REQUEST FOR CEO ENDORSEMENT

PROJECT TYPE: Full-sized Project
TYPE OF TRUST FUND:LDCF

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PART 1: PROJECT INFORMATION

Project Title:	Climate proofing local development gains in rural and urban areas of Machinga and Mangochi Districts - Malawi		
Country:	Malawi	GEF Project ID	4797
GEF Agency:	UNDP	GEF Agency ID	4508
Other Executing partners	Ministries of Local Government; Agriculture, Irrigation & Water Development; Natural Resources, Energy & Environment, Finance & Development Planning, Public Works, Gender and Communities	Submission Date: Re-submission Date:	April 9, 2014 May 21, 2014
GEF Focal Area:	Climate Change	Duration	60 months
Parent Program:	N/A	Agency Fee ($):	531,820

A. FOCAL AREA STRATEGY FRAMEWORK

FA Objectives	Expected FA Outcomes	Expected FA Outputs	LDCF ($)	Co-Fin ($)
CCA-1: Reduce vulnerability to the adverse impacts of climate change, including variability, at local, national, regional and global level	1.1: Mainstreamed adaptation in broader development frameworks in targeted vulnerable areas	1.1.1: Adaptation measures and necessary budget allocations included in relevant frameworks	512,000	7,000,000
	1.2: Reduced vulnerability to climate change in development sectors	1.2.1: Vulnerable physical, natural and social assets strengthened in response to climate change impacts, incl. variability	3,506,200	9,000,000
Objective CCA-2 - Increasing Adaptive capacity to respond to the impacts of climate change, including variability, at local, national, regional and global level	Outcome 2.1: Increased knowledge and understanding of climate variability and change-induced threats at country level and in targeted vulnerable areas	Output 2.1.1: Risk and vulnerability assessments conducted and updated	500,000	5,000,000
	Outcome 2.2: Strengthened adaptive capacity to reduce risks to climate-induced economic losses	Output 2.2.1: Adaptive capacity of national and regional centres and networks strengthened to rapidly respond to extreme weather events	350,000	8,000,000
Objective CCA -3 - Adaptation Technology Transfer: Promote transfer and adoption of adaptation technology	Outcome 3.1: Successful demonstration, deployment, and transfer of relevant adaptation technology in targeted areas	Output 3.1.1: Relevant adaptation technology transferred to targeted groups	200,000	6,000,000
Project management cost			250,000	1,000,000
Total Project Cost			5,318,200	36,000,000

B. PROJECT FRAMEWORK

Project Objective: Using ecological, physical & policy measures to reduce vulnerability to climate change driven droughts, floods & post harvest losses for rural and urban communities of Machinga and Mangochi Districts of Malawi (reaching over 0.5 million people)					
Component	Type	Expected Outcomes	Expected Outputs	LDCF $	CoFin $
Knowledge forms basis of detailed adaptation planning, infrastructure sighting and policy mainstreaming	INV	Outcome 1: The impact of ecosystems degradation in aggravating vulnerability to climate change risks and reducing resilience of development gains understood and integrated into key decision-making processes at the local, sub-national and national levels; -Knowledge on ecosystems shared in at least five publications accepted for international level publishing	Output 1.1: Information provided on how the state of use and management options of critical resources/ ecosystems/landscapes influence effectiveness of baseline programs and affect resilience of households and local economies (ten publications)	500,000	5,200,000
	INV		Output 1.2: Six comprehensive landscape adaptation plans formulated using the information generated under output 1.1, complemented by community based resilience assessments:		

