

# LAKE CHILWA BASIN CLIMATE CHANGE ADAPTATION PROGRAMME

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## IMPLEMENTATION STRATEGY FOR 2012

**Revised Version**

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## EXECUTIVE SUMMARY

The third year of implementation of the Lake Chilwa Basin Climate Change Adaptation Programme (LCBCCAP) will focus on consolidating the gains made in the first two years and supporting initiatives that are deemed to sustain achievements beyond the life-span of the Programme. Institutions and individuals that were trained in climate change in 2012 will be supported to transfer their knowledge and skills to others through training and other awareness-raising initiatives including community exchange programmes, discussion forums, radio and television programmes and documentaries. Collaboration with University of Agder of Norway, Royal Norwegian Embassy (RNE) partners, the Ecosystem Services for Poverty Alleviation (ESPA) Consortium and other climate change programmes and stakeholders within and outside the basin will be enhanced through joint planning and implementation of activities and sharing of knowledge and experiences on climate change.

Household and enterprise adaptive capacity shall be enhanced through provision of resources for scaling up practical climate change adaptation initiatives, which include conservation agriculture, value addition and marketing of fish, rice and pigeon peas, and Bilharzia control.

Climate change mitigation shall be undertaken through promotion of best-bet mitigation options such as fruit trees production, afforestation and forest management operations to reduce fire hazard and other illegal forest activities in critical sites. In addition, energy-efficient sources such as solar, briquettes and fish-smoking kilns shall be promoted to reduce the pressure on forest resources.

The Programme has planned to enhance communication of climate change messages through radio and television. This has necessitated the procurement and installation of radio and television programming equipment and construction of a training unit which act as the base for the broadcasting station and a centre for sharing knowledge and experiences on climate change.

A mid-term evaluation shall be conducted to assess the impact made by the Programme in the first 2.5 years and provide direction on management and implementation arrangements including areas for prioritization and approaches.

To effectively implement these activities, the Programme shall require a total of NOK6,809,887 of which NOK6,242,000 shall be sought from the development partner while NOK569,052 shall be brought down from unspent funds of the 2011 budget.

## Acronyms and Abbreviations

AIDS	Human Immuno-virus Deficiency Syndrome
CC	Climate Change
CCA	Climate Change Adaptation
CCAP	Climate Change Adaptation Programme
DANIDA	Danish Agency for International Development Assistance
EFST	Efficient Fuel-saving Technology
FRIM	Forestry Research Institute of Malawi
GIS	Geographical Information System
Ha	Hectare
HIV	Human Immuno-virus
IGA	Income Generating Activity
Km	Kilometre
LCB	Lake Chilwa Basin
LCBCCAP	Lake Chilwa Basin Climate Change Adaptation Programme
LEAD SEA	Leadership for Environment and Development Southern & Eastern Africa
M & E	Monitoring and Evaluation
MACRA	Malawi Communications Regulatory Authority
MES	Master in Environmental Science
MoV	Means of Verification
MSc	Master of Science
NAPA	National Adaptation Programmes of Action
NASFAM	National Smallholder Association of Malawi
NGO	Nongovernmental Organisation
NOK	Norwegian Kroner
NORAGRIC	Agricultural University of Norway
NRM	Natural Resources Management
OVI	Objectively Verifiable Indicator
PES	Payment for Ecosystem Services
PhD	Doctor of Philosophy
REDD	Reducing Emissions from Deforestation and forest Degradation

TV	Television
US\$	United States Dollar
VCA	Value-Chain Analysis
VNRMC	Village Natural Resources Management Committee
WALA	Wellness for Agriculture and Livelihoods Advancement
WorldFish	WorldFish Center

## **1. INTRODUCTION**

### **1.1 BACKGROUND**

The Lake Chilwa Basin Climate Change Adaptation Programme (LCBCCAP) is a five-year programme jointly implemented by Leadership for Environment and Development Southern & Eastern Africa (LEAD SEA) based at Chancellor College, WorldFish Centre (WorldFish) and Forestry Department through the Forestry Research Institute of Malawi (FRIM). Financial support is provided by the Norwegian Government that has committed a total of NOK35 million towards implementation of the programme through a Financing Agreement that was signed by the Minister of Finance and the Norwegian Ambassador to Malawi on 8th December 2009 on behalf of the Government of the Republic of Malawi and the Norwegian Ministry of Foreign Affairs, respectively. The implementation period is from 1st January 2010 to 31st December 2014.

### **1.2 GOAL**

The overall goal of the programme is to secure the livelihoods of 1.5 million people in the Lake Chilwa Basin and enhance resilience of the natural resource base. The programme aims to achieve this goal through the development and implementation of basin-wide climate change adaptations in support of the Malawi National Adaptation Programmes of Action (NAPA) that will enhance the capacity of communities to adopt sustainable livelihood and natural resource management practices.

### **1.3 OBJECTIVES**

The Programme aim is to achieve the following objectives by December, 2014:

- (a) To strengthen local and district institutions to manage natural resources sustainably and build resilience to climate change;
- (b) To facilitate and help build cross-basin and cross-sector natural resource management and planning for climate change throughout the Basin;
- (c) To improve household and enterprise adaptive capacity through technical and material support of practical adaptation projects and activities in Basin hotspots; and
- (d) To mitigate the effects of climate change through improved forest management and governance.

### **1.4 IMPACT AREA**

Programme activities will be implemented in 10 selected hotspots in the Lake Chilwa Basin comprising villages from 13 Traditional Authorities in the three districts of Machinga, Phalombe and Zomba (Table 1).



**Table 1: LCBCCAP Impact Areas**

No.	Hotspot	TA/STA	District
1	Chikala Hills-Mposa beach, Linguni & Zumulu River Catchments	Chamba and Mposa	Machinga
2	Nacala Corridor-Namanja Beach & Mpiri River Catchment	Mlombwa and STA Kawinga	Machinga
3	Mpoto lagoon-Sombani River-Swang'oma beach & Njalo Island	Chiwalo	Phalombe
4	Chitekesa - Nambazo Stretch	Jenala	Phalombe
5	Mikongoloni hill-Chisengeleni River	Jenala	Phalombe
6	Michesi Forest Reserve & Phalombe River bank	Jenala, Kaduya, Mkhumba and Nazombe	Phalombe
7	Malosa Forest Reserve and Domasi River	Malemia	Zomba
8	Zomba Mt Forest Reserve-Likangala River, Zilindo & Namadidi settlements	Mlumbe	Zomba
9	Lake Chilwa (Zomba side)-Chisi Island, Kachulu and Mchenga beaches	Nkumbira	Zomba
10	Ngwelero EPA-Chimbeta/Steven/Masale Sections	STA Ngwelero	Zomba

### 1.5 TARGET BENEFICIARIES

The primary beneficiaries of the Programme are local communities dwelling in selected villages within the hotspots. In addition, local and district institutions dealing in environment and natural resources management will benefit from capacity building programmes provided by the programme. The Programme will also support partner institutions with resources to enhance their capacity to deliver essential services to the communities so as to enhance their resilience and adaptation to climate change.

### 2. PLANNED ACTIVITIES

The Programme will continue to implement activities from the previous year with slight modifications on targets and approach in line with community demands and stakeholder expectations.

## **2.1 PERSONNEL**

All staff shall be maintained within the full-time and part-time arrangements as per Programme design. Staff salaries and compensation for part-time will be increased by 5 percent to cushion against the rising cost of living.

## **2.2 PLANT, VEHICLES AND OFFICE EQUIPMENT**

The Programme will not spend on capital investments, having procured the required plant and equipment in the first 2 years.

## **2.3 ADMINISTRATION AND MANAGEMENT**

### **2.3.1 Oversight**

Programme oversight shall be provided by the Steering and Management committees, which have been instrumental in providing policy and technical direction, respectively, in implementation of Programme activities. Meetings have been planned at which Programme partners shall interface with these committees.

### **2.3.2 Coordination**

Overall Programme coordination will be done by LEAD Southern and Eastern Africa with technical support from WorldFish Centre. Each of these coordinating institutions shall be allocated US\$35,000 for administration and management as per contract agreement with the development partner.

### **2.3.3 Office Operations**

The Programme Office will facilitate implementation of day-to-day office and field activities including banking, maintenance of office plant, vehicles and equipment, procurement of materials and enhancing effective communication among stakeholders through organisation of forums for discussion (e.g. meetings and workshops) and monitoring and evaluation.

## **2.4 SUMMARY OF PLANNED ACTIVITIES**

The Programme shall implement activities in fulfilment of each of the 4 main objectives:

### **2.4.1 Objective 1: Capacity of Local and District Institutions to Plan, Implement and Monitor Integrated Climate Change Adaptations Increased**

- 2.4.1.1 Training shall be conducted to 150 representatives of area and village development committees and community-based networks to increase their capacity to plan, implement and monitor climate change adaptations initiatives at the local level;

- 2.4.1.2 Ten Village Natural Resources Management Committees shall be formed, trained and registered with their district councils. These will act as leaders and agents of change for environment and natural resources management in their areas of jurisdiction; and
- 2.4.1.3 A training unit for climate change studies shall be established at Chancellor College to cater for the growing need for learning space at the College. The unit shall serve as a special room for administering tailor-made climate change and adaptation mitigation courses to district and local institutions .

