 4-day training course in small-scale irrigation facilitated by TLC with the Land Resource Center. Topics covered included treadle pump use and maintenance, plot layout, canal layout and construction for stream diversion and community-based extension approaches.

◊ 2 project personnel and 2 field coordinators attended a 2-day training course in conservation farming at Bazale EPA in Balaka. The training was organized by the Department of Agricultural Research and Technical Services (DARTS) in the Ministry of Agriculture in partnership with CYMMIT. The project will participate in demonstrating the technology with 10 farmers in Mwansambo EPA. Presentations were made on plot layout, land preparation, methods of planting, soil conservation, fencing, and the management of crop residues, soil fertility and pests.

Community-Based NRM

1. Improved management of the Chia land and forest resources

The following were the major achievements made during the period:

- A total of 143,364 tree seedlings were raised in 40 nurseries over 13 VNRMCs, representing 72% of the targeted numbers for this season. The low achievement is due mainly to the late start of the project in relation to needs for nursery preparation. Results will greatly improve in the coming season as there will be adequate time for proper planning and mobilizing communities.
- By the end March 2005, a total of 59,037 trees were outplanted, representing 30% of the annual target and 41% of total seedlings raised. Trees were planted in communal woodlots, around homesteads, along roads and streambanks and on farm land. As the figures show, the achievement in terms of trees outplanted is quite low. Although rains started early, most seedlings were still too small to be outplanted as they had been raised late. This problem was compounded further by a prolonged dry spell during the months of January and February. Conditions were generally too dry to plant trees, but advice was offered to farmers to plant the remaining nursery seedlings along stream banks where residual soil moisture was still present, and around homesteads or irrigated fields where they could can be watered easily.
- A total of 7 vetiver grass nurseries were established covering 0.57 hectares. In addition, 0.7 hectares were planted with vetiver grass hedges in Mwansambo EPA.
- 10 farmers were identified in Mwansambo EPA to participate in demonstrating conservation farming. This program will be implemented in partnership with DARTS and CYMMIT.

2. Improved management of Chia Lagoon fishery resources

The following results were achieved:

- Reactivation of 8 Beach Village Committees (BVCs) around Chia Lagoon with a total membership of 353 (265 male and 88 female).
- Field appraisals for pond construction in 3 sites under Mwansambo EPA.
- Construction of 5 fish ponds covering a pond area of 1,230 m^2 which will benefit 5 households. The project is arranging to source fingerlings from the World Fish Centre at Domasi. Farmers will pay the full market cost of the fish. Plans are being made to set up revolving funds for fish farming schemes to help sustain activities in the long run.

3. Co-Management of Natural Resources

The project has identified two pilot sites that fall within the border zone of the Nkhotakota Wildlife Reserve. These include Bamba which falls within the project impact area and Mbewa which is outside the project area. The objective is to assist KKDA in developing an approach for coordinated CBNRM. The project will work with COMPASS II and the other stakeholders at the KK District level.

The project will also test a new approach in the co-management of natural resources at the village/community level. The approach involves formation of a Village Natural Resource Management Association (VNRMA) as the umbrella organization to oversee the management and utilization of all natural resources within a village. The VNRMA will have powers to oversee and provide direction to special interest groups within the village to utilize and manage the resources for income and other uses on a sustainable basis. The present structure of the Village Natural Resource Management Committees (VNRMCs) limit the portfolio of these structures to management of village forest areas only. In addition, VNRMCs are viewed as a group of a few individuals in a village representing their own and government's interests.

The project has re-organized the communities in the two villages and with the support of COMPASS II will carry the following activities in the next months:

- Train field workers in appreciative inquiry, an assets-based approach to development which capitalizes on peoples' capabilities, skills and resources rather than focusing on problems and support from outside.
- Conduct a participatory/community-based resource mapping/inventory/quota setting of the area using GPS and other tools.
- Train communities in the formulation of bye-laws and constitutions and their enforcement.
- Guide/facilitate communities in registering their organizations with the Registrar General.
- Facilitate development of community-based management plans.

Sustainable Agricultural Practices

1. Crop diversification

The main achievement under this result area was the purchase of 2,000 kg of certified Kilombera rice seed from Domasi Scheme in Zomba, which was issued to farmers at an Lifuliza Irrigation Scheme. A total of 23 hectares had been grown with this variety. Although the price of seed was MK30/kg, farmers agreed to repay the seed loan at the rate of MK65/kg. This is meant to build a revolving fund account so that more seed can be bought in the coming season to allow participation by more farmers.

2. Multiplication of improved planting material

- A total of 188 improved banana suckers were bought from Bunda College and issued to farmers. The objective is to multiply the variety for distribution to other farmers within the project sites. More improved materials will be distributed in the coming season.
- 166 bundles of Manyokora cassava variety were planted for multiplication covering an area of 1.76 hectares. The material was sourced from Mitundu in Lilongwe with the assistance of the Southern Africa Roots Research Network (SARRNET). In addition, 0.47 hectares of the bitter variety were planted from locally sourced improved materials.

3. **Winter irrigation**

The project achieved the following:

- ◊ Assessed 8 sites in the Mwansambo and Linga areas, 6 of which have high potential. Detailed assessment of these sites is planned for the second semester.
- ◊ The project facilitated formation of 15 irrigation clubs which will be issued with treadle pumps and input packs in April using the TLC extension approach.
- ◊ In partnership with Cheetah, the project issued 88 certified paprika seed packs to 88 households who will raise paprika seedlings for irrigated production. Farmers have shown great interest in this crop as the returns and market demand are good if standards of quality are maintained.
- ◊ The project is also exploring the potential of rehabilitating the Mpamantha irrigation scheme. The scheme is managed by the Chamwavi Group of Companies which has been approached to consider rehabilitating the scheme and its smallholder organization based on arrangements to be worked out between KKDA and the Scheme management.

Enterprise Development

The main activities carried out were sensitization, training and organization of communities interested in winter irrigation, honey and mushroom production. A total of 138 potential irrigation farmers were trained by BCA in group dynamics and leadership. In addition, WESM was involved in assessing the potential of Mbambala River for eco-tourism.

Monitoring Ecosystem Dynamics in relation to Landuse

The following activities were carried out during the period:

- ➢ The major focus was to conduct a hydrographic survey of the lagoon carried out by staff from the KKDA Water Department, the Ministry of Water Development and the Department of Surveys. The objective was to establish the depth of the lagoon which has been subjected siltation from run-off. Despite the significance of the watershed, no such survey has ever been carried out on the lagoon. The information will be used as a benchmark against which to assess change over time due to project interventions. The survey involved taking of soundings from a well equipped boat along survey lines over the entire body of water. An echosounder built in the boat was used to measure depths at appropriate intervals along the survey lines as determined by the survey team. The survey lines extended onto land from the lagoon fringes up to a predetermined elevation.
- ➢ A preliminary landuse and environmental degradation assessment of the area showed a high risk of degradation due to tobacco production, especially flue-cured estate tobacco. The study further showed a relatively moderate level of degradation within the project area compared to the Ntchisi part of the catchment, where there is need for urgent action.

PLAN OF WORK FOR APRIL-SEPTEMBER 2005

Annex 2 shows activities planned for the second semester, April – September 2005.

Annex 1: Collaboration with Partners and Other Organizations

Partner Alliance	# of Meetings	Highlights of Content and Subject Matter of Meetings/Collaboration (combined across meetings)	Participation			
			Depts Present	Names of Partners Present	# District Officers	# Extension Staff
Full District Assembly	1	Project Briefing of District Assembly		KKDA	78	
				TLC		
				WESM		
				COSPE		
				BCA		
				AGRICANE		
Stakeholders Meeting	1	Chia Lagoon Project was officially presented to all potential stakeholders . Comments, suggestions an the sharing of lessons learned an exploration of mutual areas of interest were examined.	District Officers	TLC		
			District TAs	WESM		
			Gov't. Ministries	KKDA		
			Gov't Organizations	AGRICANE		
			NGOs	COSPE		
			National & International Programs	BCA		
				AGRICANE		
			Private Sector			
Launch	1	Several thousand attended the official launch of the project at Chia Lagoon. The Vice-president Honorable Dr. Cassim Chilumpha was guest speaker.	District Officers	KKDA		
			District TAs	TLC		
			Gov't. Ministries	WESM		
			Gov't Organizations	COSPE		
			NGOs	BCA		
			National & International Programs	AGRICANE		
			Private Sector			
Alliance Partners	1	Developed the 2004-2005 annual budget and workplan	Community Dev'l	TLC	11	4
			Forestry	WESM		
			Fisheries	KKDA		
			Agriculture	AGRICANE		
			Parks and Wildlife	COSPE		
			Environmental Affair	BCA		
				AGRICANE		

Partner Alliance	# of Meetings	Highlights of Content and Subject Matter of Meetings/Collaboration (combined across meetings)	Participation			
			Depts Present	Names of Partners Present	# District Officers	# Extension Staff
Project Management Committee (PMC)	2	The PMCs looked discussed the following issues:		TLC		1
		1. the project setup and partner roles		WESM		
		2. inter-partner communications		KKDA		
		3. disbursement of funds, equipment and other resources		AGRICANE		
		4. financial and technical management and reporting		COSPE		
		requirements		BCA		
		5. priorities and responsibilities for field activities		AGRICANE		
		6. linkages between the partner alliance				
		7.collaboration with other parties / organizations in the area				
		8. evaluation of field activities in progress				
Project Implementation Committee (PIC)	2	1. Presentation and review of sectoral activities in project area	Community Dev'l	TLC		
			Forestry	WESM		
		2. Sectoral roles and responsibilities in the implementation of	Fisheries	KKDA		
		project activities	Environmental Affair			
			Water			
		3. Arrangements for logistical support to sectors	Parks & Wildlife			
			Community Dev'l			
		4. Workplanning of project activities (monthly, quarterly)	NASFAM			
District Environmental Sub-Committee (DESC)	8	1. Review and updating of DSOER	Agriculture	KKDA	24	4
			Forestry	TLC		
		2. Presentation & review of progress reports on sectoral	Fisheries	WESM		
		activities	Environmental Affair			
			Water			
		3. Workplanning of environmental activities and mode of	Parks & Wildlife			
		implementation	Community Dev'l			
			Education			
			WESM			
			NICE			
			NASFAM			
			Health			
			District Assembly			
			Meteorology			
USAID	3			TLC		
		1.Briefing on policy, accounting fomats and reporting requirements.		COSPE		
		2. Attending synergy meetings with other USAID funded project				
		representatives, exchange of ideas and updating of activities.				