		-6 comprehensive community based adaptation plans informed by knowledge; -community level indicators for long-term monitoring of adaptation agreed	Output 1.3: Participatory Monitoring, Evaluation, Reflection and Learning (PMERL) formulated and information gathered used in adaptive management and shared widely		
		Outcome 2: Skills and operational capacity of District, EPA and TA level technical officers to support implementation, maintenance and monitoring of the activities under component 1 and to mainstream climate risks into all local developemnt process (skills, legislation, information) -50% improvement in UNDP Capacity Scores -Extension package updated with climate risk management information -New curriculum for Diploma on forestry and 200 forestry diploma graduates (50:50 on gender) -4 District level policies updated with climate risk management provisions. -District Development funds supporting CC issues (directly or indirectly) increase to 3%	Output 2.1: Operational capacity of the extension service increased by more than 50% to enable communities to mainstream climate risk considerations in the implementation of baseline programs (measured by changes in UNDP Capacity Scorecard of various institutions/groups):	862,000	5,300,000
			Output 2.2: Local and national development policies influenced by the project supported pilots to strengthen policies and policy enforcement for climate consideration (At least two policies and 2 District plans revised to mainstream climate risk considerations)		
			Output 2.3: Lessons generated at the project/district level fed into the national climate programme, SLM platform and other national planning debates, to lobby and influence the adoption of climate risk considerations as minimum criteria for accessing agricultural input subsidy benefits		
Ecological and physical works demonstrated as climate smart measures for reducing climate change induced risks to development investments (including productivity gains of the agricultural input subsidy programme)		Outcome 3: Public and domestic water harvesting, storage and distribution reduces climate change driven flooding and regulates availability of water throughout the year in flood & drought hotspots; -At least 10 mini dams and several community based check dams constructed; -At least 35% of 91,674 households harvesting water from rooftops (rural and urban); -At least 5public roads/bridges/dams have measures protecting them from climate induced floods.	Output 3.1: 10 Mini dams[1], water ponds, retention ridges, and water diversion structures constructed (numbers of structures and quantity of water to be confirmed during inception and reported with first PIR)	1,272,000	6,900,000
			Output 3.2 Physical structures to support infrastructure constructed; 35% expansion in number of households that harvest water from rooftops of dwellings:		
		Outcome 4: Rehabilitation of badly degraded forests, protection of riverbanks, lake shores: -covering over 1,300 ha (225ha per hotspot); -100 km of river and 75km of lake shores); -reduce amount of wood used for household energy by over 5 tons; -50% in EPAs reporting severe rates of erosion (baseline 8); - 25% increase in incomes derived from NTFPs and other income generating activities from a low of Malawi Kwacha 2000 per year per participating household	Output 4.1: 13 Village Forest Areas registered and improved forest management/rehabilitation occurring in over 1,300 ha of forests; more than 200km of river and lake shore banks under protection	1,100,000	8,700,000
			Output 4.2: Provision of improved and sustainable supplies of energy, including adoption of sustainable charcoal reduce amount of wood for household energy by over 5 ton)		
			Output 4.3: Diversification of household food basket and incomes via expansion of aquaculture and NTFP improve household welfare for over 458,371 (approximately 91,674 households) to increase household food security while reducing reduce pressure on the forests, river and lake fisheries		
		Outcome 5: Productivity of agriculture supported by adoption of climate smart systems and measures; climate smart agriculture measures being	**Output 5.1:** Adoption of climate smart farming practices including water use efficiency in small scale irrigation systems improved in over 50,000 hectares	1,334,200	8,900,000

[1]A UNDP funded project in Pakistan was instrumental in the construction of some 170 mini dams in a rainfed district [Lachi Tehsil, District Kohat] which has changed the life of people.

		implemented in over 50,000 ha; -Water use efficiency in small scale irrigation systems improved to over 40% from a baseline of 25% -post harvest losses of grains, fruits, vegetables and fish reduced by over 35%; -Less than 30% of 91674 households facing annual food deficits, from current baseline of 60%;	Output 5.2: Climate smart post harvest management practices for grains, fruits, vegetables and fish disseminated to all farmers and fisherfolk in the six hotspots Output 5.3: Two community-based Climate Smart Agriculture Centers established and functional		
Sub Total				5,068,200	35,000,000
Project Management				250,000	1,000,000
Grand Total				5,318,200	36,000,000

C. SOURCES OF CONFIRMED CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME ($)

Type	Name	Type of Co-financing	Amount ($)
National Government	GoM	Grant	34,000,000
GEF Agency	UNDP	Grant	2,000,000
Total Co-financing			36,000,000

D. GEF TRUST FUND RESOURCES REQUESTED BY AGENCY (IES), FOCAL AREA(S) AND COUNTRY(IES)

AGENCY	FUND	FA	Country	Project amount	Agency fee	Total
UNDP	LDCF	CC	Malawi	5,318,200	531,820	5,850,020
Total GEF Resources				5,318,200	531,820	5,850,020

E. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS: N/A

F. DOES THE PROJECT INCLUDE A "NON-GRANT" INSTRUMENT? NO.

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF[2]

A.1 National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NCSA, NIPs, PRSPs, NPFE, Biennial Update Reports, etc.: N/A

A.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities:

1. There is a slight change in the LDCF Focal Area Objectives constributes to; with the inclusion of an additional outcome on Knowledge under CCA 2: Outcome 2.1: Increased knowledge and understanding of climate variability and change-induced threats at country level and in targeted vulnerable areas; Output 2.1.1: Risk and vulnerability assessments conducted and updated. This is highlighted in green in table A: **FOCAL AREA STRATEGY FRAMEWORK**. Consequently, the budget distribution between the Focal Area Objectives was adjusted to reflect the new inclusion. The revised budget is highlighted in green table A too.