#### **2.4.2 Objective 2: Integrated Plan for Lake Chilwa Basin Hotspots Developed and Implemented**

The Programme will implement activities aimed at improving household and enterprise adaptive capacity through technical and material support of practical adaptation projects :

- 2.4.2.1 Fifteen women fish trading groups along Lake Chilwa beaches will be supported with 5 solar fish dryers and 4 fish smoking kilns. They will also be trained in value addition and marketing to increase their income-generating potential and hence improve their resilience to climate change impacts such as drought;
- 2.4.2.2 The Programme will conduct a post mortem evaluation of the prevalence rates in the five villages and five schools in Zomba that took part in the prevalence investigations in 2011 as a way of assessing the effectiveness of treatment provided and investigating reasons for re-infection. In addition, a Bilharzia prevalence study will be conducted in Machinga and Phalombe, which were not covered in 2011, followed by treatment in a bid to reduce vulnerability of households to the debilitating effects of Bilharzia, which is compromising people's health and hence reducing their productivity to implement climate change adaptations;
- 2.4.2.3 Agricultural production will be boosted through material and technical support to 100 smallholder farmers to undertake drip irrigation on an estimated 10 hectares in areas that were severely hit by drought in 2011; and
- 2.4.2.4 The application for radio and television license will be pursued with the Malawi Communications Regulatory Authority (MACRA) in parallel with procurement and installation of the required equipment for broadcasting the programmes. A total of 54 radio programmes shall be produced and broadcasted by the Programme in collaboration with MBC and other media institutions building upon the successes of 2011.

### **2.4.3 Objective 3: Household and Enterprise Adaptive Capacity Improved through Practical Adaptation Measures**

- 2.4.3.1 Areas vulnerable to climate change impacts will be mapped and used for targeting of Programme support in form of community projects. Six maps will be developed, each focussing on a specific theme;
- 2.4.3.2 The capacity of small-scale fish, rice and pigeon pea producers and traders to access markets will be enhanced through organisation, training in business management, and value addition. The producer and trader groups shall be linked to markets, micro-finance institutions and other business management service providers. These initiatives are expected to increase the value of fish and rice sales by 100 percent;
- 2.4.3.3 Two exchange visits shall be conducted to enhance community-to-community learning and sharing on practical knowledge and experiences on climate change mitigation and adaptation;
- 2.4.3.4 The Programme will work towards reviving hydro electricity generation on Mulunguzi River by facilitating development and technical review of designs for a mini hydro electricity power station. The preferred design will be used for developing proposals for the mini hydro electricity power station.

### **2.4.4 Objective 4: Impacts of Climate Change Mitigated through Improved Forest Management and Governance**

- 2.4.4.1 Best-bet mitigation options including fruit tree production (of mangoes and citrus fruits) shall be promoted among hotspot communities in the basin;
- 2.4.4.2 Reforestation and forest management operations including tree planting, fire management and checking of illegal activities shall be up-scaled in fragile sites including Zomba Mountain Forest Reserve, along river banks and in habited areas. Basin communities will be supported with inputs and training to raise, plant and manage 375,000 seedlings. An incentive scheme on community engagement in plantation forestry and conservation of natural forests shall be piloted on 100 ha in and around Zomba Mountain Forest Reserve. Fire control measures shall include construction of 2 fire towers and provision of fire fighting equipment to fire-fighting gangs. These initiatives are expected to reduce the incidence of illegal forest activities by 25 percent from the 2011 figures;
- 2.4.4.3 A total of 175 smallholder farmers shall be identified, trained and supported with inputs to undertake conservation agriculture on an estimated 35 hectares of land. Baseline soil properties and productivity of each field shall

be determined to act as the basis for measuring improvements associated with the support provided. The lessons and experiences on conservation agriculture shall be shared with other farmers through field days and demonstration plots;

2.4.4.4 Briquettes, improved fish-smoking kilns, wood-saving cook stoves and solar will be promoted as energy-efficient technologies for households and institutions in the Basin through promotional materials, discussion forums and training and demonstrations at the Chancellor College Innovative Technologies Learning Centre (ITLC). The Centre will be upgraded by painting and installation of electricity and facilities so as to provide a conducive environment for trainees and trainers. A detailed study into urban and rural charcoal and firewood use will be conducted to support the establishment of mini-hydro power generation for local and urban communities.

2.4.4.5 In 2011, the Programme developed a collaborative Programme with the University of Agder, Norway through which an ICT Supported Education workshop was conducted in Malawi, benefiting 42 participants. Using this background, the Programme will develop a joint E-learning Course on Climate change and support one student from the University of Agder, Norway to undertake field research in the Basin in partial fulfilment of a Master of Arts in Development Degree and another from the Programme to undertake studies in Norway. The Programme will also explore the engagement of Norwegian Peace Corps in Programme implementation. Collaboration will also be strengthened with national and international programmes, projects and stakeholders that are implementing similar activities within and outside the basin including The Development Fund, Total LandCare, Swedish Cooperative Centre, NASFAM and Bunda College. Joint research on the management of ecosystem services for food security and the nutritional health of the rural poor at the forest-agricultural interface shall be done in collaboration with the Ecosystem Services for Poverty Alleviation (ESPA) consortium in the Zomba Mountain Forest Reserve across Malosa-Chingale area.

#### **2.4.5 Objective 5: Monitoring and Evaluation System Developed and Implemented**

2.4.5.1 The Programme will continue to monitor trends of critical natural resources and processes in the basin, which are vegetation and biodiversity, carbon stock levels, water resources, fisheries, soil erosion and rainfall.

2.4.5.2 A mid-term evaluation shall be conducted to assess the impact made by the Programme in the first 2.5 years and provide direction on management and

implementation arrangements including areas for prioritization and approaches.

## **2.5 WORK PLAN AND BUDGET**

The total budget for the planned activities is NOK6,809,887 of which NOK6,242,000 shall be sought from the development partner while NOK569,052 shall be brought down from unspent funds of the 2011 budget.

## **3. APPENDICES**

A summarised version of the work plan and budget is presented as Appendix A while a detailed work plan and budget is presented as Appendix D. The Programme's logical framework, which presents an outlook of the expected results until 2014, is attached as Appendix B. A Monitoring and Evaluation framework, detailing the expected outputs from each activity is presented as appendix C. The Risks associated with implementation of the Programme and the measures that are being taken to reduce and/or mitigate these risks are provided in Appendix E.

### Appendix A: Summary Work Plan and Budget for Year 3 (2012)

SN	ACTIVITY DESCRIPTION	IMPLEMENTATION SCHEDULE												COST BREAK-DOWN	TOTAL BUDGET (NOK)	WorldFish	LEAD	FRIM
		J	F	M	A	M	J	J	A	S	O	N	D					
1	PERSONNEL	*	*	*	*	*	*	*	*	*	*	*	*	Salaries for 9 Programme Staff @ NOK536,581 and compensation for 9 part-time staff @NOK1,268,452 .	1,805,033	781,322	896,968	126,743
2	ADMINISTRATION AND MANAGEMENT	*	*	*	*	*	*	*	*	*	*	*	*	Programme management costs incurred by the two coordinating institutions @ NOK201,180 each	402,360	201,180	201,180	-
3	OPERATIONAL (Programme Office)	*	*	*	*	*	*	*	*	*	*	*	*	Maintenance of office buildings and equipment @ NOK114,960, Motor Vehicle insurance for 4 vehicles @ NOK75,874, Motorcycle Insurance for 3 vehicles @ NOK3,449, Office Equipment Insurance @ NOK17,244, Vehicle maintenance (4 vehicles) @ NOK91,968, Motorcycles maintenance for 3 vehilces @ NOK13,795, Bank charges @ NOK5,518, Fuel (Office Operations) @ NOK79,427, Office Supplies and Utilities @ NOK10,346, Communications - Internet, Post, Fax, telephone @ NOK137,952, Security @ NOK12,416, Sundry @	659,515	-	659,515	-

SN	ACTIVITY DESCRIPTION	IMPLEMENTATION SCHEDULE												COST BREAK-DOWN	TOTAL BUDGET (NOK)	WorldFish	LEAD	FRIM
		J	F	M	A	M	J	J	A	S	O	N	D					
														NOK27,590 and Audit Fees @ NOK68,976.				
4	<b>OBJECTIVE 1: CAPACITY OF LOCAL AND DISTRICT INSTITUTIONS TO PLAN, IMPLEMENT AND MONITOR INTEGRATED CLIMATE CHANGE ADAPTATIONS INCREASED</b>														<b>402,308</b>	-	<b>316,119</b>	<b>86,189</b>
6	Activity 1.2: Capacity Development of Institutions and individuals on CCA			*	*	*	*	*	*	*				Training costs for Decentralised structures @ NOK57,459	57,459	-	57,459	-
8	Activity 1.3: Facilitate Registration and training of VNRMCs			*	*	*	*	*	*	*				VNRMC registration @ NOK47,883 and VNRMC training @ NOK38,306.	86,189	-	-	86,189
12	Activity 1.5: Support Capacity of Training Institutions to Integrate Climate Change Issues.	*	*	*	*	*	*	*	*	*	*	*	*	Training unit establishment costs @ NOK258,660.	258,660	-	258,660	-
14	<b>OBJECTIVE 2:INTEGRATED PLAN FOR LAKE CHILWA BASIN HOTSPOTS DEVELOPED AND IMPLEMENTED</b>														<b>917,588</b>	<b>149,943</b>	<b>767,646</b>	-
18	Activity 2.5: for each hotspot, implement management plans	*	*	*	*	*	*	*	*	*	*	*	*	Support to women fish trading groups value addition @ NOK114,960, training costs @ NOK9,577, fish-smoking kilns @ NOK 25,406, Bilharzia prevalence study @ NOK 51,732, mass drug administration @ NOK 43,545 and drip irrigation kits and installation @ NOK212,554.	457,774	149,943	307,832	-