Collaborating Organizations	# of Meetings	Highlights of Content and Subject Matter of Meetings/Collaboration (combined across meetings)	Participation	
			Persons Attending	Agreements Reached on Nature of Collaboration
SARNET/IITA	5	Met with full SARNET staff involved in cassava/sweet potato	Nzola Mahungu	Possible areas of collaboration with MoU to be signed:
		production and processing for preliminary information about	Vito Sandifolo	1. Conduct an assessment of the Chia catchment area to identify
		their work in the KK district. Two joint visits made to the	Alex Nthenyiwa	suitable sites for low-cost cassava/sweet potato processing facilities
		SARNET cassava starch processing plant in KK district to	Chris Moyo	2. Identify access to improved high yielding, disease resistant planting
		assess potential for developing a joint plan of action for	Dyton Siyeni	materials, appropriate for diverse value-added processing
		collaboration in the Chia catchment area.	Towonge Chadzala	3. Market analysis and development
			Bella Jumbe	4. Information sharing and joint field visits
			Albert Mhone	
			Trent Bunderson	
			Zwide Jere	
			Diane Gooch	
			Towera Jalalzai	
			Richard Musela	
			Edgar Bayani	
			Alex Damaliphetse	
CHEETAH	3	Two preliminary meetings to discuss common areas of interest	Christian Dehee	Will initiate the program with the establishment of 100 paprika nurseries.
		and what collaboration/cooperation might be possible.	Trent Bunderson	For next season will identify appropriate sites for the production of
		Joint field visit to assess the area and possible sites in	Zwide Jere	irrigated paprika. Cheetah will provide extension materials and
		the Mwanaambo area appropriate for paprika production	Diane Gooch	training of trainers for proper agronomic practices for quality
		under irrigation.	Richard Musela	paprika.
			Alex Damaliphetse	
NASFAM	3	NASFAM is opening offices in KKD and is targeting the 3 EPAs	Duncan Warren	A follow-up meeting of stakeholders is to be held in which a work
		in the Chia catchment area. Crops they will be focusing on are:	Trent Bunderson	plan will be developed and an MoU will be drawn up.
		Kilombero Rice, Groundnuts and Birdseye Chili.	Zwide Jere	
			Diane Gooch	
			Alex Damaliphetse	
Relay Consultants & Associates	3	Two site visits and one office meeting to explore the possibility	Njoki Wainaina	Will be consulting with Relay Consultants to identify appropriate low-cost
		of low-cost value added agro-processing.	Zwide Jere	agro-processing technologies.
			Diane Gooch	

Collaborating Organizations	# of Meetings	Highlights of Content and Subject Matter of Meetings/Collaboration (combined across meetings)	Participation	
			Persons Attending	Agreements Reached on Nature of Collaboration
Save the Children,USA	3	Discussed possibility of accessing NAC funds for the Chia catchment area as SAVE is the umbrella organization for NAC in the KKD. Has been confirmed that SAVE is working in the Chia area and we can proceed to develop a proposal for the health component in coordination with SAVE.	Express Moyo Alick Mbewe Diane Gooch	Will meet to discuss how to collaborate and develop a coordinated proposal for NAC funding for some of the Chia project health components. Will work to support and strengthen on-going Ministry of Health and Red Cross programs, targeting the Chia catchment area.
Compass II	2	Have met with COMPASS II to discuss ways of coordinating project activities in the KKD. COMPASS will focus on the areas outside the Chia Catchment area. Consistent & complimentary messages and activities will be implemented. Common areas of activity are: CBNRM, Forestry, Wildlife and Fisheries. The 2 projects will coordinate for the GIS resource mapping and support for the development of the co-management structure/organization of the Nkhotakota Game Reserve.	Todd Johnson John Dickinson Trent Bunderson Zwide Jere Diane Gooch	A MoU to be written and signed
	1	Appreciative Inquiry Workshop	Alex Damaliphetsa Victoria Kambalame	A workshop that was attended by project and district staff. Participants will conduct training of the staff who did not attend with over-sight assistance from COMPASS
FINCA	2	Have met to discuss possibility of coordinating with their program to offer a rural credit and loan scheme in the Chia catchment area.	Jonathan Kamin Trent Bunderson Zwide Jere Diane Gooch	Met with a representative from the Washington office to determine if it is appropriate for a collaboration in the area and to develop a joint proposal for potential funding from Phillip Morris.
WSU/Bunda College	2	Developed a proposal for collaboration with WSU, Bunda College and Total Land Care for bean/cowpea production	Trent Bunderson Carol Miles Charles Masangano	Bunda College and WSU will collaborate with TLC in the following manner: 1. Multiply Kalima seed during the winer/irrigated season in 2005 and evaluate seed quality 2. Evaluate and compare the efficacy of winter/irrigated and rain-fed bean seed production of 3 newly released CRSP varieties in 2005-2007 3. Multiply seed of two newly released sugar bean varieties during the winter/irrigated season in 2006 and evaluate seed quality

Annex 2: Chia Project Plan of Action, April - September 2005

	ACTIVITY	TIME/FRAME 2005						Responsible Party
		Apr	May	Jun	Jul	Aug	Sep	
1.0	Decentralization and Effective Devolution of NDA							
1.1	Form/strengthen community-based structures							
	Village Natural Resource Mngt Committees (VNRMC)							NDA-Forestry
	Village Beach Committees (VBC)							NDA-Fisheries
	Bee Keeping Clubs							NDA - NPWL
	Irrigation Clubs							NDA-Agric
	Fish Farming Clubs							NDA-Fisheries
	Small Wild Animal Club							NDA-NPWL
	Environmental/Wildlife Clubs							WE&M
	Tour Guide Clubs/Associations							WE&M
	Community Associations/Cooperatives							BCA
1.2	Facilitate exchange visits/dialogue between communities							NDA
1.3	Organize & manage awareness campaigns and environmental rallies							WE&M
1.4	Strengthen linkages/communication between ward councillors, TAs, MPs, & communities							CDSPE
1.5	Support policy & bye-law formulation/reform to regulate use and management of natural							NDA/TLC
1.6	Support establishment of community-based revolving funds/credit schemes							NDA/TLC
2.0	Improved Capacity for Community-Based NRM							
2.1	Facilitate participatory resource & problem analysis							NDA/WE&M
2.2	Facilitate development of community action plans							NDA/WE&M
2.3	Develop an environmental action plan for the area							NDA/WE&M
2.4	Facilitate development of environmental micro-projects							WE&M
2.5	Improved CB Management of Chia Land/Forest Resources							
	Evaluate potential, and facilitate where appropriate, the transfer of rights and access for NRM from Govt to local communities through co-management agreements							NDA-NPWL
	Support establishment of community tree nurseries							NDA-Forestry
	Provide technical support in tree outplanting & mangt; bamboo planting; regeneration/protection of natural woodlands & streambanks; improved wood stoves							NDA-Forestry
2.6	Improved CB Management of Chia Water Resources							
	Identify and prioritize river hot spots							WE&M
	Support communities in river / streambank restoration activities							NDA-Forestry
	Construction of shallow wells							NDA-Water
2.7	Improved CB Management of Chia Fisheries Resources							
	Support communities to control water hyacinth through physical & biological methods							NDA-Fisheries
	Designate sanctuaries to protect important fish breeding/nursery grounds							NDA-Fisheries
	Support building of CB nurseries & production ponds for aquaculture							NDA-Fisheries

Annex 2: Cane Project Plan of Action, April - September 2006

	ACTIVITY	TIMEFRAME 2006						Responsible Party
		Apr	May	Jun	Jul	Aug	Sep	
3.0	**Sustainable Agricultural Practices**							
3.1	Crop Diversification							
	Assess alternative/viable crops							AgriCane
3.2	Small-scale Irrigation							
	Evaluate irrigation potential in the area and design appropriate interventions							AgriCane
	Provide extension support with irrigation equipment and inputs to club members							TLC
	Stream diversion - support, tools							TLC
	Water harvesting/storage ponds (mechanical)							TLC
3.3	Soil & Water Conservation/Conservation Farming							
	Provide technical support in contour farming, conservation farming & gully control							NDA-Agric/TLC
3.4	Agroforestry Practices							
	Provide technical support in soil fertility interventions, compost making & rotations							NDA-Agriculture
	Support communities in promotion of ecological sanitation							TLC
4.0	**Enterprise Development**							
4.1	Evaluate / develop enterprises							
	NRM-based products:							
	Timber/fuel production							BCA
	Local bamboo for construction and craft making							BCA
	Grasses for thatching							BCA
	Bee keeping & honey processing and marketing							WSEM
	Cane rat farming							BCA
	Guinea fowl farming							BCA
	Eco-tourism (e.g., bird/game viewing, hiking/camping, fishing, boats, hides etc)							WSEM
	Agro-based Products							
	Support development of micro-irrigation of high value crops							BCA
	Agro-processing of cassava, sweet potato, g/nuts, horticultural crops, fruits, rice etc							BCA/AgriCane
	Supercane outgrower scheme with Dwangwa Cane Growers Limited							BCA/AgriCane
	Selling of fingerlings and fish produced in community ponds							BCA
4.2	Conduct market research							BCA
4.3	Facilitate market linkages							BCA
4.4	Promotion of finished products							BCA
4.5	Support formation of business associations/cooperatives							BCA/COSPE
4.6	Support development of a market information system							BCA
4.7	Provide technical support in financial and business administration							BCA