A.3 The GEF Agency's comparative advantage: N/A

A.4. The baseline project and the problem that it seeks to address: There was no significant change in baseline except for the following:

- UNDP's baseline program remained the same but the co-finance attached to it was reduced from USD 5 million to USD 2 million. The difference of USD 3 million has been redirected to support the National Climate Change Program, which is an important national up-scaling and sustainability mechanism for the proposed LDCF. This

[2] For questions A.1 –A.7 in Part II, if there are no changes since PIF and if not specifically requested in the review sheet at PIF stage, then no need to respond, please enter "NA" after the respective question.

did not however change the overall co-finance available to the proposed LCDF project as an additional baseline program was identified and added – described below;

- **Agriculture Sector Wide Approach (ASWAp):** Is the main governance and resource support programme of the agriculture sector in Malawi, with the goal of achieving agricultural growth and poverty reduction goals of the Malawi Growth and Development Strategy (MGDS).The focus areas are: Food Security & Risk Management, Commercial Agriculture, Agro-processing & Market Development and Sustainable Agricultural Land & Water management. The two key support services are Technology Generation and Dissemination, and Institutional Strengthening and Capacity Building while the cross-cutting issues are HIV Prevention and AIDS Impact Mitigation and Gender Equity and Empowerment. The ASWAp is consistent with the NEPAD supported Comprehensive African Agricultural Development Programme (CAADP). The ASWAp is implemented by the Ministry of Agriculture and Food Security in collaboration with various stakeholders in the sector, led by the ASWAp Secretariat and through the existing ministerial departments and agencies at National, Regional and District level (e.g. research and extension departments). A multi donor trust fund was established in 2013 tasked with the responsibility of mobilizing resources. Administered by the World Bank, the Trust Fund has so far mobilized USD18million).

- The baseline programs at PIF have been further elaborated and enriched with the hotspot area specifics, as now outlined in the UNDP Project document, and summarized below. The ideal long-term solution and the barriers preventing the stakeholders to achieve it have been refined to reflect the importance of natural systems/ecosystems in tackling vulnerability to climate change, as described below.

Long-term solution and barriers to achieving the solution

1. Climate change increases existing development challenges and brings new ones. In Malawi, climate change impacts on ecosystems are increasing pressure on the natural resources that many people depend on for their wellbeing and livelihoods, further threatening development investments.There are three potential strategies to address the vulnerability and impacts of climate change in Malawi's rural landscapes: planned retreat, protection via engineering, ecosystems based adaptation.
2. **(Planned) Retreat** – The loss of resilience, reduction in food productivity, flooding and droughts are allowed to occur, and human impacts are minimized by opening up new areas for agriculture, combined with food aid, using more agricultural inputs, land use planning, early warning and evacuation systems, risk-based hazard insurance, etc.
3. **Protection** – The impacts of lower resilience and increased predictability/reliability of weather patterns, hazards from droughts and flooding are controlled by soft or hard engineering (e.g., use concrete to build rural houses and roads, etc), reducing human impacts in the zone that would be affected without protection. However, a residual risk always remains, and complete protection cannot be achieved. Managing residual risk is a key element of a protection strategy that has often been overlooked in the past.
4. **Ecosystem based adaptation:** Ecosystem services, for example those provided by the country's forests, aquatic and agro-ecosystems can be a cheap, readily available form of adaptation. Healthy ecosystems play an important role in enhancing food and human security and protecting infrastructure, acting as natural barriers and mitigating the impact of (and aiding recovery from) many extreme weather events, such as flooding, droughts, extreme temperatures, fires, landslides, hurricanes and cyclones. Food security is particularly dependent on people being able to benefit from the flow of ecosystem services, both directly and indirectly (Jamu et al., 2003; MA, 2005; Ricketts et al., 2008; Bharucha and Pretty, 2010).
5. Examples of options associated with each of these strategies are presented in Table 11. All the pilot sites have similar yet specific set of problems and circumstances that render one of the three adaptation strategies more or less suitable. Given the low levels of economic and technological sophistication in the two pilot districts however, the ideal situation would be to adopt an ecosystems based approach to adaptation that incorporates various options from the other two strategies wherever relevant. This would be implemented in a Community

Based Adaptation (CBA) context, which is more effective in enabling climate vulnerable people to plan for and adapt to the impacts of climate change. Healthy ecosystems play a critical role in adaptation, supplying services to support livelihoods and reinforcing development investments, helping to built resilience of livelihoods, thereby reducing vulnerability to disasters, particular climate related risks. In this context, Ecosystem-based Adaptation can directly meet the needs of Community Based Adaptation and poverty reduction initiatives. Sustainable management of forests can store and sequester carbon by improving overall forest health, thereby enhancing mitigation. The management, restoration and protection of ecosystems contributes to sustainable water management leading to improved water quality, higher groundwater recharge and slower surface water run-off during storms. Collectively, the ecosystems approach and the CBA would therefore provide a community-driven approach to adaptation that complements top-down baseline programmes, building the resilience of vulnerable individuals, households, communities and societies from the ground up. This coincides with the vision expressed by the communities during PPG, where about 75% thought that "nature-based" solutions would present the most sustainable option for simultaneously increasing resilience and productivity of their livelihood systems.