SN	ACTIVITY DESCRIPTION	IMPLEMENTATION SCHEDULE												COST BREAK-DOWN	TOTAL BUDGET (NOK)	WorldFish	LEAD	FRIM	
		J	F	M	A	M	J	J	A	S	O	N	D						
26	Activity 2.7: Establish and Operate Community Radio Station	*	*	*	*	*	*	*	*	*	*	*	*		Radio equipment materials and installation @ NOK365,756 and radio programming @ NOK 94,058.	459,814	-	459,814	-
29	<b>OBJECTIVE 3: HOUSEHOLD AND ENTERPRISE ADAPTIVE CAPACITY IMPROVED THROUGH PRACTICAL ADAPTATION PROJECTS/MEASURES</b>													<b>388,934</b>	<b>289,322</b>	<b>42,528</b>	<b>57,083</b>		
32	Activity 3.3: Develop basin scale maps of Vulnerability to Climate Change shocks using secondary data	*	*	*	*	*	*	*							Data collection and mapping @ NOK17,415	17,415	17,415	-	-
34	Activity 3.4: strengthen small-scale producers and traders' access to markets	*	*	*	*	*									Fish business promotion and capacity building @ NOK43,094, value addition @ NOK 8,622, rice business promotion and capacity building @ NOK 43,094 and value addition @ NOK 8,622.	103,433	103,433	-	-
39	Activity 3.5: Conduct exchange visits to learn about innovations, best practices, benefits of collective action					*	*								2 exchange visits @ NOK42,528.	42,528	-	42,528	-
41	Activity 3.6: Identify and promote new IGAs	*	*	*	*	*	*								Value addition and linkage to markets @ NOK11,496, contracts for rice and fish @ NOK6,668, linkage of entrepreneurs to markets @ NOK6,668.	24,831	24,831	-	-

SN	ACTIVITY DESCRIPTION	IMPLEMENTATION SCHEDULE												COST BREAK-DOWN	TOTAL BUDGET (NOK)	WorldFish	LEAD	FRIM	
		J	F	M	A	M	J	J	A	S	O	N	D						
48	Activity 3.10: provide business development support	*	*	*	*	*									Training costs for agro and natural resource enterprise groups in business skills and marketing @ NOK143,643.	143,643	143,643	-	-
50	Activity 3.11: Establish Revolving Fund for Energy Technology				*	*	*	*	*	*					Wood-saving cook stoves promotion @ NOK34,488 and study on urban and rural charcoal use @ NOK22,595	57,083	-	-	57,083
54	<b>OBJECTIVE 4: IMPACTS OF CLIMATE CHANGE MITIGATED THROUGH IMPROVED FOREST MANAGEMENT AND GOVERNANCE</b>													<b>1,275,099</b>		<b>274,402</b>	<b>1,000,698</b>		
57	Activity 4.3: pilot best bet mitigation options	*	*	*	*	*	*	*	*	*	*	*	*		Inpus and technical support towards fruit tree production @ NOK48,268.	48,268	-	-	48,268
60	Activity 4.4: forest management needs addressed in Critical Sites	*	*	*	*	*	*	*	*	*	*	*	*		Forest management operations in ZMFR @ NOK250,543, fire-towers rehabilitation @ NOK5,274, fire-fighting equipment @ NOK25,215, law enforcement @ NOK57,020, tree nurseries establishment @ NOK250,060 and VNRMCs training @ NOK47,881.	635,993	-	-	635,993
67	Activity 4.5: Facilitate implementation of conservation (Climate Smart) agriculture among hotspot farmers					*	*	*	*	*	*	*	*		Baseline survey @ NOK34,488, technical support and farm inputs @ NOK233,735, farmer training @ NOK32,143 and	316,437	-	-	316,437

SN	ACTIVITY DESCRIPTION	IMPLEMENTATION SCHEDULE												COST BREAK-DOWN	TOTAL BUDGET (NOK)	WorldFish	LEAD	FRIM
		J	F	M	A	M	J	J	A	S	O	N	D					
														field day @ NOK16,071..				
72	Activity 4.6: Introduce and Promote efficient fuel-saving technologies for households and institutions (1 Demonstration Project)	*	*	*	*	*	*	*	*	*	*	*	*	Briquette production costs @ NOK13,586 and innovative technologies learning centre upgrade @ NOK11,496.	25,082	-	25,082	-
75	Activity 4.7: Raise awareness in communities within and outside the Basin on how their energy choices affect NRM	*	*	*	*	*	*	*	*	*	*	*	*	Promotional materials @ NOK48,140.	48,140	-	48,140	-
77	Activity 4.8: Establish collaborative programs with Norwegian institutions	*	*	*	*	*	*	*	*	*	*	*	*	Course development and student exchange @ NOK201,180.	201,180	-	201,180	-
79	<b>OBJECTIVE 5: MONITORING AND EVALUATION SYSTEM DEVELOPED AND IMPLEMENTED</b>													<b>203,302</b>	<b>186,580</b>	<b>16,721</b>	-	
93	Activity 5.4: Conduct Resource Monitoring in Critical Sites within the Hotspots	*	*	*	*	*	*	*	*	*	*	*	*	Rainfall and temperature data collection @ NOK16,721, Joint M & E @ NOK40,006, mid-term impact assessment @ NOK34,488, mid-term evaluation @ NOK68,976, soil erosion monitoring @ NOK14,370, water level and river discharge monitoring @ NOK14,370 and fisheries resources	203,302	186,580	16,721	-

SN	ACTIVITY DESCRIPTION	IMPLEMENTATION SCHEDULE												COST BREAK-DOWN	TOTAL BUDGET (NOK)	WorldFish	LEAD	FRIM
		J	F	M	A	M	J	J	A	S	O	N	D					
														monitoring @ NOK 14,370.				
101	<b>6. PROGRAMME MANAGEMENT AND OVERSIGHT ENHANCED</b>					*							*	Work planning and budgeting session @ NOK26,239, Programme Management committee meetings @ NOK57,428, Programme Steering Committee meetings @ NOK53,000.	<b>136,667</b>	-	<b>136,667</b>	-
105	<b>Total</b>														<b>6,190,806</b>	<b>1,608,347</b>	<b>3,311,746</b>	<b>1,270,713</b>
138	Indirect costs @ 10%														619,081	160,835	331,175	127,071
<b>139</b>	<b>Grand Total for Year 3 (2012)</b>														<b>6,809,887</b>	<b>1,769,182</b>	<b>3,642,921</b>	<b>1,397,784</b>
140	<b>Allocation for year 3 (2012): RNE</b>														<b>6,242,000</b>			
141	Additional Funds (To be brought down from 2011 Budget balance)													Funds brought down from Radio equipment and installation, establishment of training unit and other activities.	569,052			
	<b>Balance (Cushion)</b>														<b>1,165</b>			

SN	ACTIVITY DESCRIPTION	IMPLEMENTATION SCHEDULE												COST BREAK-DOWN	TOTAL BUDGET (NOK)	WorldFish	LEAD	FRIM	
		J	F	M	A	M	J	J	A	S	O	N	D						
<b>PARTNER CONTRIBUTION TOWARDS THE PROGRAMME IN 2012</b>																			
	<b>DESCRIPTION</b>															<b>AMOUNT (NOK)</b>	WorldFish	LEAD	FRIM
	PERSONNEL														Partner contributions through additional staff and interns.	805,121			-
	ESPA Consortium with support from NERC UK														Contribution on research staff, materials and equipment and operational funds by the ESPA Project	784,987			
	<b>Total Partner Contribution</b>															<b>1,590,107</b>			

**Note: This Budget was translated from US\$ to NOK using the exchange rate: US\$1 = NOK5.748 as provided by National Bank of Malawi on 4th May 2012**