Annex 2: Chia Project Plan of Action, April - September 2005

	ACTIVITY	TIMEFARME 2005						Responsible Party
		Apr	May	Jun	Jul	Aug	Sep	
5.0	**Training**							
5.1	Train community leaders and staff in NRM related Acts/Policies							NDA
5.2	Train community leaders in by-law/constitution formulation and enforcement							NDA
5.3	Train staff in sustainable use, co-management of natural resources and GPS, conservation							NDA
5.4	Train communities in specific sector interventions							
	Agroforestry, soil conservation/conservation farming							TLC
	Nursery management, tree & bamboo outplanting, improved wood stoves, solar cookers							TLC
	Small-scale irrigation systems							TLC/AgriCane/NDA
	Shallow well operation & maintenance							NDA Water
	Management of revolving funds							BCA
	Ecological sanitation							WESM
	Sustainable agronomic practices							NDA-
	Bee keeping							NDA-NP/WESM
	Guinea fowl and cane rat farming							NDA-NP/WESM
	Eco-tourism/tour guiding							NDA-NP/WESM
	Fish farming							NDA-Fisheries
	Sustainable fishing methods and fish processing							NDA-Fisheries
5.5	Training in basic business and marketing skills							BCA
5.6	Development of Extension Materials across all the above areas							Alliance
6.0	**Monitoring & Evaluating Project Activities & Impacts**							
6.1	Produce base maps of the area using GIS							TLC
6.2	Conduct land use/cover change analysis using satellite data and API							TLC-AgriCane
6.3	Identify "hot spots" in the watershed to prioritize interventions							TLC-AgriCane
6.4	Conduct hydrographic survey of the Lagoon							NDA-Water
6.5	Carry out water quality analysis of the Lagoon							NDA-Water
6.6	Establish new water level gauging stations							NDA-Water
6.7	Monitor water flow/level in designated rivers and the lagoon							NDA-Water
6.8	Conduct framework for fishing gear and boats							NDA-Fisheries
6.9	Collect data on fish catches and fish marketing/prices							NDA-Fisheries
6.10	Support communities in enforcing by-laws in CBNRM							NDA
6.11	Facilitate CBM&E surveys to evaluate progress/results							TLC
6.12	Design and produce database on adoption of interventions/NRM practices by village/area							TLC
6.13	Project Management Committee Meetings							COSPE
6.14	Project Implementation Committee Meetings with DESC							NDA
6.15	Produce monthly financial reports							WSU
6.16	Produce quarterly progress reports							WSU
6.17	Conducting surveys + producing State of Environment report							NDA
6.18	Annual Review and Planning Meeting							COSPE
6.19	Produce annual report							WSU
6.20	Produce 2005-06 annual workplan							WSU

Clear waters on Chia Lagoon outlet before rains

Chia Lagoon outlet after rains

Vice President Cassim Chilumpha officially opening the project

Part of the crowd that witnessed the launching ceremony

A well constructed fish pond ready for stocking with fingerlings

A fingerling production pond

Healthy seedlings ready for outplanting

A newly planted communal woodlot

CHIA LAGOON WATERSHED MANAGEMENT PROJECT

1st SEMI-ANNUAL REPORT
OCTOBER 2004 TO MARCH 2005

Prepared By

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April 30, 2005

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INTRODUCTION

Background and Problem Analysis

This proposal was developed as a joint response to a request from the Nkhotakota District Assembly to address a broad range of inter-related problems affecting the livelihoods of communities in the Chia Lagoon Watershed. The project is being implemented under USAID's Global Development Alliance initiative approved on October 1 2004. It involves a partnership alliance with the Nkhotakota District Assembly (KKDA), local communities, five NGOs and a private firm.

Total funding involves US$ 2.07 million from USAID and $ 2.7 million from the partner alliance covering a 3 year period from October 1 2004 to September 30 2007.

Priority concerns of the local inhabitants include:

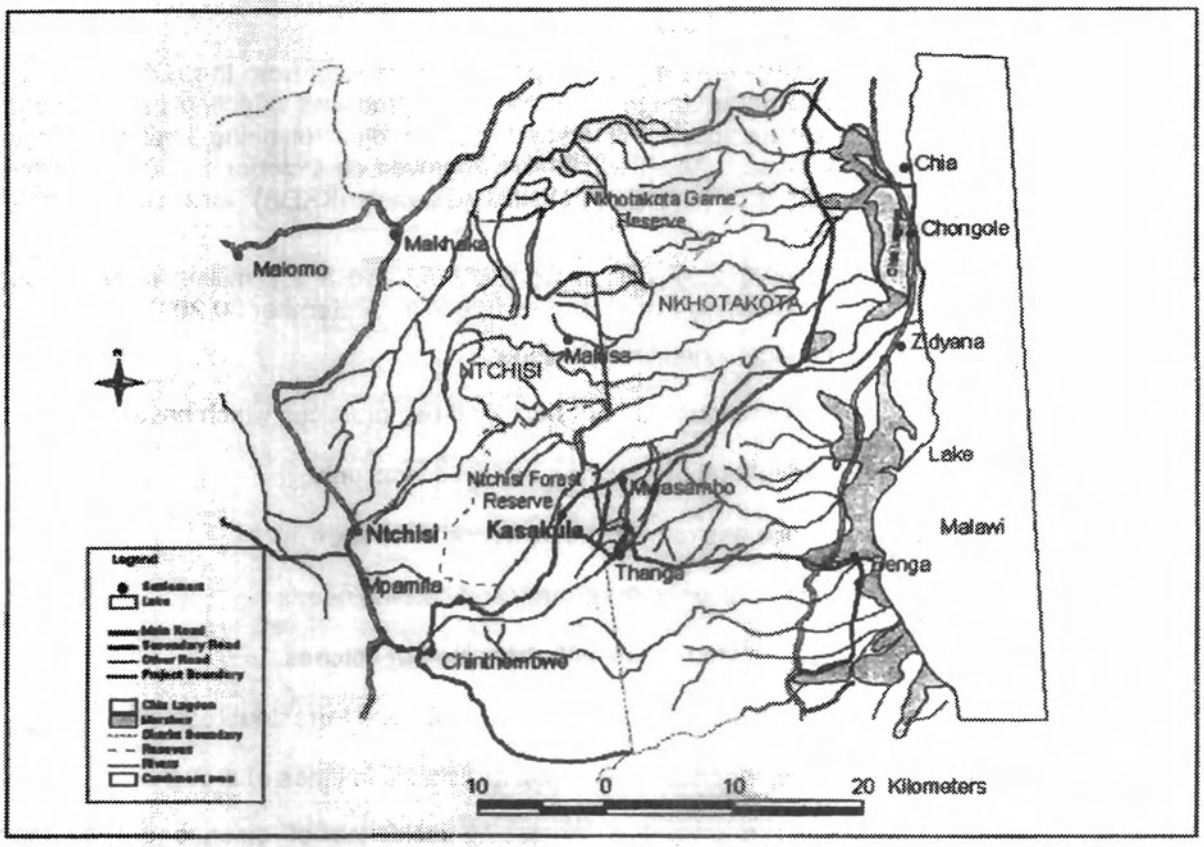
- Degradation of natural resources from poor land-use practices which have led to:
  - declining agricultural productivity and food insecurity
  - decreasing incomes to meet basic household needs
  - acute shortages of wood for energy and building needs
  - sedimentation of the lagoon with dropping fish catches
  - declining biodiversity of the lagoon's aquatic and terrestrial resources
  - increasing dependence on external assistance in times of drought
- Escalating health risks from the increasing incidence of disease due to malaria, HIV/AIDS, respiratory ailments, schistosomiasis (bilharzia), trachoma, trypanosomiasis (sleeping sickness), dysentery and cholera. These diseases have incapacitating effects on rural productivity, education, family support systems and social values.

Description of the Watershed and Target Communities

Chia Lagoon Watershed covers a total area of 989 km2, of which 611 km2 forms the project area. It falls between latitudes 13°0' and 13°30'S, and longitudes 33°50' and 42°20'E, in parts of Nkhotakota and Ntchisi Districts in Central Malawi (see **Figure 1**). The watershed encompasses Ntchisi Forest Reserve in the southwest, and part of Nkhotakota Game Reserve to the northwest. The drainage of the area is dominated by the Lifuliza, Likoa and Bambara river systems, which originate in the Ntchisi hills through deeply incised gorges and valleys before entering the lowland plains and the lagoon.

The watershed has vast natural resources, which are vital to the livelihoods of its 55,000 human inhabitants. The uplands are characterized by *Brachystegia-Julbernardia* savanna and woodland interspersed with intensive cultivation of maize, groundnuts, cassava and tobacco. The lowland plains support *Acacia-Bauhinia* woodland with paddy rice, cassava and maize as dominant crops. The Chia Lagoon, which has an outlet into Lake Malawi to the east, is an important fishery resource for communities living around its borders with a body surface area of 17 km^2. The lagoon's fringes are heavily colonized by marsh reeds (*Phragmites* spp.) and shrubs (e.g., *Aeschynomene, Mimosa* and *Sesbania* spp.) that thrive under waterlogged conditions.

Figure 1: Catchment Area of Chia Lagoon Watershed



Participatory rural appraisals of the area have identified major problems of natural resource degradation in the Chia Lagoon watershed from poor land-use practices for the past 20 years. The main causal factors include opening new land for agriculture, cultivation on steep slopes and stream banks, poor farming practices, uncontrolled cutting of trees for wood, and setting bush fires which destroy or degrade valuable vegetative cover. The results have led to sedimentation of the lagoon, negatively affecting its rich biodiversity and the livelihoods of its local communities. A contributing factor is due to the varied claims over the use of the watershed's natural resources, a problem which has degenerated into conflicts among different user groups. The situation is exacerbated by short-term interests of survival, social prestige, and material gain among the communities involved.

Impacts on the watershed's natural resources include:

1. **Soil degradation:** There is evidence of severe soil degradation in terms of physical, chemical and biological properties due to over-cultivation and loss of topsoil from surface run-off and erosion. The result is a major constraint in maintaining the area's agricultural productivity.