6. The proposed LDCF project will undertake measures aimed at sustaining existing infrastructure in rural areas (roads, water and electricity) through flood control and other soil and water conservation measures, which will ultimately induce investment in agriculture and rural banks. The project will increase and stabilize agricultural production through climate smart irrigation development using the ecosystem-based approach, which promotes the integration of upstream and downstream considerations in management. Specifically, this approach will assist in securing catchment areas which are the sources of water for irrigation. In addition, the project will support the construction of small dams, and enhance technical capacity in irrigated agriculture through staff and farmer training; promotion of rainwater harvesting technologies. In line with the New Agriculture Policy, the Project seeks to protect riverine erosion associated with treadle pump and other modes of irrigation through promotion of afforestation and reforestation on riverbanks and intensifying the application of physical and biological soil erosion control measures including the planting of vetiver, napier grass and/or bamboos on river banks. Promoting integrated planning at district level through which the concerns of the various sectors shall form the basis for district and local level development planning.

TABLE 1: Three potential strategies for adaptation in Mangochi and Machinga districts

7. These strategies are a combination of policy and technological options

Retreat	Protect	Ecosystem based
➢ Increase of establish retreat zones ➢ Relocate threatened buildings ➢ Phase out or ban development in areas susceptible to flooding ➢ Rolling easements, erosion control easements ➢ Upland buffers ➢ Emergency planning ➢ Insurance ➢ Modification of buildings to cope with floods (Strengthen and raise) ➢ Improved drainage ➢ Strict regulation in hazard zones ➢ Modification of land use planning	➢ Dikes, levees, floodwalls ➢ Lake walls, bulkheads ➢ Floodgates and tidal barriers ➢ Wetland restoration ➢ Afforestation ➢ Wooden walls ➢ Stone walls	➢ Restoration/Sustainable management of forests, grasslands and rangelands; ➢ Protection of watersheds and riverbanks; ➢ Establishment of diverse agricultural ➢ Systems; ➢ Use of indigenous knowledge of specific crop and livestock varieties; ➢ Maintaining genetic diversity of crops and livestock; ➢ Conservation of diverse agricultural landscapes

8. Despite the large baseline programmes, economic development and livelihoods of the communities in the 2 districts of Mangochi and Machinga (part of the Shire River Basin) are still threatened by uncertainties associated with climate change, particularly floods and droughts. This is because under the business as usual, the baseline programmes fail to integrate additional risks expected from the uncertainties associated with the changing climate, due to the barriers described in the section below.

Barriers 1: Limitations in institutional and individual capacities to plan for climate change

9. Despite the high population of Malawi, there is a severe shortage of skilled and professional staff within the environment sector, especially those with the knowledge and skills for addressing climate change, and even more so for mainstreaming ecosystems based adaptation to local resource uses and development. Both National and District agencies do not have the technical capacity to monitor and address climate change risks, assess vulnerability, or design and implement adaptation measures. As in any Least Developed Country (LDC), specialised training programmes are limited particularly in CC issues. Although the country has recently introduced several higher education degrees in environmental science, spanning from Meteorology, Climatology and Geography courses taught at the various public and private universities, these are still early days, and the reach limited to those within the education system.

10. Capacity deficiencies are particularly acute at the district and local levels. The PPG assessment revealed that about 56% of the technical posts were not filled in the two District structures. Consequently, the number of extension workers available to cover Extension Planning Area or the Traditional Authority Areas is very low, which makes it impossible to cover the entire area and make frequent contacts with local communities. This is compounded by lack of training opportunities. Most extension workers, especially those that have stayed in service for longer periods, do not have adequate knowledge about emerging developmental and environmental issues such climate change, resilience and vulnerabilities. There are no systematic programs for updating the skills of extension workers to keep them current with new national development issues and agendas. This is further exacerbated by the high illiteracy levels among farmers. Most smallholder farmers do not know how to read and write. According to the National Demographic and Health Survey report of 2010, 26.5% of all economically active people in Mangochi and 21% in Machinga have no education at all in contrast with 18.9%, nationally. The majority of those that have no education are females (35.3%) compared with males (17.8%) (National Statistical Office, 2011). This poses a greater challenge to disseminate useful information to rural masses using Information, Education and Communication (IEC) materials.

11. This capacity shortage means that although national development policies (such as National Climate Change Policy, 2012, Malawi's Growth and Development Strategy II and Vision 2020) fully recognize the role of climate change and adaptation in securing national development and livelihoods, actual implementation is still hindered by the fact that, across the board, agencies responsible for natural resources management and local economic development lack the climate risk assessment abilities needed to identify and integrate climate risks and appropriate adaptation response measures into natural resources management, in the context of agricultural led economic development. Consequently, decision makers in the Ministries of Planning and Development, and Finance are currently not yet adequately equipped with skills that can effectively negotiate and coordinate CCA investments through a common framework. Although a coordinating mechanism has recently been established, headed by the Ministry of Environment and Climate Management, it is still new and capacity to effectively coordinate at National level is weak; and, it has no capacity to influence District level planning processes. Consequently, development partners still fund different CC interventions with different sectoral ministries in an uncoordinated way, particularly at the District level. There is therefore still a risk of duplication of CC interventions resulting in a diminished impact on the target communities. Priorities for funding have also been biased towards short term goals e.g. focusing on relief efforts or service delivery in sectors such as education and health as opposed to preparedness, mitigation measures and adaptation strategies that are longer term in nature. Thus awareness of the short and long term consequences of climate change to key ministries such as transport, agriculture, fisheries, health, public works and impact on gender relations in relation to CCA is still weak and matter for concern as a potential barrier to effective CCA.