## Appendix B: LCBCCAP Logical Framework (2010 – 2014)

NARRATIVE	OBJECTIVELY VERIFIABLE INDICATOR (OVI) (INCL. GENDER, HIV)	MEANS OF VERIFICATION (MOV)	ASSUMPTIONS
<b>Goal:</b>			
To improve and sustain livelihoods of the 1.4 million people in the Lake Chilwa basin.			
<b>Purpose:</b>			
To develop and implement a basin-wide climate change adaptation strategy that builds resilience of people, institutions and natural resources.			
<b>Output 1: Capacity of local and district institutions to plan, implement and monitor integrated climate change adaptations increased.</b>			
Activity 1.1: Assess capacity of local and district institutions for effective NRM.	By end of Year 1, 3 institutional assessments completed (characteristics, organizational capacity, and needs)	District institutional profiles produced	Stakeholders provide reliable data on institutions
Activity 1.2: Implement capacity development programme based on participatory needs assessment.	By end of Year 1, three training programmes for local and district NRM groups (VNRMCs, Water user assoc, etc.) developed and delivered.	Training Reports	Willingness of groups to participate
Activity 1.3: Facilitate registration of community-based natural resource committees (CBNRC) in hotspots.	By end of year 2, at least 10 CBNRCs registered and functioning.	Functional and registered CBNRCs	Willingness of community to participate.
	By the end of year 5, 50 CBNRCs registered and functioning		
Activity 1.4: Support and evaluate effectiveness of initiatives to harmonize policy across sectors (including NAPA).	By end of year 2, two most critical inter-sectoral policy conflicts identified and managed in all three district level plans.	Policy briefs and guidelines for integrated management	Willingness of agencies to cooperate
Activity 1.5: Support capacity of training institutions to integrate climate change issues.	By end of year 2, based on needs assessment, curriculum materials developed and integrated in 16 MES Chancellor College courses.	Curriculum materials	Support at CC for curriculum
	By end of year 1, one specialist group to develop technical training materials established at Chancellor College.	Progress Report	
	By end of year 5, 3 masters and 1 Ph.D. student trained	PhD and MSc. Students registered.	
<b>Output 2: Integrated management plan for Lake Chilwa basin hotspots developed and implemented</b>			
Activity 2.1: Identify hot-spots of socio-ecological vulnerability using agreed criteria.	By end of year 1, consultations with each District Council to identify potential hotspots completed.	Workshop Report	Stakeholders agree on criteria
	By end of year 1, one workshop convened for participatory selection of priority hotspots.	Updated log frame	
	By end of year 1, maximum of 10 hotspots identified for management response.	Progress Reports	

<b>NARRATIVE</b>	<b>OBJECTIVELY VERIFIABLE INDICATOR (OVI) (INCL. GENDER, HIV)</b>	<b>MEANS OF VERIFICATION (MOV)</b>	<b>ASSUMPTIONS</b>
Activity 2.2: Conduct stakeholder analysis to identify constituency for developing management plans.	By end of year 1, one stakeholder analysis conducted in which key stakeholders are identified and categorized	Stakeholder analysis report	Willingness of stakeholder to participate
	By end of Year 2, 10 stakeholder groups formed and engaged in management planning	Minutes of planning meetings	
Activity 2.3: Establish basin-scale forums for knowledge exchange and improved planning (incl. historical knowledge, climate change data, market information, lessons learnt).	Two basin-scale stakeholder meetings held per year starting in year 2.	Minutes of meetings	Willingness of stakeholder to participate
	From end of Year 1, weekly weather forecasts for basin accessible by mobile phone.	Broadcast transcripts	
	From end of year 2, climate change mitigation and adaptation information delivered by community radio, monthly.		
Activity 2.4: For each hot-spot, mobilize village and area development committees to develop integrated management plans.	By end of Year 2, at least one management plan concerning the hotspot approved by District Council.	Hotspot Management Plans	Decentralization process is sustained.
	By end of Year 2, a management plan for Zomba Mountain Forest developed and approved by the Director of Forestry.	Forestry Department Reports Zomba Mountain Forest Management Plan	Committees are willing to participate
Activity 2.5: For each hot-spot, implement integrated management building on existing management plans.	By end of Year 2, roles and responsibilities for management implementation agreed among stakeholders.	District work Plans	Decentralization process is sustained
	By end year 3, 10 management plans approved and implemented	Forestry Department Reports	
	By year 5, 20 cross-basin learning exchange visits conducted among hotspots starting from year 2.	District Assembly Reports Programme progress reports	
Activity 2.6: Assist stakeholder groups to secure long-term funding using existing (District Assembly) and new (REDD, payment for ecosystem services) mechanisms.	By end of year 1, stakeholder sensitizations on PES completed in each district	Sensitization Reports	
	By year 2, 1 analysis report of options for benefit sharing completed and disseminated	Payment for Ecosystems Services (PES) Analysis Report	
	By year 2, one proposal per hotspot submitted to District Council for funding to sustain management implementation.	Hotspot Proposals	
	By year 3, one proposal submitted for funding to sustain management implementation.	Basin proposal	
Activity 2.7: Establish community radio at Chancellor College to disseminate information on climate change and the	By end of year 2, 1 community radio established, licensed and functioning.	Community Radio License	License provided by MACRA.
		Programme Radio Station reports	
		Broadcast transcripts	

NARRATIVE	OBJECTIVELY VERIFIABLE INDICATOR (OVI) (INCL. GENDER, HIV)	MEANS OF VERIFICATION (MOV)	ASSUMPTIONS
environment to Basin community.			
<b>Output 3: Vulnerability of Basin households reduced through improved and diversified livelihoods and natural resource management</b>			
Activity 3.1: Conduct livelihood analysis to understand the adaptive capacity of people and enterprises in the basin.	By end of Year 1, 1 livelihood analysis report (on knowledge of livelihood characteristics, coping strategies and adaptive capacity) produced.	Livelihoods Analysis report	Households willing to give information
	By end of year 2, 1 trend analysis in livelihood characteristics within the basin conducted.	Historical Livelihood trends.	
Activity 3.2: Analyze climate change, environmental and socioeconomic change perceptions by different community members.	By end of year 1, one environmental and socio-economic analysis conducted in each hotspot.	Environmental and Socio-economic analysis report.	Focus groups give information
Activity 3.3: Develop basin-scale maps of vulnerability to climate change shocks using secondary data.	By end of Year 1, 10 community participatory vulnerability maps produced and utilized for planning and targeting adaptation strategies	Vulnerability maps	Maps for appropriate scale available.
	By end of year 2, one GIS vulnerability map developed for the basin.	Community Plans GIS Database	
Activity 3.4: Strengthen small-scale producers' and small-scale traders' access to markets.	By end of year 2, value-chain analyses (VCA) of key commodities (e.g. charcoal, timber, rice and fish) completed.	VCA Reports	Willingness of traders to participate.
	By end of Year 2, recommendations for improving market chains presented to producers and their development partners	Progress Reports	
	By end of year 4, at least 3 producer/grower associations formed and functioning		
	By end of year 4, proportion of value of trade in key commodities captured by small-scale producers and traders increased by 20%.		
	By end of year 3, proportion of farmers accessing urban and international markets increased by 20 %.	Assessment Report Contracts	
Activity 3.5: Conduct Exchange visits to learn about innovations, best practices, benefits of collective action (e.g. to Chia Lagoon; DAPP Conservation Farming Project; Nkuwazi Forest).	By end of Year 5 , 4 exchange visits conducted	Exchange Visit Reports	Stakeholders in learning sites collaborate with programme
	By year 5, 30 % of new innovations adopted	Progress Report	



NARRATIVE	OBJECTIVELY VERIFIABLE INDICATOR (OVI) (INCL. GENDER, HIV)	MEANS OF VERIFICATION (MOV)	ASSUMPTIONS
Activity 3.6: Identify and promote new income generating activities (mushroom farming, beekeeping, soya bean production, PES, etc).	By end of year 4, 75% of hotspot households and enterprises implementing new IGA's.	Progress Reports	Priorities and intervention sites agreed with stakeholders and local partners.
		Evaluation reports	
Activity 3.7: Train extension personnel and lead farmers in adaptive strategies targeted through participatory process.	By end of year 3, one ToT conducted for least 60 extension personnel and 15 lead farmers in each hotspot (150 in total).	Training reports	Willingness to participate in training
Activity 3.8: Establish demonstration sites of adaptive strategy technologies in each hotspot.	By end of year 3, 10 demonstration sites established and maintained.	Evaluation Reports	Willingness of community to establishment of plots.
	By end of year 5, 25% of households in the hotspots adopt adaptive strategy technologies	Evaluation Reports	
Activity 3.9 Pilot solar fish dryers for women processors and traders.	By end of year 1, one women group selected to test the dryers in each of the 11 landing sites around the Lake.	Pilot Study Report	Willingness of traders/processors to adopt.
	By end of year 2, fish post-harvest losses reduced by 15%.	Survey report	
	By end of year 2, 1 market survey conducted to assess the acceptability to solar dried fish to determine feasibility of out-scaling the innovation.	Survey report	
Activity 3.10: Provide business development support (training; microfinance, links to markets and technical information).	By end of Year 5, 15 business groups benefited from business support services.	Monitoring Reports	Stakeholders are willing to participate in training courses.
		Business Plans	
Activity 3.11: Establish a Fund through micro finance institutions to support small businesses involved in fuel-saving technologies.	By end of year 2, loans disbursed to 50 businesses involved in fuel-saving technologies.	Receipts (fund disbursement records)	NGO partner available to engage in revolving fund scheme
	By end of year 5, 95 % of annual recovery rate achieved.	Reports	
Activity 3.12: Facilitate communication of need for social services, resource access etc. to government and NGOs.	By end of year 5 at least 5 demand-driven social services including resource access provided to hotspot communities.	Reports	Government and NGOs continue to be responsive to community demands.
<b>Output 4: Carbon sequestration throughout the Basin increased.</b>			
Activity 4.1: Identify potential funding	By end of Year 1, at least two appropriate funding mechanisms	Report/documentation	