2. **Degradation of natural vegetation:** Loss of vegetation cover in the watershed (due to reasons specified above) has led to a steady decline in wood supplies on customary land. To help compensate for the deficit, communities are encroaching into the forest and game reserves, a situation which is only aggravating degradation of the watershed with rising conflicts between different user groups.

3. **Reduced abundance and diversity of fish resources in the Lagoon:** There has been a drastic reduction in fish stocks in the lagoon. The Fisheries Department (1999) reported a decline in catches from over 500 tons between 1992 and 1995 to less than 300 tons in recent years. This has been accompanied by changes in the species composition of fish. Several factors have contributed to this problem. The most notable are as follows:

   ◊ *Little or no control of fishing by the communities:* Includes use of inappropriate fishing gear and poisonous plants to kill fish, depletion of breeding stocks, non-observance of closed seasons, and concentration of fishers in the lagoon when fishing in the lake is hampered by bad weather.

   ◊ *Invasion of water hyacinth:* This not only impedes navigation of fishing vessels but it also affects light conditions for aquatic animal and plant life in the lagoon.

   ◊ *Decline in water quality and quantity* due to siltation and chemical pollution from poor or inappropriate cultivation practices upstream (see details below).

4. **Declining water quality and quantity in the Lagoon:** Although no hydrographical surveys and water quality assessments have been conducted, it is apparent that the water quality and quantity of the lagoon have been severely degraded. There is high siltation as evidenced by the sediment loads in the lagoon and its rivers, and shallow water depths at the mouths of rivers as well as the lagoon fringes. Invasion of the water hyacinth in the lagoon, and undesirable shrub species on its fringes, are results of adverse changes in the ecosystem caused largely by improper land-use practices in the upland areas of the catchment.

5. **Declining human health:** The health condition of people in the watershed is declining from a combination of social and environmental factors. Major problems include cholera and diarrhoea/dysentery due to poor standards of hygiene and sanitation in villages and households, and the use of contaminated water. Lack of adequate health care has led to increases in other common diseases, notably malaria, bilharzia (schistosomiasis), HIV/AIDS, sleeping sickness (trypanosomiasis), trachoma, skin infections and respiratory ailments. These diseases have a greater impact on expectant mothers and children under the age of 5. Much could be done to reduce the incidence of these diseases through simple preventive and treatment measures involving focused efforts on community education and upgrading the standards of support to established health facilities.

Project Goal and Objectives

Given the importance of the Chia Lagoon Watershed and the communities within the area, the District Assembly of Nkhotakota took the initiative to address the problems, culminating in this proposal. However, because the project area is limited to the Nkhotakota part of the catchment, a broader effort is needed to incorporate the Nichisi District Assembly and its communities to achieve the scale of impacts expected from a fully integrated catchment approach.

The inter-relationships among the problems outlined above are clear. They demonstrate the urgent need for an integrated approach to produce more effective and lasting results as opposed to mechanistic or sectoral approaches that treat the problems in isolation. Planned studies of the socio-agro-ecosystem will provide a better understanding of the interactions among the different problems and how to address them in a more holistic manner.

The overall goal of the project is to improve the livelihoods of rural communities within the Chia Lagoon Watershed through an integrated community-based approach that involves sustained economic use of the watershed's natural resources of land, water, flora and fauna. This goal is consistent with the economic growth results framework of the USAID's Malawi Mission under *Strategic Objective No. 6: Sustainable Increases in Rural Incomes.*

The goal of the project will be achieved through the following objectives:

1. **Decentralization:** Assistance will be provided to support and strengthen the district decentralization process through services and resources in policy, technical training, business/marketing skills, extension and training materials, environmental monitoring, and overall human development with a focus on organization, leadership, and communications.

2. **Improved Community-Based Natural Resource Management:** The key focus is to empower communities to sustainably use and manage forests, soils, water, fisheries, and wildlife within the catchment through the transfer of knowledge, skills and resources.

3. **Sustainable Agricultural Practices:** Improved agronomic and land-use practices will be promoted through crop diversification, rotations, intercropping, agroforestry, conservation farming, use of organic manure, increased tree planting and various soil conservation methods.

4. **Enterprise Development** will involve the identification and development of enterprises that provide rural people with practical and profitable opportunities to produce agricultural and natural resource-based products in response to demand-driven markets. This will include the ability to add value through basic processing and packaging of products involving the organization of special interest groups/economic units for increased efficiency and competitiveness. It will also leverage opportunities to become more vertically integrated into the market chain through linkages with other producer groups and private sector firms including small medium entrepreneurs (SMEs) engaged in marketing and processing.

5. **Improved Health Services** will be strengthened to reduce the incidence and debilitating effects of malaria, HIV/AIDS, respiratory ailments, schistosomiasis, trachoma, trypanosomiasis, dysentery and cholera through basic preventive and treatment measures. Funding for the health component has yet to be realized, but strong efforts are being made to seek donors and collaboration with other organizations in the sector. This is a critical component of the project since the integration of health services is vital to alleviate the incapacitating effects of diseases on household productivity, education, family support systems and social values.

6. **Monitoring and Evaluating Impacts and Ecosystem Change:** Increased capacity will be developed to monitor and evaluate impacts of targeted interventions on communities within the watershed, including the ecosystem dynamics of its natural resources in relation to changes in land and water use.

IMPLEMENTATION

Partnership Alliance

The implementation of the project is being organized through partner alliance of Washington State University (WSU) as the lead institution with the Nkhotakota District Assembly (KKDA) as the focal point for coordinating field programs with other alliance partners. These include Total LandCare (TLC), Cooperation for the Development of Emerging Countries (COSPE), Business Consult Africa (BCA), AgriCane Malawi, and the Wildlife and Environmental Society of Malawi (WESM) Dwangwa Branch. The alliance team reflects a diverse blend of experiences and skills to develop opportunities for accelerating decentralization, community-based natural resource management (CBNRM), sustainable agricultural practices and market-driven enterprises for agricultural and natural resource products. The areas of specialty for each partner are highlighted in the box below.

The Alliance Team

Washington State University: Project Direction & Oversight, Financial Management, Market Surveys, Feasibility Assessments of Enterprises, CBNRM, Ecosystem Studies, M&E

Total LandCare Malawi: Agroforestry, Soil Conservation, Irrigation and Water Harvesting, Training and Extension Services

Cooperation for the Development of Emerging Countries: Community Mobilization and Empowerment, Agro-processing, Formation & Management of Cooperatives/Associations

Nkhotakota District Assembly: Community Mobilization, Information and Extension Services, Field Implementation

Business Consult Africa and AgriCane Malawi: Business Management and Training, Feasibility and Market Assessments, Product Development, Agro-processing, Private Sector Linkages

Wildlife & Environmental Society of Malawi: Wildlife & Environmental Conservation and Education; Community Environmental Action Plans, Eco-Tourism

AgriCane Malawi: Assessments of landuse & cover, irrigation potential, alternative crops, introduction of value-added processing, GIS mapping

Extension Strategy and Approach

Broad stakeholder participation and community mobilization are key elements of responsive and effective project implementation. This provides opportunities for all stakeholders to participate including government, the private sector, communities, and NGOs. The alliance is working 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.

Services provided by the project include:

1. Training in the relevant technical disciplines, business and financial management, and marketing, with linkages to relevant support groups and information centers.
2. Production/upgrading of user-friendly extension and training materials as needed on all components/sectors of the program based on results and lessons learned. These materials will provide the tools and knowledge for strengthening extension delivery and training.
3. Implementation of an extension strategy to expand outreach efforts by leveraging the limited human, financial and physical resources available:
   - ◊ Each site within the watershed will be serviced by one field technician initially covering 30 villages. Over time, this number will triple as villages become more self-sufficient in managing the interventions.
   - ◊ Targeted villages in each site will be organized in a clustered concentration 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 and expanding the program.
   - ◊ The program will be expanded geographically by leveraging the resources of selected NGO and other partners who are interested in participating in the targeted activities, and/or in receiving technical/training support from the alliance.
   - ◊ Impacts will be greater and more visible due to the synergistic effects of involving the collaboration of many villages and traditional leaders under a coordinated program of implementing partners with a common goal.
   - ◊ Results produced will attract interest in participation from other service providers as well as neighboring communities.
4. Market assessments to provide information with a realistic understanding of:
   - ◊ Markets and their dynamics;
   - ◊ Inter-relationships of different market players;
   - ◊ Market opportunities for communities and the constraints that hinder the realization of those opportunities;
   - ◊ Private sector providers of business and information services;
   - ◊ Appropriate and effective market-led strategies;
   - ◊ Interventions that generate high impacts.

Monitoring and Evaluation

A project monitoring and evaluation (M&E) plan has been developed and revised in response to comments and suggestions from the Malawi USAID mission. It includes input, output, and impact monitoring based on the development and execution of studies, surveys and questionnaires at specified periods with project partners and collaborators. The plan forms an integral part of the project implementation designed to ensure performance and timely detection and correction of implementation weaknesses and inefficiencies.

Strategic elements of the M&E Plan include:

- Baseline information on the human and natural resource base.
- A computerized profile of each village in the catchment to characterize major human, socio-economic and bio-physical features entered into a database.
- Key indicators for each result area of the project, disaggregated by gender where possible, to match targeted outputs.
- Input indicators including trainings, provision of extension and other project materials, village/community exchange visits, meetings with communities and their leaders, demonstrations, field days, workshops, etc as specified in the plan of activities.
- Output indicators that include the effectiveness of the project activities in achieving the objectives of the project.
- Natural resource indicators to monitor the abundance and quality of water, vegetation, fisheries and wildlife in relation to land use practices over the entire watershed.

For further details, please refer to the revised M&E Plan submitted to USAID in April.