Barrier 2: Inadequate on-the ground demonstration of ways to climate proof development investments

12. The Government of Malawi is aware that urgent action is needed to address the threats posed by climate change to the country's population and continued sustainable agriculture-led economic development. Malawi's Growth and Development Strategy II and Vision 2020 states that development should be achieved through better adaptation to, and mitigation against, climate change, with a focus on resilience building for Malawi's citizens. The National Climate Change Policy further states that it will create an environment for the development of a country-wide, coordinated and harmonized approach to climate change management, to guide actions that reduce community and ecosystem vulnerability through adaptation and mitigation. It also aims to guide Malawi

to benefit from the global financial, technical and technological opportunities arising from the desire of the international community towards low carbon development.

13. However, there are no proven techniques, tools and methods (or examples) of how the communities can practically climate proof baseline programs, thereby protecting the development gains from further climate risk. This is primarily because the district councils have very limited finance, which compounds the capacity deficit. Like other Least Developed Countries (LDCs), Malawi has high adaptation costs relative to GDP. Adaptation costs are especially high, because of the geography of the country and its dependence on small scale rainfed agriculture, with >40% smallholders in the country with an average landholding of less than 0.28 ha per household. This limits the interest of households to invest in land development, farm mechanization and climate smart agriculture. Currently, the country is facing a range of economic problems including the impacts of the global recession and country's dependence on imports of food, oil and manufactured products. Therefore, budgetary resources for the country's development plan for the next five years are already severely constrained and there are limited resources to meet the additional costs of adaptation.

14. The GoM has shown impressive, albeit declining GDP growth over the past decade ranging from 6.3% (2010) to 4.3% (2011) to 2.0 (2012), expected to rebound to 5.5% (2013) and above 6% in 2014 (IMF 2013[3]). However, even so, poverty remains widespread; declining by less than 2% since 2004/05, highlighting the weak linkages between macroeconomic performance and the bulk of the population in Malawi[4]. Approximately 50% still live below poverty line and most households are unable to meet their food requirements. The country was ranked 170 out of 186 countries in the 2012 UNDP Human Development Report. The Human Development Index was 0.4, below the Sub-Sahara Africa average of 0.463. This wide-spread rural poverty limits the adaptive capacity and capability of individuals, farmers and villagers to respond to natural disasters, flooding, and droughts. Poor farmers/fishermen have limited opportunities to improve yields, increase income, and/or to develop alternative, appropriate farming systems with greater in-built resilience to climate hazards. The challenge ahead still remains to make growth more inclusive and resilient to shocks.

15. Indeed, financial resources available to the public extension service in both Mangochi and Machinga have been decreasing since 1990. During the same period the number of staff has also been decreasing. The Agriculture Sector Wide Approach paper prepared by the Government clearly calls for the districts to prepare annual work plans and access funds, but the districts lack capacity to prepare plans to address the climate change issues holistically. Consequently, very limited resources are allocated to climate change issues. Review of budget allocations for Machinga and Mangochi districts during PPG revealed that the major district budget is allocated for health and education, and less than 2% allocated for agriculture, irrigation, livestock, etc.. The erosion of technical expertise coupled with the worsening financial situation makes the public service largely ineffective and unsustainable. In addition to several positions of the agricultural extension staff being vacant, the dearth of operational funds reduces the ability of the current staff to conduct field visits. As a result, the morale of staff to perform at various levels has markedly decreased especially because of the inadequate funds for day-to-day operations.

A. 5. Incremental /Additional cost reasoning: describe the incremental (GEF Trust Fund/NPIF) financing and the associated global environmental benefits (GEF Trust Fund) to be delivered by the project:

16. The project design is aligned with that of the original PIF in terms of the project goal, objective, broad outcomes and outputs. Two adjustments have however been made: 1) adjustments to the components, outcomes and outputs to reflect findings of the PPG assessments; 2) A more detailed elaboration of the baseline per outcome, to reflect the detailed PPG assessments. These changes are explained below.

Adjustments to the SRF (components, outcomes and outputs);

17. The two main components and six outcomes remain the same; however some of the outputs have been reconfigured either to reflect the findings of the baseline assessment or to improve the logic and flow of the SRF. These changes are explained in the table below, and the new SRF is contained in table A.