<b>NARRATIVE</b>	<b>OBJECTIVELY VERIFIABLE INDICATOR (OVI) (INCL. GENDER, HIV)</b>	<b>MEANS OF VERIFICATION (MOV)</b>	<b>ASSUMPTIONS</b>
mechanisms to support mitigation options through literature and policy review and expert consultation	selected.		
Activity 4.2: Conduct participatory feasibility analysis of best bet options for climate change mitigation actions in the basin.	By end of Year 2, at least 2 best bet options for climate change mitigation actions selected and disseminated for implementation.	Reports	Willingness of stakeholder to participate.
	By end of year 2, 25% increase in awareness of best bet options.	Survey Report	
Activity 4.3: Pilot the implementation of preferred best bet mitigation options with strong livelihood benefits, on customary and private land.	By end of Year 3, 2 best bet mitigation options are validated and adapted for application in hotspots. By end of Year 5, carbon storage increased by 50% on customary and private land in the basin.	Vulnerability mapping surveys, livelihood surveys, incremental carbon measurements	
		Carbon Inventory Report	
Activity 4.4: Forest management needs addressed in critical habitats (steep slopes, river corridors) on public lands (e.g. forest reserves).	By end of project (year 5) Forest cover increased by 20% on 10 000 Ha of bare land with slope > 12 degrees and along 50 km of river corridors.	Forest survey report	Cooperation of stakeholders
	By end of year 2, 5 forest areas established and managed.		
	By end of year 5, 15 village Forest Areas established to meet fuel wood energy demands of households and enterprises.		
	By end of year 5, 50 hectares of river banks rehabilitated with vegetation cover.		
	By end of year 5, 25% increase in community participation in the collaborative management of protected forests areas.	Progress report, Co-management Agreements	
	By end of year 5, 15 forest blocks within forest reserves co-managed.		
	By year 5, frequency of fires reduced by 75 %.		
	By year 5, forest area (ha) destroyed by fire reduced by 75%.		
	By end of year 1, one insectary and soils laboratory rehabilitated for biodiversity monitoring of forested areas		
	By end of year 1, one fire base rehabilitated to improve monitoring of fires in forested areas.		
Activity 4.5: Facilitate implementation of conservation	By year 5, 20 % increase in Ha of farmland under conservation agriculture in the hotspots.	Survey Report	

NARRATIVE	OBJECTIVELY VERIFIABLE INDICATOR (OVI) (INCL. GENDER, HIV)	MEANS OF VERIFICATION (MOV)	ASSUMPTIONS
agriculture among hotspot farmers.			
Activity 4.6: Introduce and promote energy-efficient fuel-saving technologies for households and institutional use within the Basin.	By end of year 5 at least 4 fuel-saving technologies introduced and adopted by 25% of households and 50 % of institutions	Progress Reports	Willingness of people to adopt.
	By end of year 5, 75% of women groups are using solar dryers and improved fish smoking kilns.		
Activity 4.7: Raise awareness in communities and institutions outside of the Basin on how their energy choices (charcoal, provision of electricity service) has an impact on natural resource management practices within the Basin and contributes to community vulnerability to climate change.	By end of year 5, 25 % increase in the level of awareness of impacts of consumer choices on energy and natural resources	Reports	
		Radio episodes	
		Survey Report	
Activity 4.8 Establish collaborative programmes with Norwegian Institutions	By end of Year 2; at least one collaboration agreement signed with a Norwegian research or development institution	<ul style="list-style-type: none"> <li>- Collaborative Agreement</li> <li>- Progress Reports</li> </ul>	Willingness of institutions to collaborate on project activities.
<b>Output 5. Monitoring and Evaluation system developed and implemented.</b>			
Activity 5.1: Set up a participatory monitoring and evaluation system	By end of Year 1, one participatory monitoring and evaluation system developed and functional	M & E Report	Institutions provide information
Activity 5.2: Develop monitoring indicators through participatory processes.	By end of Year 1, # of indicators developed	PRA reports	Willingness of stakeholders to participate.
		Revised management plans	
Activity 5.3: Conduct baseline surveys	By end of year 1, 5 baseline surveys conducted	Baseline survey reports	
Vegetation surveys			
Livelihood Surveys			
Biodiversity Survey			
Stakeholder analysis			
Fisheries frame and catch assessment surveys			

NARRATIVE	OBJECTIVELY VERIFIABLE INDICATOR (OVI) (INCL. GENDER, HIV)	MEANS OF VERIFICATION (MOV)	ASSUMPTIONS
Activity 5.4: Monitor and evaluate programme activities.	By end of each year, key aspects affecting programme implementation identified and acted upon.	M & E Reports	
	By year 3, one mid-term evaluation conducted.	Look-back study reports	
	By end of year 3, 75% of households and all programme partners are using the agreed set of indicators to monitor their performance.	Mid Term Evaluation Report	
	By end of year 5, one external end of Programme evaluation conducted.	M & E reports. End of Programme Evaluation Report	

### Appendix C: LCBCCAP Monitoring and Evaluation Framework (2010 – 2014)

PERFORMANCE INDICATOR	MEASURABLE INDICATORS OF PERFORMANCE	Baseline <sup>1</sup>	Target/ Actual	TARGET AND ACTUAL VALUES BY YEAR					Total	DATA COLLECTION & REPORTING		
				2010	2011	2012	2013	2014		Frequency of Reports	Data Collection Method	Collection Responsibility
	No. of Participating Villages	0	Target	500	500	500	500	500	500	Once/Year	Community Based M&E with verification sample surveys of hotspots/ households/ associations/ groups	LCBCCAP M & E Team & district and hotspot field officers
			Actual	471	471							
	No. of participating households	0	Target	1,000	3,000	3,000	2,000	1,000	10,000			
			Actual	795	1,273				1,273			
Capacity of local and district institutions to plan, implement and monitor integrated climate change adaptations increased.	No. of participating community based natural resources management committees	5	Target	10	10	10	10	10	50	Once/Year	Community Based M&E with verification sample surveys of hotspots/ households/ associations/ groups	LCBCCAP M&E team & district and hotspot field officers
			Actual	10	10				20			
	No of CBNRCs registered and functioning	7	Target	10	10	10	10	10	50			
			Actual	10	10				20			
	No of district NRM personnel trained	7	Target	45	0	0	0	0	45			
			Actual	45	0				45			
	No of local NRM groups trained	7	Target	10	30	20	0	0	60			
			Actual	5	20				25			
	No of local NRM group members trained	14	Target	200	600	400	0	0	1200			

PERFORMANCE INDICATOR	MEASURABLE INDICATORS OF PERFORMANCE	Baseline <sup>1</sup>	Target/ Actual	TARGET AND ACTUAL VALUES BY YEAR					Total	DATA COLLECTION & REPORTING		
				2010	2011	2012	2013	2014		Frequency of Reports	Data Collection Method	Collection Responsibility
			Actual	150	500				650			
	No. of inter-sectoral conflicts in district level plans managed	0	Target	2	0	0	0	0	2			
				Actual	0	0				0		
	No. of courses into which climate change issues are integrated in Master of Environmental Science at Chancellor College	0	Target	8	8	0	0	0	16			
				Actual	0	16				16		
	No. of specialist (Trainers) groups established and functional	0	Target	1	0	0	0	0	1			
				Actual	1	0				1		
	No. of MSc. students supported	0	Target	2	0	0	0	0	2			
				Actual	2	0				2		
	No. of PhD Students supported	0	Target	-	1	0	0	0	1			
				Actual	0	1				1		
Integrated management plan for Lake Chilwa basin developed and hotspots managed	No. of hotspots selected and managed	0	Target	10	0	0	0	0	10	Twice / year	Community Based M&E with verification sample surveys of	LCBCCAP team & district and hotspot field
			Actual	10	0				10			

PERFORMANCE INDICATOR	MEASURABLE INDICATORS OF PERFORMANCE	Baseline <sup>1</sup>	Target/ Actual	TARGET AND ACTUAL VALUES BY YEAR					Total	DATA COLLECTION & REPORTING		
				2010	2011	2012	2013	2014		Frequency of Reports	Data Collection Method	Collection Responsibility
implemented	No. of community projects implemented based on approved management plans	0	Target	-	10	0	0	0	10		hotspots/ households/ associations/ groups	officers
			Actual	-	2				2			
	No. of community radios established, licensed and functional	0	Target	-	1	0	0	0	1			
			Actual	-	0				0			
	No. of community participatory vulnerability maps produced and utilized for planning and targeting adaptation strategies	0	Target	10	0	0	0	0	10			
			Actual	0	12				12			
<b>Vulnerability of Basin households reduced through improved and diversified livelihoods and natural resource management</b>	No. of GIS vulnerability maps developed for the basin	0	Target	-	1	0	0	0	1	Twice/year	Community Based M&E with verification sample surveys of hotspots/ households/ associations/ groups	LCBCCAP M&E team & district and hotspot field officers
			Actual	-	1				1			
	No. of producer associations formed and functioning	0	Target	-	1	2	0	0	3			
			Actual	-	6				6			
	% increase in value of trade in key commodities captured by small-scale producers and traders	0	Target	-	5	7	8	0	20			
			Actual	-	-				-			