PROJECT RESULTS TO DATE

Overview of Progress

The Chia Watershed Project was approved by USAID on October 1 2004 through a grant arrangement with Washington State University. The timing had a major influence on the nature and scale of certain field components of the project as it coincided with the start of the rainy season. It specifically affected efforts to establish tree and vetiver grass nurseries, bamboo propagation, agroforestry, soil conservation and the diversification and multiplication of rainfed crops.

The initial thrust of the project focused on establishing an efficient structure for coordinating and managing the project. Key actions are highlighted below:

- Defining the project setup, organization and responsibilities of the partner alliance, including their inter-relationships.
- Establishing bank accounts for the project and for each partner.
- Holding meetings with a) the Nkhotakota District Assembly, and b) key stakeholders to discuss and explain the project for its acceptance and approval.
- Organizing a formal project launching ceremony hosted by the Vice President of Malawi, Dr. Cassim Chilumpha at Chia Lagoon
- Holding partner meetings at Nkhotakota District to discuss and define:
    - the project setup and partner roles
    - inter-partner communications
    - disbursement of funds, equipment and other resources
    - financial and technical management and reporting requirements
    - priorities and responsibilities for field activities
    - linkages between the partner alliance
    - collaboration with other parties / organizations in the area
    - evaluation of field activities in progress

- Procuring and insuring office and field equipment:
  - computers, software, printers, copier, fax, furniture
  - GIS equipment, scanner, GPS's, software
  - 4x4 vehicles
  - Off road motorcycles
- Recruiting and relocating new project staff, with allowances for the normal 1-3 month period of notice for terminating current positions.
- Setting up offices at the KKDA premises to provide effective management and communication support with government and project field staff, as well as other collaborating organizations.
- Developing workplans and budgets for each partner.
- Disbursing funds and equipment to partners according to agreed plans and budgets.
- Mobilizing communities through awareness and sensitization meetings and exchange visits involving traditional authorities and villagers.
- Initiating collection of baseline information on the human, socio-economic and natural resource base within the catchment area:
  - People, villages and socio-economic activities
  - Water
  - Fisheries
  - Forestry
  - Soils
  - Wildlife
- Implementing field programs involving:
  - Strengthening community structures and interest groups
  - Forming and strengthening clubs for bee keeping, mushroom production, and harvesting various plant products
  - Actions to protect streambanks
  - Planting trees, vetiver grass, and bamboo
  - Multiplying crop germplasm focusing on rice, cassava, and bananas
  - Assessments of irrigation potentials, including rehabilitating and re-organizing Mpamantha Irrigation scheme, treadle pump irrigation, stream diversion, and water harvesting.
  - Constructing fish ponds and organizing the supply of fingerlings.
- Collaborative activities were established with the following organizations:
  - Cheetah to initiate paprika production by targeted farmer clubs under winter irrigation using treadle pumps and stream diversion.
  - SARRNET to assess potentials for establishing processing plants for cassava starch, flour and chips.
  - COMPASS II to establish CBNRM activities with selected villages involving forestry, wildlife, and fisheries.
  - NASFAM to establish groups/associations linked to the production, processing and marketing of high value crops, including rice, bird's eye chillies, groundnuts, cotton
  - Bunda College and the bean-Cowpea CRSP Project to establish linkages to promote the multiplication and use of improved bean and cowpea varieties.

Project Organization and Management

The organizational management of the project - from the alliance partnership to the communities in the watershed - is shown in Figure 2. As the lead institution, WSU and it's Project Director has overall responsibility for managing and administering the project. All technical, logistical and financial matters are handled through this unit, including the

production of technical and financial reports with contributions from each alliance partner. Field programs are coordinated at the partner level by the Director of Total LandCare through the District Coordinating Officer at KKDA and the Project Manager. Partner activities are being coordinated by the COSPE Country Representative who liaises directly with all partners and project field staff for planning activities in the field. Line management at the field level is being directed through the District Environmental Officer at the KKDA Headquarters, with the Project Manager as the executive secretary.

Three representative bodies have been set up to support the administration of this management structure:

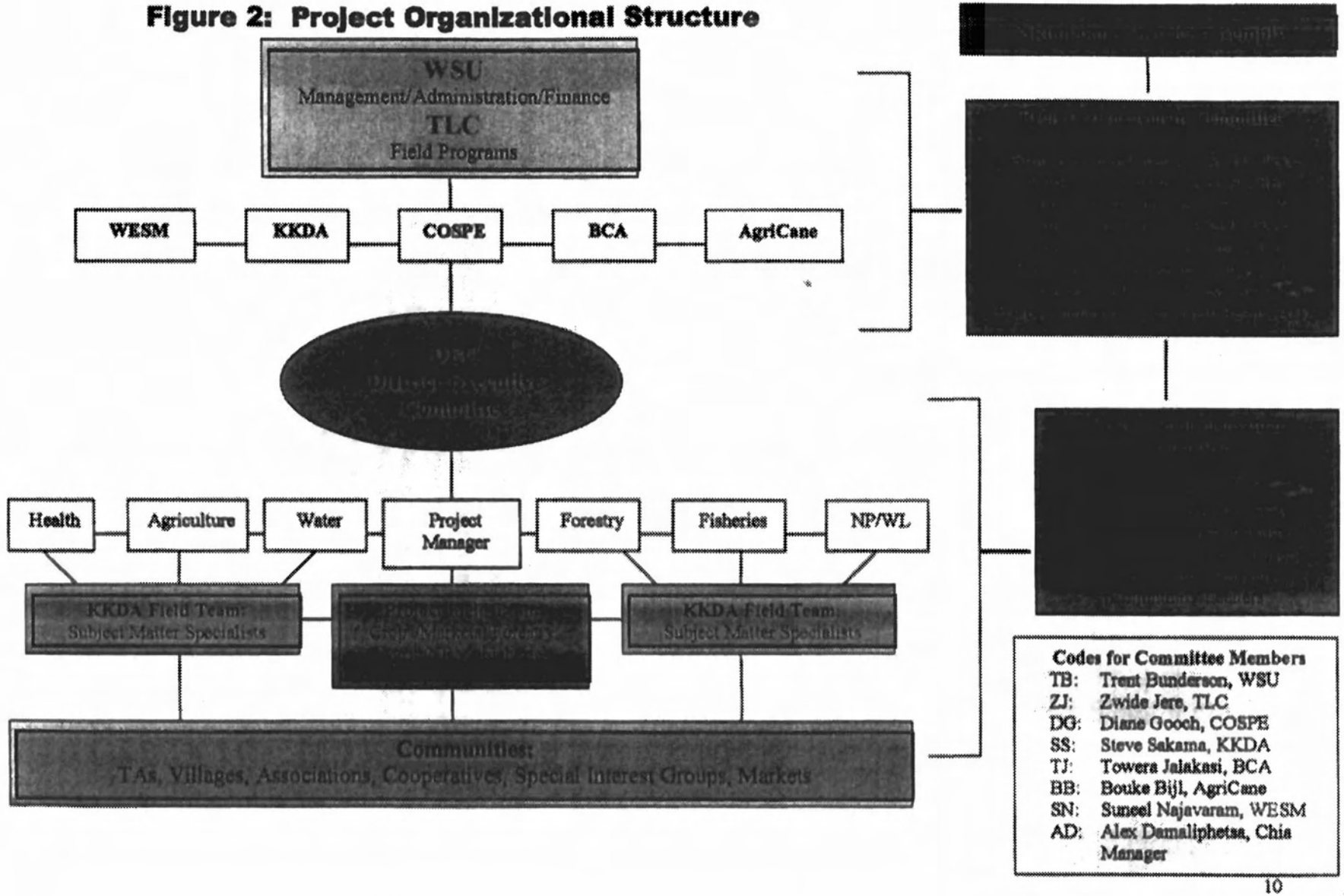
1. Project Management Committee
2. Project Implementation Committee, and
3. Community Committees

Project Management Committee (PMC)

The PMC comprises representatives from each alliance partner and project management to lead initiatives in their areas of specialization (see member composition, Figure 2). The Project Director, WT Bunderson (WSU) serves as the chair, with Z Jere (TLC) in charge of Field Programs, and D Gooch (COSPE) as the Communications Coordinator. The committee meets on the first Thursday and Friday of each month for the following functions:

- Overall coordination of the individual 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 the stated individual funding needs.
- Coordinating timely contributions from each partner regarding project financial and technical reports, workplans, budgets, workshops and field days.
- Communication between the partners, the Project 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.

Figure 2: Project Organizational Structure



Project Implementation Committee (PIC)

The PIC operates at the field level. Its members include the District Environmental Sub-Committee (DESC), the Project Manager, partner field representatives and the government and project field coordinators. The District Environmental Officer (S Sakama) chairs the PIC, with the Project Manager as executive secretary. All meetings are held at sites within the watershed to enhance the exchange of information and understanding among all parties about the diverse range of interventions and the implementing partners involved.

The PIC meets 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 PMC 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.

Community Committees (CCs)

CCs are being formed to provide designated focal groups at the community level to carry out and administer specific activities as indicated in the project workplan. Targeted communities elect respected and active members to represent the community's concerns and issues and to assist the project staff in the implementation, management and support for community participation of any proposed action. Already existing in the project area are Community Based Natural Resource Management Committees and Beach Village Community Committees.

The committees have responsibility for the following:

- Overseeing the development and enforcement of regulations to better manage the resources utilized by the community.
- Assisting in the dissemination of information and the introduction of sustainable and improved resource management technologies.
- Coordinating activities and trainings of the community with the district and project field coordinators.
- Developing by-laws to control the utilization of the natural resources in a sustainable fashion.
- Representing the needs and interests of community members to the government and project field staff.

In addition, community committees are vital in supporting economic initiatives for producing and processing agricultural and natural resource based products. The project will support the strengthening of these committees to become fully functioning organizational bodies that are legally registered and recognized as Community Associations and/or Cooperatives that promote

micro-enterprise development. These Community-based entities will have elected leaders fulfilling organizational/managerial roles and will be responsible to their members for:

- Financial management of the members' monies with full transparency to members on all monetary transactions.
- Accurate and up-to-date bookkeeping and regular reports on accounts.
- Dissemination of technical information to the members.
- Coordination of activities and trainings with members and project/partner field staff.
- Sharing information with other interested parties or communities.
- Management of market linkages and sales for both inputs and outputs.
- Over-all business administration in a transparent and conscientious manner.