[3] http://www.afdb.org/en/countries/southern-africa/malawi/malawi-economic-outlook/

[4] African Economic Outlook, 2011 - http://www.africaneconomicoutlook.org/en/countries/southern-africa/Malawi/).

Table 2: Adjustments to the SRF since PIF

Objective: Using ecological, physical and policy measures to reduce vulnerability to climate change driven droughts, floods and post harvest grain losses for rural and urban communities of Machinga and Mangochi Districts of Malawi (reaching over 0.5 million people)[5]				
Component		**Outcomes**	**Expected Outputs**	**Changes**
Ecological and physical works demonstrated as climate smart measures for water, soil fertility and post harvest management practices that reduce climate change induced risks to the producticity gains of the agricultural input subsidy programme	inv	Outcome 1.1: Public and domestic water harvesting, storage and distribution reduces climate change driven flooding and regulates availability of water throughout the year in flood & drought hotspots	**Output 1.1.1: Public water harvesting and storage:** 3 community based check dams constructed in strategic places to capture and store water, reducing risk of climate change induced floods while regularizing availability of water through wet and dry seasons **Output 1.1.2: Water harvesting from dwellings:** %age of farmers harvesting water from rooftops increase by at least 50% and boosts the percentage of farmers accessing clean domestic water in years of drought from a low of 10% to at least 25% **Output 1.1.3: Water harvesting and use on farms:** percentage of farmers adopting improved water harvesting and retention (such as pools, dams, pits, retaining ridges, etc.) and using it to irrigate crops in the pilot communities increases by at least 25% and increase yields of key crops by more than 30%;	The component content remains the same, but it has now been delegated to component 2 – to reflect the fact that sighting of the water conservation and infrastructure protection structures will be informed by knowledge and comprehensive community based adaptation plans (part of the now much stronger component 1, which was previously component 2). The former outcome 1.1 is now outcome 3. Output 1.1.1 (Public water harvesting and storage) is now the improved output 3.1 *(10 Mini dams[6], water ponds, retention ridges, and water diversion structures constructed (numbers of structures and quantity of water to be confirmed during inception and reported with first PIR); former outpu 1.1.2 (***Water harvesting from dwellings) is now part of the improved output 3.2 (**Physical structures to support infrastructure constructed; 30% expansion in number of households that harvest water from rooftops of dwellings (numbers of structures and quantity of water to be confirmed during inception and reported with first PIR): The previous output 1.1.3 falls between output 3.1 (construction of mini dams and other water harvesting/conservation structures) and the now improved output 5.1 (Adoption of climate smart farming practices including water use efficiency in small scale irrigation systems improved in over 50,000 hectares).
	inv	Outcome 1.2: Landscape level ecological measures complementing physical water management infrastructure to reduce risk of climate change induced floods and enhance resilience against unusually harsh and frequent droughts in selected hotspots (covering over 500,000 ha of farmlands and 6 urban centres):	**Output 1.2.1:** Rehabilitation of badly degraded lands in selected hotspots improves land cover, infiltration and base flow; increasing the ability of the landscape to regulate water flow during droughts and floods, offering ecological protection from climate change induced droughts and floods; **Output 1.2.2:** Adoption of conservation agriculture practices, integration of agroforestry species, short-cycle, drought-tolerant crop varieties and multiple-use tree species by more than 30% of the farmers increases water retention capacity by the soils, reducing impacts of climate	The former outcome 1.2 is now outcome 4. The former output 1.2.1 is now output 4.1 and has been improved to include targets (Output 4.1: 13 Village Forest Areas registered and improved forest management/rehabilitation occurring in over 200,000 ha of forests; more than 200km of river and lake shore banks under protection). Former output 1.2.2 is now output 5.2 and has been improved to include findings of the PPG assessment. Former output 1.2.4 is now part of output 3.2, which deals with adoption of construction of ecological measures supported by some engineering works to protect infrastructure and advance water harvesting from dwellings.

[5] The combined population of the two districts is 980,000 people over an area of 10,000km^2 (Mangochi with 610,239 people over 6,273 km.^{2} , and Machinga has 369,614 people over 3,771 km.^{2})

[6] A UNDP funded project in Pakistan was instrumental in the construction of some 170 mini dams in a rainfed district [Lachi Tehsil, District Kohat] which has changed the life of people.