PERFORMANCE INDICATOR	MEASURABLE INDICATORS OF PERFORMANCE	Baseline <sup>1</sup>	Target/ Actual	TARGET AND ACTUAL VALUES BY YEAR					Total	DATA COLLECTION & REPORTING		
				2010	2011	2012	2013	2014		Frequency of Reports	Data Collection Method	Collection Responsibility
	% increase of smallholder farmers accessing urban and international markets	0	Target	-	5	7	8	0	20			
			Actual	-	-				-			
	% of households adopting new innovations	0	Target	-	20	35	20	0	75			
			Actual	-	-				-			
	% of hotspot households and enterprises implementing new IGA's	2	Target	-	20	35	20	0	75			
			Actual	-	-				-			
	No. of extension staff trained as ToT	12	Target	-	60	0	-	-	60			
			Actual	-	15				15			
	No. of Lead farmers trained and actively participating in programme activities	5	Target	-	150	0	0	0	150			
			Actual	-	60				60			
	% of targeted households adopting adaptive strategy technologies	15	Target	-	10	15	25	25	75			
			Actual	-	-				-			
	No. of solar fish dryers	0	Target	11	0	0	0	0	11			



PERFORMANCE INDICATOR	MEASURABLE INDICATORS OF PERFORMANCE	Baseline <sup>1</sup>	Target/ Actual	TARGET AND ACTUAL VALUES BY YEAR					Total	DATA COLLECTION & REPORTING		
				2010	2011	2012	2013	2014		Frequency of Reports	Data Collection Method	Collection Responsibility
	procured and supplied to women groups	0	Actual	0	10				10			
	No. of women groups selected and testing the driers in landing sites around the lake	0	Target	11	0	0	0	0	11			
			Actual	0	3				3			
	% decrease in fishpost harvest losses	0	Target	5	10	0	0	0	15			
			Actual	0	-				-			
	% increase in acceptability of solar dried fish	0	Target	-	5	5	5	5	20			
			Actual	-	-				-			
	No. of business groups benefiting from business support services	0	Target	-	5	10	0	0	15			
			Actual	-	10				10			
	No of business persons directly benefiting from business support services	0	Target	-	50	100	0	0	150			
			Actual	-	150				150			
	No. of business groups benefiting from fuel-saving technologies loans	0	Target	-	10	20	20	0	50			
			Actual	-	6				6			

PERFORMANCE INDICATOR	MEASURABLE INDICATORS OF PERFORMANCE	Baseline <sup>1</sup>	Target/ Actual	TARGET AND ACTUAL VALUES BY YEAR					Total	DATA COLLECTION & REPORTING		
				2010	2011	2012	2013	2014		Frequency of Reports	Data Collection Method	Collection Responsibility
	No. of business persons directly benefiting from fuel-saving technologies loans	0	Target	-	100	200	200	0	500			
			Actual	-	90				90			
	No. of demand-driven social services provided to hotspot communities through the programme	0	Target	-	1	2	2	0	5			
			Actual	-	2				2			
	No. of tree seedlings raised and planted	5,000,000	Target	300,000	450,000	450,000	450,000	450,000	2,100,000			
			Actual	210,000	238,000				448,000			
	No. of tree seedlings planted and survived	0	Target	210,000	2,100,000	2,100,000	2,100,000	490,000	7000000			
			Actual	-	203,000				203,000			
	No. of Village Forest Areas established	3	Target	5	10	0	0	0	15			
			Actual	0	10				10			
	% increase of quantity of carbon stocks on customary and private land	0	Target	-	0	5	5	10	20			
			Actual	-	-				-			
	% increase in forest	0	Target	-	5	5	5	5	20			

PERFORMANCE INDICATOR	MEASURABLE INDICATORS OF PERFORMANCE	Baseline <sup>1</sup>	Target/ Actual	TARGET AND ACTUAL VALUES BY YEAR					Total	DATA COLLECTION & REPORTING		
				2010	2011	2012	2013	2014		Frequency of Reports	Data Collection Method	Collection Responsibility
	cover		Actual	-	-				-			
	Area (Ha) of bare land with slope > 12 degrees afforested	0	Target	500	2,500	2,500	500	0	6,000			
				Actual	0	180.3				180.3		
	Distance (Km) of bare river corridors afforested	0	Target	5	15	15	10	5	50			
				Actual	0	16				16		
	Area (Ha) of river banks afforested	15	Target	5	10	15	15	5	50			
				Actual	0	21				21		
	No. of forest blocks within forest reserves co-managed	1	Target	5	10	0	0	0	15			
				Actual	0	0				0		
	% decrease of frequency of forest fires	100 (7 Fires/Yr)	Target	5	15	25	30	0	75			
				Actual	0	-				-		
	% decrease of forest area destroyed by fire	100 (454 Ha/Yr)	Target	5	15	25	30	0	75			
				Actual	0	-				-		
	No. of insectary	0	Target	1	0	0	0	0	1			

PERFORMANCE INDICATOR	MEASURABLE INDICATORS OF PERFORMANCE	Baseline <sup>1</sup>	Target/ Actual	TARGET AND ACTUAL VALUES BY YEAR					Total	DATA COLLECTION & REPORTING		
				2010	2011	2012	2013	2014		Frequency of Reports	Data Collection Method	Collection Responsibility
	laboratory rehabilitated		Actual	0	1				1			
	No. of soil science laboratory rehabilitated	0	Target	1	0	0	0	0	1			
			Actual	0	1				1			
	No of fire bases rehabilitated to improve monitoring of fires in forested areas	0	Target	1	-	-	-	-	1			
			Actual	1					1			
	No. of fire towers constructed to monitor forest fires	0	Target	3	2	-	-	-	5			
			Actual	3					3			
	% increase in hectares of farm land under conservation agriculture in the hotspots	0	Target	5	5	5	5	0	20			
			Actual	0	-				-			
	% of households adopted fuel-saving technologies		Target	5	5	5	5	5	25			
			Actual	-	-				-			
	% of women groups using solar dryers and improved fish smoking kilns	0	Target	5	30	30	10	0	75			
			Actual	-					-			

PERFORMANCE INDICATOR	MEASURABLE INDICATORS OF PERFORMANCE	Baseline <sup>1</sup>	Target/ Actual	TARGET AND ACTUAL VALUES BY YEAR					Total	DATA COLLECTION & REPORTING		
				2010	2011	2012	2013	2014		Frequency of Reports	Data Collection Method	Collection Responsibility
	% increase in level of awareness of impacts of consumer choices on energy and natural resources	0	Target	-	5	5	10	5	25			
			Actual	-	-				-			
PROGRAMME IMPACTS MONITORED	% of households with energy food reserves in critical months (Dec-Mar) <sup>3</sup>	0	Target	-	10	10	10	10	10	Once/year	Community Based M&E with verification sample surveys of hotspots/ households/ associations/ groups	LCBCCAP team & district and hotspot field officers
			Actual	-	-				-			
	% increase in real household income	0	Target	-	10	10	10	10	10			
			Actual	-					-			
	% decrease of households that are adopting irreversible/undesirable coping strategies	0	Target	-	10	20	20	20	20			
			Actual	-	-				-			
	% increase in total annual energy/staple food crop production	0	Target	-	10	10	10	10	10			
			Actual	-	-				-			
	% increase in annual fish production from fish ponds and cages(tonnes)	5	Target	5	10	10	10	10	10			
			Actual	-	-				-			
	% increase in number	2	Target	-	10	15	20	20	20			

PERFORMANCE INDICATOR	MEASURABLE INDICATORS OF PERFORMANCE	Baseline <sup>1</sup>	Target/ Actual	TARGET AND ACTUAL VALUES BY YEAR					Total	DATA COLLECTION & REPORTING			
				2010	2011	2012	2013	2014		Frequency of Reports	Data Collection Method	Collection Responsibility	
	of households in the target area which use appropriate locally available resources to improve their food and nutrition security		Actual	-	-				-				
PROGRAMME OUTPUTS MONITORED	% of project targeted households that accessed and use high quality improved seed varieties and / or planting materials	442	Target	-	10	10	20	20	20	Once/year	Community Based M&E with verification sample surveys of hotspots/ households/ associations/ groups	LCBCCAP team & district hotspot officers	M&E field
			Actual	14	60				60				
	% of HIV/AIDS affected households involved in productive enterprises	0	Target	10	10	10	10	10	10				
			Actual	0	-				-				
	% of farmer organizations that are sustainable	0	Target	-	10	20	40	50	50				
			Actual	-	-				0				
	% of targeted households utilizing planted trees <sup>2</sup>	10	Target	-	-	5	10	25	25				
			Actual	-	-				-				
	% of households involved in Forest Based Enterprises sourced from land	0	Target	-	5	10	15	25	25				
			Actual		-				-				

PERFORMANCE INDICATOR	MEASURABLE INDICATORS OF PERFORMANCE	Baseline <sup>1</sup>	Target/ Actual	TARGET AND ACTUAL VALUES BY YEAR					Total	DATA COLLECTION & REPORTING		
				2010	2011	2012	2013	2014		Frequency of Reports	Data Collection Method	Collection Responsibility
	under an approved legal arrangement											
	% increase in carbon sequestration throughout the Basin	0	Target	-	5	10	15	20	20			
			Actual	-	-				-			