Staff Recruitment

Positions for the project have been filled as follows:

- Project Manager – Alex Damaliphetsa who takes charge of project management with support from the Environmental District Officer.
- Agronomist/Marketing Specialist – Richard Museka who handles agronomic aspects of the agricultural based interventions/enterprises, natural resource management, farmer organization and marketing.
- Field Coordinator (Agriculture/NRM) – Edgar Bayani who is responsible for coordination of field activities in sustainable agriculture, natural resource management and enterprise development.
- Field Coordinator (Fisheries) – Vincent Kamwanya who coordinates activities with government field collaborators in co-management of fishery resources, community mobilization and fish farming.
- Field coordinator (Forestry) – Haiton Thungula coordinates activities related community organization, bye-law formulation, co-management of natural resources, agroforestry, tree ouplanting, etc.

Procurement of Project Equipment/Materials

The following were procured during the period:

	Item	Source	Unit	Quantity		Remarks
				Planned	Actual	
1	Vehicles					Vehicles were timely procured.
	4x4 Pick Ups	Local	#	3	3	
	Motor Cycles	Local	#	9	9	
2	Field Input/Supplies					Procurement of treadle pumps, inputs for irrigation, nursery & production ponds and beetle tanks is planned for the second semester.
	Agroforestry/Soil Cons					
	Tree Nurseries	Local	#	30	30	
	Vetiver Nurseries	Local	ha	3	3	
	Extenson/Training Materials sets	Local	#	60	60	
	Irrigation					
	Treadle Pumps/Assessories	Local	#	300	0	
	Extension/Input Packs	Local	#	300	0	
	Planting Mat. for Multiplication	Local	ha	10	25	
	Fisheries					
	Nursery & Production Fish Ponds	Local	#	6	0	
	Beetle Prop Tanks (hyacinth control)	Local	#	6	0	
3	Office/Field Equipment					Procurement of the remaining equipment and materials such as the high capacity desktop for GIS and satellite data will be done during the second semester.
	Desktop Computers	WSU	#	2	2	
	Office Furniture	WSU	# sets	2	2	
	Printers	Local	#	2	2	
	UPS	WSU	#	2	1	
	GIS Software					
	ArcView GIS Version 3.3	WSU	Set	1	1	
	ArcView Version 9.0	WSU	Set	1	1	
	MapInfo Professional Version 7.8	WSU	Set	1	1	
	GIS Hardware			1		
	Scan Plus IV Scanner	WSU	Set	1	1	
	DrawingBoard III Digitizer	WSU	Set	1	0	
	Global Positioning System GPS)	WSU	Set	6	6	
	Dell Precision Workstation Desktop	WSU	#	1	0	
	Remote Sensing Data/Images	WSU	Set	4	0	
	Computer consumables	Local	#	2	2	
	Fax Machines	Local	#	1	1	
	Photocopier	Local	#	1	1	
	Binder	WSU	#	1	0	
	Balance scales	Local	#	2	0	
	100m Tape measures	Local	#	3	0	

Collaboration with Partners, Key Stakeholders and Other Organizations

A major aim of the Project was to coordinate its programs with other interested parties and organizations active in the catchment area and with those who wish to share their experience and knowledge in the targeted sectors of intervention. 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. See **Annex 1** for full details.

Alliance Partners Annual Planning Meeting

At the initiation of the project in October, an alliance partners meeting was conducted in which each partner was introduced, their role within the project defined and discussion about the most effective organizational structure determined. All alliance partner members were present as well as representatives from each of the district sector departments, i.e., fisheries, agriculture, forestry, environmental affairs, water, parks and wildlife. An annual workplan and budget was produced with the participation and input of all partners and partner's staff present.

Stakeholder Meeting

A stakeholders meeting was held at the Capital City Hotel the beginning of February 2005 with over 70 people in attendance. The Chia Lagoon Watershed Project was officially announced and presented to all potential stakeholders. Comments, suggestions and the sharing of experiences and exploration of mutual areas of interest were promoted and examined. Representatives from the District Offices, the Ministries and Government organizations, Non-Government Organizations, National and International Programs, Donors and Private Sector were present.

Launching Ceremony

On February 16, 2005 the official launch of the Chia Lagoon Watershed Management Project was conducted at the Chia Primary School in Nkhotakota District. The Vice-President the Honorable Dr. Cassim Chilumpha was the honorary guest speaker. There were several thousand present from the surrounding communities, local government, national ministers and ministries, NGOs and private sector. The event was well covered by both the local and national media.

Meetings with USAID

Briefing meetings were held with representatives from USAID to explain and define donor policy, accounting procedures and reporting requirements. Project representatives have attended USAID synergy meetings for the up-dating of activities and exchange of information with other USAID–funded projects.

Briefing Meeting with the District Assembly

The Project was presented to the full District Assembly and the members agreed to give their complete support to the project to facilitate its implementation and success.

Collaboration with Other Organizations

As mentioned earlier, collaboration with various organizations has been established and/or is in the process of being determined and defined. At the present the organizations with which the Chia Project will be coordinating the activities, or is considering, are: SARRNET/IITA; Cheetah, NASFAM, Relay Consultants and Associates, Save the Children, USA; COMPASS II; FINCA; Water Aid/Malawi Water Supply and Sanitation Collaborative Council; Bunda College.

Field Results

This section highlights key results for this period under each result area. Picture illustrations of some of the project results are given in Annex 3.

Decentralization

The following have been achieved under this project result area during the last six months:

1. **Community Sensitization and Awareness**

◊ The project conducted several sensitization and awareness meetings in 90 villages involving 2,224 participants. The meetings covered topics on sector interventions, which included re-organization/re-activation of Village Beach Committees, Village Natural Resource Management Committees, irrigation, fish farming, mushroom production, bee keeping and overview of project objectives and approaches.

◊ The project conducted a tour for 12 members of the KKDA to project sites to appreciate the level of degradation of the Lagoon itself and parts of the watershed. Participants noted serious degradation within the project area and felt the need for action to address the problem. More tours of this nature are planned to expose local leaders and their subjects to the problems and challenges associated with poor land use practices.

2. **Improved CBNRM Structure and Organization**

The main focus was to revamp 47 existing Village Natural Resources Management Committees. This involved reorienting them on their responsibilities and how to demarcate and manage village forest areas. The project will also facilitate the formulation of bye-laws and constitutions on managing village forest areas, closed fishing seasons, use of appropriate fishing gear, designation of fish breeding sanctuaries and streambank protection.

3. **Staff training**

Highlights of courses conducted for district and project staff are:

◊ 2 project and 3 district staff attended a training course in appreciative inquiry which was conducted by COMPASS II in Mzuzu.

◊ 21 field technicians, 4 project personnel and 4 district staff attended a 4-day training course in small-scale irrigation facilitated by TLC with the Land Resource Center. Topics covered included treadle pump use and maintenance, plot layout, canal layout and construction for stream diversion and community-based extension approaches.

◊ 2 project personnel and 2 field coordinators attended a 2-day training course in conservation farming at Bazale EPA in Balaka. The training was organized by the Department of Agricultural Research and Technical Services (DARTS) in the Ministry of Agriculture in partnership with CYMMIT. The project will participate in demonstrating the technology with 10 farmers in Mwansambo EPA. Presentations were made on plot layout, land preparation, methods of planting, soil conservation, fencing, and the management of crop residues, soil fertility and pests.

Community-Based NRM

1. Improved management of the Chia land and forest resources

The following were the major achievements made during the period:

- A total of 143,364 tree seedlings were raised in 40 nurseries over 13 VNRMCs, representing 72% of the targeted numbers for this season. The low achievement is due mainly to the late start of the project in relation to needs for nursery preparation. Results will greatly improve in the coming season as there will be adequate time for proper planning and mobilizing communities.
- By the end March 2005, a total of 59,037 trees were outplanted, representing 30% of the annual target and 41% of total seedlings raised. Trees were planted in communal woodlots, around homesteads, along roads and streambanks and on farm land. As the figures show, the achievement in terms of trees outplanted is quite low. Although rains started early, most seedlings were still too small to be outplanted as they had been raised late. This problem was compounded further by a prolonged dry spell during the months of January and February. Conditions were generally too dry to plant trees, but advice was offered to farmers to plant the remaining nursery seedlings along stream banks where residual soil moisture was still present, and around homesteads or irrigated fields where they could can be watered easily.
- A total of 7 vetiver grass nurseries were established covering 0.57 hectares. In addition, 0.7 hectares were planted with vetiver grass hedges in Mwansambo EPA.
- 10 farmers were identified in Mwansambo EPA to participate in demonstrating conservation farming. This program will be implemented in partnership with DARTS and CYMMIT.

2. Improved management of Chia Lagoon fishery resources

The following results were achieved:

- Reactivation of 8 Beach Village Committees (BVCs) around Chia Lagoon with a total membership of 353 (265 male and 88 female).
- Field appraisals for pond construction in 3 sites under Mwansambo EPA.
- Construction of 5 fish ponds covering a pond area of 1,230 m^2 which will benefit 5 households. The project is arranging to source fingerlings from the World Fish Centre at Domasi. Farmers will pay the full market cost of the fish. Plans are being made to set up revolving funds for fish farming schemes to help sustain activities in the long run.

3. Co-Management of Natural Resources

The project has identified two pilot sites that fall within the border zone of the Nkhotakota Wildlife Reserve. These include Bamba which falls within the project impact area and Mbewa which is outside the project area. The objective is to assist KKDA in developing an approach for coordinated CBNRM. The project will work with COMPASS II and the other stakeholders at the KK District level.