			change intensified drought by at least 30% **Output 1.2.3:** Water use efficiency in small scale irrigation systems improved by over 40% to address climate induced irregularity of rainfall patterns (drought) while improving productivity of the land by more than 10%. **Output 1.2.4:** Establishment of small-scale flood reduction infrastructure in selected urban areas (such as water diversion structures, gabions, culverts) integrated with ecological measures (such as protective vegetation, hillside terraces planted with perennial trees and shrubs, stone bunds) improve water drainage and reduce damage from intense climate change induced floods.	Two more outputs have been added to deal with challenges highlighted by PPG assessments, which, if not addressed, would compromise the achievements of the rest of the project. These are: Output 4.2 -- Provision of improved and sustainable supplies of energy, including adoption of sustainable charcoal reduce amount of wood for household energy by over 1 ton); and, Output 4.3: Diversification of household food basket and incomes via expansion of aquaculture and NTFP improve household welfare for over 458,371 (approximately 91,674 households) to increase household food security while reducing reduce pressure on the forests, river and lake fisheries.
		Outcome 1.3: Adoption of climate safe post harvest management technologies and practices by > 50% of grain farmers reduce climate induced grain loss by > 30%	**Output 1.3.1:** Skills and institutional arrangements for individual and/or communal climate safe post harvest management practices and storage facilities disseminated, leading to adoption of improved practices by more than 50% and a reduction in post harvest losses of more than 30% of current baseline; **Output 1.3.2:** Financing institutions, local artisans, marketing channels and the extension service set up to support the demonstration, upscaling and sustainability of the improved climate safe post harvest management practices and technologies	The former outcome 1.3 has been relegated to an output (after PPG assessments found that there are challenges more serious than post harvest management practices, although it still needs to be addressed). Both of its former outputs (1.3.1 and 1.3.2) are now part of component 2, outcome 5 (Outcome 5: Productivity of agriculture supported by adoption of climate smart systems and measures), where it has been improved to reflect the need for broader post harvest management processes beyond grains to include fruits, vegetables and fish. It now reads: Output 5.2: Uptake of climate smart post harvest management practices disseminated (measured by number of farmers taking up technology and at least 30% reduction in current post harvest losses in grains, fruits, vegetables, fish by >35%)
Upscaling - Results from outcome 1 used to transform local and national implementation of the baseline programmes, upscaling the resilience	TA	Outcome 2.1: Capacity of District level technical officers to support implementation, maintenance and monitoring of the activities under component 1 and to mainstream climate risks into all local developemnt process (skills, legislation, information,	**Output 2.2.1:** The extension service capacitated with skills (though training) and other support systems to integrate up-to-date information and techniques for mainstreaming climate change risks into the current and future extension support to land users and farmers; **Output 2.2.2:** Research on local impacts of climate change and adaptation techniques supported to provide a scientific backbone to the mainstreaming of climate	As explained above, the former component 2 has been elevated to component 1 to reflect the importance of embedding adaptation planning on scientific and traditional knowledge, and using the information to formulate adaptation plans that guide the sighting of the infrastructure development. The former outcome 2.1 (capacity at District level) is now outcome 2 and has been improved to include improvement of operational capacity of the extension service and provision of skills for the District and Local level technical officers; and to apply the knowledge in mainstreaming climate risk considerations

of the productivity gains and decentralized development processes			change considerations into local development, and linked to extension service for dissemination of more up to date information on weather, risks of drought and flooding to farmers and urban dwellers. **Output 2.2.3**: A participatory M&E system formulated and implemented to monitor effects of the project on the baseline investments and livelihoods; lessons drawn and disseminated through the regional and national platforms (as well as used to support adaptive management); **Output 2.2.4:** District councils, local authorities, district planning units and officers of the Ministry of Finance and Development Planning and National Housing Development Authority trained to recognize climate risk problems in new and existing investment projects and apply/recommend/enforce targeted risk reduction and risk management measures; **Output 2.2.5:** Structural engineers, urban and rural infrastructure planners and teaching staff from technical colleges and vocational training institutes provided with skills on climate-resilient construction, land use and water resources planning	in local development policies and programs. Former output 2.2.3 is now part of outcome 1, output 1.3 – and will be expanded to provide planning, monitoring, reflection and learning, to support the formulation, implementation, learning from and monitoring of the community based comprehensive adaption plans. As now explained in the UNDP Prodoc, these community based comprehensive adaptation plans will be based on a comprehensive analysis of resilience at community level, to be informed by community perspectives of what resilience should be (complemented by the climate science and ecosystems information generated under outcome 1). Although the project will not have the resources to finance implementation of all the provisions of the comprehensive community adaptation plans, it will facilitate the linkage to other donors/funds to finance those components that cannot be financed by the project. This Planning, learning, reflecting monitoring plan will be useful in cultivating funding partnerships. Former outputs 2.24 and 2.2.5 are part of outcome 2 (capacity building/ updating extension package/mainstreaming CC risks);
	TA	Outcome 2.2:– Local and national development policies influenced by the project supported pilots to strengthen policies and policy enforcement for climate consideration in development.	**Output 2.2.1:** Two districts revise local development policy making it mandatory to integrate climate risk considerations in the design, appraisal and approval process of district development, including the implemenaiton of the agricultural input subsidy programme and civil works (infrastructre and building); **Output 2.2.2:** Agreement on, and operationalization of district level institutional arrangement for the long-term implementation of the ecological and physical measures and management plans, including enforcement of environmental regulations identified, and operationalized;	The former outcome 2.2 (mainstreaming CC risks into local development is now an activity under outcome 2, as explained above. Former output 2.2.2 is now an activity under output 3.1 (construction of water conservation/structures). Former output 2.2.4 (A national “Year of Land Care ” is now an activity under outcome 3 (capacity, mainstreaming, sharing lessons) Former output 2.2.5 is now output 3.2 (and includes the “Year of Land Care. Table 2 below presents a detailed list of outputs, potential activities and suggested budget. The changes reflect the findings of the PPG assessments and have improved the