### Appendix D: Detailed Work Plan and Budget for 2012 (Year 3)

SN	ACTIVITY DESCRIPTION	UNIT	QTY	UNIT COST (NOK)	FREQ (DAYS)	AMOUNT (NOK)	WorldFish	LEAD	FRIM	
1	<b>PERSONNEL</b>						<b>1,805,033</b>	<b>781,322</b>	<b>896,968</b>	<b>126,743</b>
2	<i>Salaries for Full Time Staff</i>						<b>536,581</b>	<b>147,834</b>	<b>388,747</b>	-
3	Programme Manager	Day	216	792	1	171,104		171,104		
4	Monitoring and Evaluation Officer	Day	216	425	1	91,712	91,712			
5	Accountant	Day	216	532	1	114,982		114,982		
6	Messenger/Office Assistant	Day	216	108	1	23,270		23,270		
7	Security Guards	Day	216	108	3	69,810	23,270	46,540		
8	Driver	Day	216	152	2	65,704	32,852	32,852		
9	<i>Compensation for Part-Time Staff</i>						<b>1,268,452</b>	<b>633,489</b>	<b>508,220</b>	<b>126,743</b>
10	Gender and Social Development Expert	Day	68	2,630	1	179,183	179,183			
11	Field Officer	Day	216	425	3	275,135	183,423	91,712		
12	Ecologist	Day	98	2,757	1	270,882	270,882			
13	Programme Coordinator/CC Mitigation Advisor	Day	107	2,376	1	254,279		254,279		
14	Forestry Management and Planning Advisor	Day	70	1,811	1	126,743			126,743	
15	Natural Resource Management Governance Specialist	Day	50	1,811	1	90,531		90,531		
16	Admin Assistant (LEAD)	Day	216	332	1	71,699		71,699		
17	<b>PLANT AND EQUIPMENT</b>									
19	<b>ADMINISTRATION AND MANAGEMENT</b>						<b>402,360</b>	<b>201,180</b>	<b>201,180</b>	
21	<b>OPERATIONS (Programme Office)</b>						<b>659,515</b>	-	<b>659,515</b>	-
22	Maintenance of office buildings and equipment	L/Sum	1	114,960	1	114,960		114,960		
23	Motor Vehicle insurance x 4	No	4	18,968	1	75,874		75,874		
24	Motorcycle Insurance x 3	No	3	1,150	1	3,449		3,449		
25	Office Equipment Insurance	No	1	17,244	1	17,244		17,244		
26	Vehicle maintenance (4 vehicles)	No	4	22,992	1	91,968		91,968		
27	Motorcycles maintenance x 3	No	3	4,598	1	13,795		13,795		
28	Bank charges	No	1	460	12	5,518		5,518		
29	Fuel (Office Operations)	No	1	6,619	12	79,427		79,427		
30	Office Supplies and Utilities	No	1	862	12	10,346		10,346		
31	Communications - Internet, Post, Fax, telephone	No	1	11,496	12	137,952		137,952		
32	Security	No	1	1,035	12	12,416		12,416		
33	Sundry	No	1	2,299	12	27,590		27,590		
34	Audit Fees	No	1	68,976	1	68,976		68,976		
35	<b>ACTIVITIES TOTAL</b>						<b>3,323,898</b>	<b>625,845</b>	<b>1,554,083</b>	<b>1,143,970</b>



SN	ACTIVITY DESCRIPTION	UNIT	QTY	UNIT COST (NOK)	FREQ (DAYS)	AMOUNT (NOK)	WorldFish	LEAD	FRIM
36	<b>OBJECTIVE 1: CAPACITY OF LOCAL AND DISTRICT INSTITUTIONS TO PLAN, IMPLEMENT AND MONITOR INTEGRATED CLIMATE CHANGE ADAPTATIONS INCREASED</b>					402,308	-	316,119	86,189
38	<b>Activity 1.2: Capacity Development of Institutions and individuals on CCA</b>					57,459	-	57,459	-
39	Train Decentralised structures (CBO Networks, ADC, VDC)	Session	6	4,788	2	57,459		57,459	
40	<b>Activity 1.3: Facilitate Registration and training of VNRMCs</b>					86,189	-	-	86,189
41	Facilitate registration of VNRMCs	No.	10	4,788	1	47,883			47,883
42	Conduct training of VNRMCs	Session	4	4,788	2	38,306			38,306
44	<b>Activity 1.5: Support Capacity of Training Institutions to Integrate Climate Change Issues.</b>					258,660	-	258,660	-
45	Establish training unit	No.	1	258,660	1	258,660		258,660	
46	<b>OBJECTIVE 2:INTEGRATED PLAN FOR LAKE CHILWA BASIN HOTSPOTS DEVELOPED AND IMPLEMENTED</b>					917,588	149,943	767,646	-
50	<b>Activity 2.5: for each hotspot, implement management plans</b>					457,774	149,943	307,832	-
51	Support women groups in solar fish drying and value addition	No	5	22,992	1	114,960	114,960		
52	Conduct training of women fish trader groups	Sessions	1	4,788	2	9,577	9,577		
53	Construct fish smoking kilns	No	4	6,352	1	25,406	25,406		
54	Bilharzia prevalence study, treatment and awareness raising	Man-days	30	1,724	1	51,732		51,732	
55	Conduct Mass Drug Administration to people infected and vulnerable to bilharzia	No	50	871	1	43,545		43,545	
56	Procure and distribute Drip irrigation technologies	No	100	2,126	1	212,554		212,554	
58	<b>Activity 2.7: Establish and Operate Community Radio Station</b>					459,814	-	459,814	-
59	Install and operate radio station	No.	1	365,756	1	365,756		365,756	
60	Radio programmes produced	Prog.	54	1,742	1	94,058		94,058	
61	<b>OBJECTIVE 3: HOUSEHOLD AND ENTERPRISE ADAPTIVE CAPACITY IMPROVED THROUGH PRACTICAL ADAPTATION PROJECTS/MEASURES</b>					388,934	289,322	42,528	57,083

SN	ACTIVITY DESCRIPTION	UNIT	QTY	UNIT COST (NOK)	FREQ (DAYS)	AMOUNT (NOK)	WorldFish	LEAD	FRIM
64	<b>Activity 3.3: Develop basin scale maps of Vulnerability to Climate Change shocks using secondary data</b>					<b>17,415</b>	<b>17,415</b>	-	-
65	Collect data to update vulnerability maps	No.	1	2,903	1	17,415	17,415		
66	<b>Activity 3.4: strengthen small-scale producers and traders' access to markets</b>					<b>103,433</b>	<b>103,433</b>	-	-
67	Promote fish marketing (business) through enterprise group formation, training and value addition	No.	3	4,788	3	43,094	43,094		
68	Promote value adding for fish	No.	1	8,622	1	8,622	8,622		
69	Promote rice marketing (business) through enterprise group formation, training and value addition	No.	3	4,788	3	43,094	43,094		
70	Promote value adding for rice	No.	1	8,622	1	8,622	8,622		
71	<b>Activity 3.5: Conduct exchange visits to learn about innovations, best practices, benefits of collective action</b>					<b>42,528</b>	-	<b>42,528</b>	-
72	Conduct visits by various groups to learn and share practical knowledge and experiences on climate change mitigation, adaptation and ENRM	No.	2	10,632	2	42,528		42,528	
73	<b>Activity 3.6: Identify and promote new IGAs</b>					<b>24,831</b>	<b>24,831</b>	-	-
74	Facilitate value addition and linkage to markets	No.	100	115	1	11,496	11,496		
75	Develop supply contracts for rice and fish	No.	2	3,334	1	6,668	6,668		
76	Link entrepreneurs to markets and micro finance institutions	No.	2	3,334	1	6,668	6,668		
80	<b>Activity 3.10: provide business development support</b>					<b>143,643</b>	<b>143,643</b>	-	-
81	Train agro and natural resource enterprise groups in business skills and marketing	Session	15	4,788	2	143,643	143,643		
82	<b>Activity 3.11: Establish Revolving Fund for Energy Technology</b>					<b>57,083</b>	-	-	<b>57,083</b>
83	Promote wood-saving cook stoves as an alternative energy saving technology	No.	500	69	1	34,488			34,488