The project will also test a new approach in the co-management of natural resources at the village/community level. The approach involves formation of a Village Natural Resource Management Association (VNRMA) as the umbrella organization to oversee the management and utilization of all natural resources within a village. The VNRMA will have powers to oversee and provide direction to special interest groups within the village to utilize and manage the resources for income and other uses on a sustainable basis. The present structure of the Village Natural Resource Management Committees (VNRMCs) limit the portfolio of these structures to management of village forest areas only. In addition, VNRMCs are viewed as a group of a few individuals in a village representing their own and government's interests.

The project has re-organized the communities in the two villages and with the support of COMPASS II will carry the following activities in the next months:

- Train field workers in appreciative inquiry, an assets-based approach to development which capitalizes on peoples' capabilities, skills and resources rather than focusing on problems and support from outside.
- Conduct a participatory/community-based resource mapping/inventory/quota setting of the area using GPS and other tools.
- Train communities in the formulation of bye-laws and constitutions and their enforcement.
- Guide/facilitate communities in registering their organizations with the Registrar General.
- Facilitate development of community-based management plans.

Sustainable Agricultural Practices

1. Crop diversification

The main achievement under this result area was the purchase of 2,000 kg of certified Kilombera rice seed from Domasi Scheme in Zomba, which was issued to farmers at an Lifuliza Irrigation Scheme. A total of 23 hectares had been grown with this variety. Although the price of seed was MK30/kg, farmers agreed to repay the seed loan at the rate of MK65/kg. This is meant to build a revolving fund account so that more seed can be bought in the coming season to allow participation by more farmers.

2. Multiplication of improved planting material

- A total of 188 improved banana suckers were bought from Bunda College and issued to farmers. The objective is to multiply the variety for distribution to other farmers within the project sites. More improved materials will be distributed in the coming season.
- 166 bundles of Manyokora cassava variety were planted for multiplication covering an area of 1.76 hectares. The material was sourced from Mitundu in Lilongwe with the assistance of the Southern Africa Roots Research Network (SARRNET). In addition, 0.47 hectares of the bitter variety were planted from locally sourced improved materials.

3. **Winter irrigation**

The project achieved the following:

- Assessed 8 sites in the Mwansambo and Linga areas, 6 of which have high potential. Detailed assessment of these sites is planned for the second semester.
- The project facilitated formation of 15 irrigation clubs which will be issued with treadle pumps and input packs in April using the TLC extension approach.
- In partnership with Cheetah, the project issued 88 certified paprika seed packs to 88 households who will raise paprika seedlings for irrigated production. Farmers have shown great interest in this crop as the returns and market demand are good if standards of quality are maintained.
- The project is also exploring the potential of rehabilitating the Mpamantha irrigation scheme. The scheme is managed by the Chamwavi Group of Companies which has been approached to consider rehabilitating the scheme and its smallholder organization based on arrangements to be worked out between KKDA and the Scheme management.

Enterprise Development

The main activities carried out were sensitization, training and organization of communities interested in winter irrigation, honey and mushroom production. A total of 138 potential irrigation farmers were trained by BCA in group dynamics and leadership. In addition, WESM was involved in assessing the potential of Mbambala River for eco-tourism.

Monitoring Ecosystem Dynamics in relation to Landuse

The following activities were carried out during the period:

- The major focus was to conduct a hydrographic survey of the lagoon carried out by staff from the KKDA Water Department, the Ministry of Water Development and the Department of Surveys. The objective was to establish the depth of the lagoon which has been subjected siltation from run-off. Despite the significance of the watershed, no such survey has ever been carried out on the lagoon. The information will be used as a benchmark against which to assess change over time due to project interventions. The survey involved taking of soundings from a well equipped boat along survey lines over the entire body of water. An echosounder built in the boat was used to measure depths at appropriate intervals along the survey lines as determined by the survey team. The survey lines extended onto land from the lagoon fringes up to a predetermined elevation.
- A preliminary landuse and environmental degradation assessment of the area showed a high risk of degradation due to tobacco production, especially flue-cured estate tobacco. The study further showed a relatively moderate level of degradation within the project area compared to the Ntchisi part of the catchment, where there is need for urgent action.

PLAN OF WORK FOR APRIL-SEPTEMBER 2005

Annex 2 shows activities planned for the second semester, April – September 2005.

Annex 1: Collaboration with Partners and Other Organizations

Partner Alliance	# of Meetings	Highlights of Content and Subject Matter of Meetings/Collaboration (combined across meetings)	Participation			
			Depts Present	Names of Partners Present	# District Officers	# Extension Staff
Full District Assembly	1	Project Briefing of District Assembly		KKDA	78	
				TLC		
				WESM		
				COSPE		
				BCA		
				AGRICANE		
Stakeholders Meeting	1	Chia Lagoon Project was officially presented to all potential stakeholders . Comments, suggestions an the sharing of lessons learned an exploration of mutual areas of interest were examined.	District Officers	TLC		
			District TAs	WESM		
			Gov't. Ministries	KKDA		
			Gov't Organizations	AGRICANE		
			NGOs	COSPE		
			National & International Programs	BCA		
				AGRICANE		
			Private Sector			
Launch	1	Several thousand attended the official launch of the project at Chia Lagoon. The Vice-president Honorable Dr. Cassim Chilumpha was guest speaker.	District Officers	KKDA		
			District TAs	TLC		
			Gov't. Ministries	WESM		
			Gov't Organizations	COSPE		
			NGOs	BCA		
			National & International Programs	AGRICANE		
			Private Sector			
Alliance Partners	1	Developed the 2004-2005 annual budget and workplan	Community Dev'l	TLC	11	4
			Forestry	WESM		
			Fisheries	KKDA		
			Agriculture	AGRICANE		
			Parks and Wildlife	COSPE		
			Environmental Affair	BCA		
				AGRICANE		

Partner Alliance	# of Meetings	Highlights of Content and Subject Matter of Meetings/Collaboration (combined across meetings)	Participation			
			Depts Present	Names of Partners Present	# District Officers	# Extension Staff
Project Management Committee (PMC)	2	The PMCs looked discussed the following issues: 1. the project setup and partner roles 2. inter-partner communications 3. disbursement of funds, equipment and other resources 4. financial and technical management and reporting requirements 5. priorities and responsibilities for field activities 6. linkages between the partner alliance 7.collaboration with other parties / organizations in the area 8. evaluation of field activities in progress		TLC WESM KKDA AGRICANE COSPE BCA AGRICANE		1
Project Implementation Committee (PIC)	2	1. Presentation and review of sectoral activities in project area 2. Sectoral roles and responsibilities in the implementation of project activities 3. Arrangements for logistical support to sectors 4. Workplanning of project activities (monthly, quarterly)	Community Dev'l Forestry Fisheries Environmental Affair Water Parks & Wildlife Community Dev'l NASFAM	TLC WESM KKDA		
District Environmental Sub-Committee (DESC)	8	1. Review and updating of DSOER 2. Presentation & review of progress reports on sectoral activities 3. Workplanning of environmental activities and mode of implementation	Agriculture Forestry Fisheries Environmental Affair Water Parks & Wildlife Community Dev'l Education WESM NICE NASFAM Health District Assembly Meteorology	KKDA TLC WESM	24	4
USAID	3	1.Briefing on policy, accounting formats and reporting requirements. 2. Attending synergy meetings with other USAID funded project representatives, exchange of ideas and updating of activities.		TLC COSPE		

Collaborating Organizations	# of Meetings	Highlights of Content and Subject Matter of Meetings/Collaboration (combined across meetings)	Participation	
			Persons Attending	Agreements Reached on Nature of Collaboration
SARNET/IITA	5	Met with full SARNET staff involved in cassava/sweet potato production and processing for preliminary information about their work in the KK district. Two joint visits made to the SARNET cassava starch processing plant in KK district to assess potential for developing a joint plan of action for collaboration in the Chia catchment area.	Nzola Mahungu Vito Sandifolo Alex Nthonyiwa Chris Moyo Dyton Siyeni Towonge Chadzala Sella Jumbo Albert Mhone Trent Bunderson Zwide Jere Diane Gooch Towera Jalakasi Richard Museka Edgar Bayani Alex Damaliphetsa	Possible areas of collaboration with MoU to be signed: 1. Conduct an assessment of the Chia catchment area to identify suitable sites for low-cost cassava/sweet potato processing facilities 2. Identify access to improved high yielding, disease resistant planting materials, appropriate for diverse value-added processing 3. Market analysis and development 4. Information sharing and joint field visits
CHEETAH	3	Two preliminary meetings to discuss common areas of interest and what collaboration/cooperation might be possible. Joint field visit to assess the area and possible sites in the Mwansambo area appropriate for paprika production under irrigation.	Christian Dohse Trent Bunderson Zwide Jere Diane Gooch Richard Museka Alex Damaliphetsa	Will initiate the program with the establishment of 100 paprika nurseries. For next season will identify appropriate sites for the production of irrigated paprika. Cheetah will provide extension materials and training of trainers for proper agronomic practices for quality paprika.
NASFAM	3	NASFAM is opening offices in KKD and is targeting the 3 EPAs in the Chia catchment area. Crops they will be focusing on are: Kilombero Rice, Groundnuts and Birdseye Chili.	Duncan Warren Trent Bunderson Zwide Jere Diane Gooch Alex Damaliphetsa	A follow-up meeting of stakeholders is to be held in which a work plan will be developed and an MoU will be drawn up.
Relay Consultants & Associates	3	Two site visits and one office meeting to explore the possibility of low-cost value added agro-processing.	Njoki Wainaina Zwide Jere Diane Gooch	Will be consulting with Relay Consultants to identify appropriate low-cost agro-processing technologies.