SN	ACTIVITY DESCRIPTION	UNIT	QTY	UNIT COST (NOK)	FREQ (DAYS)	AMOUNT (NOK)	WorldFish	LEAD	FRIM	
84	Conduct detailed investigation into urban and rural charcoal use	No.	1	22,595	1	22,595			22,595	
86	<b>OBJECTIVE 4: IMPACTS OF CLIMATE CHANGE MITIGATED THROUGH IMPROVED FOREST MANAGEMENT AND GOVERNANCE</b>							<b>274,402</b>	<b>1,000,698</b>	
89	<b>Activity 4.3: pilot best bet mitigation options</b>						<b>48,268</b>	-	-	<b>48,268</b>
90	Promote fruit tree production among hotspot communities in the basin (includes raising from local sources)	Session	3	4,788	3	48,268			48,268	
92	<b>Activity 4.4: forest management needs addressed in Critical Sites</b>						<b>635,993</b>	-	-	<b>635,993</b>
93	Conduct forest management operations on Zomba Mountain Forest Reserve	Ha	80	3,132	1	250,543			250,543	
94	Rehabilitate fire towers	No.	2	2,637	1	5,274			5,274	
95	Strengthen the operation of fire-fighting gangs	Gang	2	12,608	1	25,215			25,215	
96	Conduct patrols to check illegal forestry activities	Month	11	2,592	2	57,020			57,020	
97	Support reforestation with communities	No.	25	10,002	1	250,060			250,060	
98	Train VNRMC members in tree nursery establishment and management	No.	10	4,788	1	47,881			47,881	
99	<b>Activity 4.5: Facilitate implementation of conservation (Climate Smart) agriculture among hotspot farmers</b>						<b>316,437</b>	-	-	<b>316,437</b>
100	Conduct baseline assessment of soil fertility for selected smallholder farmers	Man-days	20	1,724	1	34,488			34,488	
101	Provide technical support and farm inputs for scaling up CSA	No.	175	1,336	1	233,735			233,735	
102	Train farmers in CSA	No.	3	5,357	2	32,143			32,143	
103	Conduct awareness-raising campaigns (Field Days) to demonstrate the benefits of CSA	No.	3	5,357	1	16,071			16,071	
104	<b>Activity 4.6: Introduce and Promote efficient fuel-saving technologies for households and institutions</b>						<b>25,082</b>	-	<b>25,082</b>	-
105	Promote briquette making and utilization	Week	52	261	1	13,586		13,586		
106	Upgrade Innovative Technologies Learning	No.	1	11,496	1	11,496		11,496		

SN	ACTIVITY DESCRIPTION	UNIT	QTY	UNIT COST (NOK)	FREQ (DAYS)	AMOUNT (NOK)	WorldFish	LEAD	FRIM
	Centre (ITLC)								
107	<b>Activity 4.7: Raise awareness in communities within and outside the Basin on how their energy choices affect NRM</b>					<b>48,140</b>	-	<b>48,140</b>	-
108	Develop awareness raising, training and promotional Materials	Pack	1	48,140	1	48,140		48,140	
109	<b>Activity 4.8: Establish collaborative programs with Norwegian institutions</b>					<b>201,180</b>	-	<b>201,180</b>	-
110	Develop joint E-learning Course on Climate change and facilitate student exchange	L/Sum	1	201,180	1	201,180		201,180	
111	<b>OBJECTIVE 5: MONITORING AND EVALUATION SYSTEM DEVELOPED AND IMPLEMENTED</b>					<b>203,302</b>	<b>186,580</b>	<b>16,721</b>	-
125	<b>Activity 5.4: Conduct Resource Monitoring in Critical Sites within the Hotspots</b>					<b>203,302</b>	<b>186,580</b>	<b>16,721</b>	-
126	Facilitate collection and collation of meteorological data (Rainfall & Temperature)	No.	12	1,393	1	16,721		16,721	
127	Conduct joint monitoring and evaluation of Programme activities	No.	4	3,334	3	40,006	40,006		
128	Conduct preliminary mid-term impact assessment for the programme	man-days	20	1,724	1	34,488	34,488		
129	Conduct mid-term evaluation for the programme	man-days	40	1,724	1	68,976	68,976		
130	Monitor soil erosion	man-days	10	1,437	1	14,370	14,370		
131	Conduct water level and river discharge monitoring	man-days	10	1,437	1	14,370	14,370		
132	Monitor fisheries resources	man-days	10	1,437	1	14,370	14,370		
133	<b>6. PROGRAMME MANAGEMENT AND OVERSIGHT ENHANCED</b>					<b>136,667</b>	-	<b>136,667</b>	-
134	Conduct work planning, budgeting and review meetings	No.	4	6,560	1	26,239		26,239	
135	Hold Programme Management Committee meetings	No.	2	28,714	1	57,428		57,428	
136	Hold Programme Steering Committee meetings	No.	2	26,500	1	53,000		53,000	
137	<b>Total</b>					<b>6,190,806</b>	<b>1,608,347</b>	<b>3,311,746</b>	<b>1,270,713</b>
138	Indirect costs @ 10%					619,081	160,835	331,175	

SN	ACTIVITY DESCRIPTION	UNIT	QTY	UNIT COST (NOK)	FREQ (DAYS)	AMOUNT (NOK)	WorldFish	LEAD	FRIM
									127,071
139	<b>Grand Total for Year 3 (2012)</b>					<b>6,809,887</b>	<b>1,769,182</b>	<b>3,642,921</b>	<b>1,397,784</b>
140	<b>Allocation for year 3 (2012): As per Contract Agreement</b>					<b>6,242,000</b>			
141	<b>Balance carried forward from 2011 Budget (approx. US\$99,000)</b>					<b>569,052</b>			
142	<b>Balance (Cushion)</b>					<b>1,165</b>			
<b>PARTNER CONTRIBUTION TOWARDS THE PROGRAMME IN 2012</b>									
	DESCRIPTION	UNIT	QTY	UNIT COST	FREQ (DAYS)	AMOUNT (NOK)	WorldFish	LEAD	FRIM
	<b>PERSONNEL</b>					<b>805,121</b>	<b>219,390</b>	<b>585,731</b>	<b>-</b>
PC1	Assistant Programme Manager	Man-days	120	2,441	1	292,865		292,865	
PC2	Training Coordinator	Man-days	120	2,441	1	292,865		292,865	
PC3	Assistant Programme Officer	Month	12	1,724	2	41,386	41,386		
PC4	Geo-spatial Analyst	Man-days	72	1,977	1	142,366	142,366		
PC5	MSc Student Intern	Month	3	2,299	1	6,898	6,898		
PC6	MSc Student Intern	Month	8	2,299	1	18,394	18,394		
PC7	Finance/Res Assistant Intern	Month	6	1,724	1	10,346	10,346		
PC8	<b>ESPA Contribution 2012</b>					<b>784,987</b>			
PC9	Indirect Costs	L/Sum		78,796	1	78,796			
PC10	Staff Costs	L/Sum		355,876	1	355,876			
PC11	Travel and Subsistence	L/Sum		58,204	1	58,204			
PC12	Equipment	L/Sum		33,411	1	33,411			
PC13	Other costs	L/Sum		258,700	1	258,700			
PC14	<b>Total Contribution by Other Partners</b>					<b>1,590,107</b>			

**Note: This Budget was translated from US\$ to NOK using the exchange rate: US\$1 = NOK5.748 as provided by National Bank of Malawi on 4th May 2012**

## Appendix E: LCBCAP Risk Register

RISK	LIKELIHOOD Low (<30%) Medium (31-70%) High (>70%)	IMPACT Low Medium High	EFFECT	MITIGATION
Corruption and fraud	Medium	High	<p>Corruption and fraud discourage legitimate business investment and reduce the public resources available for the delivery of services to the poor.</p> <p>Project officers may forego procurement producers in the acquisition of programme goods and services from suppliers with the aim of getting personal benefits from the process. Examples of cases include following wrong procedures, procuring from interested parties and/or sources without disclosure, false certification for goods bought and/or services rendered.</p>	The Programme has put in place a system of checks and balances that ensures accountability, which include use of the Chancellor College Procurement System and other finance and administrative measures that have proved trustworthy over the years.
Local and National scale Political unrest	Low	Medium	Malawi is a young democracy and political unrest cannot be ruled out. In 2011 on July 20 there were some mild political protests in Zomba City and isolated trading centres within the Lake Chilwa Basin like Ntaja and Nsanama in Machinga district which lasted for a day. There were no casualties.	The programme will be monitoring the situation and taking precautionary measures as need arises
Economic meltdown	High	Medium	<p>The influence of global and National economic crises may affect the availability and accessibility of essential commodities and services that support the smooth implementation of the Programme.</p> <p>Scarcity of fuel and forex has been experienced from 2011 to date. The operation of a parallel market for foreign currency is reducing the true value of Foreign Currency operated through Foreign Currency Denominated Accounts.</p>	Still continue to operate the FDA but at the same try to reduce implementation costs through collaboration and synergy with other stakeholders
Major changes and disruption in partner	Low	Low	Major organisational changes are unlikely while staff changes may not have significant effect on programme operations.	The programme is using integrated and participatory approaches to planning and implementation which provides the resource pool

<b>RISK</b>	<b>LIKELIHOOD</b> Low (<30%) Medium (31-70%) High (>70%)	<b>IMPACT</b> Low Medium High	<b>EFFECT</b>	<b>MITIGATION</b>
institutions				for cushioning major changes in partner institutions
Loss and/or damage to programme property	Medium	Medium	The Programme has recently lost one of its vehicles through road accident. Damage to property may also be caused by fire and/or theft.	Precautionary measures are in place to prevent the incidence of theft and fires through installation of security systems. In addition, property has been insured.
Political interference within the implementing communities	Medium	Medium	Politicians and local leaders may distort information and hence frustrate implementation of programme activities. This is usually the case in times of political campaigns.	Increased awareness through various media including Radio Listening Clubs.
Natural Hazards	Low	Medium	Lake Chilwa Basin is prone to extreme weather events such as floods and droughts that may severely affect the livelihoods of the communities supported by the Programme.	The Programme is enhancing the resilience of communities and ecosystems through climate change adaptation initiatives.
Personal safety	Low	Low	Field level staff especially those working in forests may incur injury through falls and snake bites.	Protective gear is provided to field staff and game rangers accompanying field staff in risky environments.