Collaborating Organizations	# of Meetings	Highlights of Content and Subject Matter of Meetings/Collaboration (combined across meetings)	Participation	
			Persons Attending	Agreements Reached on Nature of Collaboration
Save the Children, USA	3	Discussed possibility of accessing NAC funds for the Chia catchment area as SAVE is the umbrella organization for NAC in the KKD. Has been confirmed that SAVE is working in the Chia area and we can proceed to develop a proposal for the health component in coordination with SAVE.	Express Moyo Alick Mbewe Diane Gooch	Will meet to discuss how to collaborate and develop a coordinated proposal for NAC funding for some of the Chia project health components. Will work to support and strengthen on-going Ministry of Health and Red Cross programs, targeting the Chia catchment area.
Compass II	2	Have met with COMPASS II to discuss ways of coordinating project activities in the KKD. COMPASS will focus on the areas outside the Chia Catchment area. Consistent & complimentary messages and activities will be implemented. Common areas of activity are: CBNRM, Forestry, Wildlife and Fisheries. The 2 projects will coordinate for the GIS resource mapping and support for the development of the co-management structure/organization of the Nkhotakota Game Reserve.	Todd Johnson John Dickinson Trent Bunderson Zwide Jere Diane Gooch	A MoU to be written and signed
	1	Appreciative Inquiry Workshop	Alex Damaliphata Victoria Kambalame	A workshop that was attended by project and district staff. Participants will conduct training of the staff who did not attend with over-sight assistance from COMPASS
FINCA	2	Have met to discuss possibility of coordinating with their program to offer a rural credit and loan scheme in the Chia catchment area.	Jonathan Kamin Trent Bunderson Zwide Jere Diane Gooch	Met with a representative from the Washington office to determine if it is appropriate for a collaboration in the area and to develop a joint proposal for potential funding from Phillip Morris.
WSU/Bunda College	2	Developed a proposal for collaboration with WSU, Bunda College and Total Land Care for bean/cowpea production	Trent Bunderson Carol Miles Charles Mabangane	Bunda College and WSU will collaborate with TLC in the following manner: 1. Multiply Kalima seed during the winter/irrigated season in 2006 and evaluate seed quality 2. Evaluate and compare the efficacy of winter/irrigated and rain-fed bean seed production of 3 newly released CRSP varieties in 2006-2007 3. Multiply seed of two newly released sugar bean varieties during the winter/irrigated season in 2006 and evaluate seed quality

Annex 2: Chia Project Plan of Action, April - September 2005

	ACTIVITY	TIMEFRAME 2005						Responsible Party
		Apr	May	Jun	Jul	Aug	Sep	
1.0	**Decentralization and Effective Devolution of NDA**							
1.1	Form/strengthen community-based structures							
	Village Natural Resource Mngt Committees (VNRMC)							NDA-Forestry
	Village Beach Committees (VBC)							NDA-Fisheries
	Bee Keeping Clubs							NDA - NPWL
	Irrigation Clubs							NDA-Agric
	Fish Farming Clubs							NDA-Fisheries
	Small Wild Animal Club							NDA-NPWL
	Environmental/Wildlife Clubs							WESM
	Tour Guide Clubs/Associations							WESM
	Community Associations/Cooperatives							BCA
1.2	Facilitate exchange visits/dialogue between communities							NDA
1.3	Organize & manage awareness campaigns and environmental rallies							WESM
1.4	Strengthen linkages/communication between ward councillors, TAs, MPs, & communities							COSPE
1.5	Support policy & bye-law formulation/reform to regulate use and management of natural							NDA/TLC
1.6	Support establishment of community-based revolving funds/credit schemes							NDA/TLC
2.0	**Improved Capacity for Community-Based NRM**							
2.1	Facilitate participatory resource & problem analysis							NDA/WESM
2.2	Facilitate development of community action plans							NDA/WESM
2.3	Develop an environmental action plan for the area							NDA/WESM
2.4	Facilitate development of environmental micro-projects							WSEM
2.5	Improved CB Management of Chia Land/Forest Resources							
	Evaluate potential, and facilitate where appropriate, the transfer of rights and access for NRM from Govt to local communities through co-management agreements							NDA-NPWL
	Support establishment of community tree nurseries							NDA-Forestry
	Provide technical support in tree outplanting & mangt; bamboo planting; regeneration/protection of natural woodlands & streambanks; improved wood stoves							NDA-Forestry
2.6	Improved CB Management of Chia Water Resources							
	Identify and prioritize river hot spots							WSEM
	Support communities in river / streambank restoration activities							NDA-Forestry
	Construction of shallow wells							NDA-Water
2.7	Improved CB Management of Chia Fisheries Resources							
	Support communities to control water hyacinth through physical & biological methods							NDA-Fisheries
	Designate sanctuaries to protect important fish breeding/nursery grounds							NDA-Fisheries
	Support building of CB nurseries & production ponds for aquaculture							NDA-Fisheries

Annex 2: Gaza Project Plan of Activity, April - September 2006

	ACTIVITY	TIMEFRAME 2006						Responsible Party
		Apr	May	Jun	Jul	Aug	Sep	
3.0	Sustainable Agricultural Practices							
3.1	Crop Diversification							
	Assess alternative/viable crops							AgriCare
3.2	Small-scale irrigation							
	Evaluate irrigation potential in the area and design appropriate interventions							AgriCare
	Provide extension support with irrigation equipment and inputs to club members							TLC
	Stream diversion - support, tools							TLC
	Water harvesting/storage ponds (mechanical)							TLC
3.3	Soil & Water Conservation/Conservation Farming							
	Provide technical support in contour farming, conservation farming & gully control							NDA-Agric/TLC
3.4	Agroforestry Practices							
	Provide technical support in soil fertility interventions, compost making & rotations							NDA-Agriculture
	Support communities in promotion of agroforestry practices							TLC
4.0	Enterprise Development							
4.1	Evaluate / develop enterprises							
	NRM-based products:							
	Timber/fuel production							BCA
	Local bamboo for construction and craft making							BCA
	Grasses for thatching							BCA
	Bee keeping & honey processing and marketing							WSEM
	Cane rat farming							BCA
	Guinea fowl farming							BCA
	Eco-tourism (e.g., bird/game viewing, hiking/camping, fishing, boats, hides etc)							WSEM
	Agro-based Products							
	Support development of micro-irrigation of high value crops							BCA
	Agro-processing of cassava, sweet potato, g/nuts, horticultural crops, fruits, rice etc							BCA/AgriCare
	Sugarcane outgrower scheme with Dwarsiwa Cane Growers Limited							BCA/AgriCare
	Selling of fingerlings and fish produced in community ponds							BCA
4.2	Conduct market research							BCA
4.3	Facilitate market linkages							BCA
4.4	Promotion of finished products							BCA
4.5	Support formation of business associations/cooperatives							BCA/CCSPE
4.6	Support development of a market information system							BCA
4.7	Provide technical support in financial and business administration							BCA

Annex 2: Chia Project Plan of Action, April - September 2005

	ACTIVITY	TIMEFRAME 2005						Responsible Party
		Apr	May	Jun	Jul	Aug	Sep	
5.0	**Training**							
5.1	Train community leaders and staff in NRM related Acts/Policies	■	■					NDA
5.2	Train community leaders in by-law/constitution formulation and enforcement	■	■					NDA
5.3	Train staff in sustainable use, co-management of natural resources and GPS, conservation	■	■					NDA
5.4	Train communities in specific sector interventions							
	Agroforestry, soil conservation/conservation farming	■	■					TLC
	Nursery management, tree & bamboo outplanting, improved wood stoves, solar cookers	■	■					TLC
	Small-scale irrigation systems	■						TLC/AgriCare/NDA
	Shallow well operation & maintenance	■	■	■	■	■	■	NDA Water
	Management of revolving funds	■	■	■	■	■	■	BCA
	Ecological sanitation	■	■					WESM
	Sustainable agronomic practices	■	■	■	■	■	■	NDA-
	Bee keeping	■						NDA-NP/WESM
	Guinea fowl and cane rat farming	■						NDA-NP/WESM
	Eco-tourism/tour guiding		■					NDA-NP/WESM
	Fish farming	■	■	■				NDA-Fisheries
	Sustainable fishing methods and fish processing	■	■	■				NDA-Fisheries
5.5	Training in basic business and marketing skills	■	■	■				BCA
5.6	Development of Extension Materials across all the above areas	■	■	■	■	■	■	Alliance
6.0	**Monitoring & Evaluating Project Activities & Impacts**							
6.1	Produce base maps of the area using GIS	■	■	■				TLC
6.2	Conduct land use/cover change analysis using satellite data and API		■	■	■			TLC-AgriCare
6.3	Identify "hot spots" in the watershed to prioritize interventions			■	■			TLC-AgriCare
6.4	Conduct hydrographic survey of the Lagoon			■				NDA-Water
6.5	Carry out water quality analysis of the Lagoon	■	■			■	■	NDA-Water
6.6	Establish new water level gauging stations		■	■				NDA-Water
6.7	Monitor water flow/level in designated rivers and the lagoon	■	■	■	■	■	■	NDA-Water
6.8	Conduct framework for fishing gear and boats							NDA-Fisheries
6.9	Collect data on fish catches and fish marketing/prices	■	■	■	■	■	■	NDA-Fisheries
6.10	Support communities in enforcing by-laws in CBNRM	■	■	■	■	■	■	NDA
6.11	Facilitate CBM&E surveys to evaluate progress/results							TLC
6.12	Design and produce database on adoption of interventions/NRM practices by villages/area	■	■	■				TLC
6.13	Project Management Committee Meetings	■	■	■	■	■	■	COSPE
6.14	Project Implementation Committee Meetings with DESC	■	■	■	■	■	■	NDA
6.15	Produce monthly financial reports	■	■	■	■	■	■	WSU
6.16	Produce quarterly progress reports	■			■			WSU
6.17	Conducting surveys + producting State of Environment report				■	■	■	NDA
6.18	Annual Review and Planning Meeting					■		COSPE
6.19	Produce annual report						■	WSU
6.20	Produce 2005-06 annual workplan						■	WSU

Annex 3: Picture Illustrations of Project Highlights

Clear waters on Chia Lagoon outlet before rains

Chia Lagoon outlet after rains

Vice President Cassim Chilumpha officially opening the project

Part of the crowd that witnessed the launching ceremony

A well constructed fish pond ready for stocking with fingerlings

A fingerling production pond

Healthy seedlings ready for outplanting

A newly planted communal woodlot