			Output 2.2.3: Two Districts review planning processes to provide greater coherence, coordination and integration between climate change, agricultural-led local development and food security policy processes; **Output 2.2.4:** A national "Year of Land Care " launched to promote wide scale awareness of the cost effectiveness of integrating ecological and physical measures as a means of mitigating impacts of climate change driven floods and droughts; **Output 2.2.5:** Lessons generated at the project/district level fed into the national climate programme, SLM platform and other national planning debates, to lobby and influence the adoption of climate risk considerations as minimum criteria for accessing agricultural input subsidy benefits.	logic and flow of the project.

18. The GEF budget allocated to project components has changed slightly to reflect PPG findings (table below), and is presented by output (provisional). This slight adjustment allows a greater percentage of the funds to support direct interventions on the ground for greater impact on the ecosystem and livelihoods.

Table 3: Indicative activities per output for outcomes 1-3 (component 1)

Outcome/Output	Indicative activities
Outcome 1: The impact of ecosystems degradation in aggravating vulnerability to climate change risks and reducing resilience of development gains understood and integrated into key decision-making processes at the local, sub-national and national levels	
Output 1.1: Information provided on how the state of use and management options of critical resources/ecosystems/landscapes influence effectiveness of baseline programs	➢ Identify the landscapes/ecosystems/natural resources critical for important livelihood support services such as watershed services, reduction of soil erosion, build up of fertility, reduction of flooding, reduction of siltation and eutrophication in the fisheries, etc.; ➢ Undertake assessment of the current state of degradation of these landscapes /ecosystems/natural resources and the likely future scenarios given the trajectory of climate change; ➢ Assess the costs versus benefits of business as usual to the sustainability and effectiveness of the current baseline programs and what management options are likely to yield the optimum benefits of reducing vulnerabilities of community livelihoods and local economies, and/or increasing their resilience;
Output 1.2: Comprehensive landscape adaptation plans formulated using the information generated under output 1.1, complemented by community based resilience assessments:	➢ Agree the lead and implementing partners for the CoBRA assessment; undertake the assessments and analyse information to establish current resilience levels for each target population, factors deemed critical for resilience and action plans necessary to increase resilience, particularly in relation to baseline programs; ➢ Develop the current vulnerability profiles for the different groups of resource users and assess the economic, social and institutional/political context within which adaptation is expected to happen, highlighting how these impact on vulnerabilities to influence effectiveness and sustainability of adaption and baseline programs; ➢ Facilitate the use of data generated in output 1 and the resilience analysis to formulate comprehensive community based adaptation plans;

Output 1.3: Participatory Monitoring, Evaluation, Reflection and Learning (PMERL) formulated and information gathered used in adaptive management and shared widely	➢ Identification and Training of participating community activists and extension workers in participatory M&E system. ➢ Participatory development of process indicators and monitoring schedule to monitor the performance of the project. ➢ Participatory visits of community activists (also from non-project districts) and extension workers to project sites and compilation of monitoring visit report on at least quarterly basis. ➢ Reporting of lessons learnt and best practices from the project, including other similar projects. ➢ Support for the participation of community activists and extension workers in regional and national forums to share the project experiences and success stories. ➢ Monitoring of climatic and environmental indicators in districts and preparation of annual plans based on the indicators. ➢ Production of annual district progress reports and provision of feedback to improve the future plans with the standpoint of climate resilience.
Outcome 2: Skills and operational capacity of District, EPA and TA level technical officers to support implementation, maintenance and monitoring of the activities under component 1 and to mainstream climate risks into all local developemnt process (skills, legislation, information)	
Output 2.1: Operational capacity of the extension service boosted to enable communities to mainstream climate risk considerations in the implementation of baseline programs:	➢ Development of training materials (based on updated training needs assessment from that done at PPG – and directed at implementing the on-the ground adaptation measures described in component 2); might include: 1 week refresher courses for the planners and policy makers at various levels in climate risk reduction and management; Two weeks short course for structural engineers, urban and rural infrastructure staff on climate resilient construction, land use and water resources planning. ➢ Update the extension package with the information gathered from outputs 1 and 2, making them robust in integration of climate risks; ➢ Facilitate partnerships with the relevant on-going developments, projects and institutions to advance the implementation of the comprehensive adaptation plans formulated under output 1.2, including for dissemination of information via community and national media; ➢ Facilitate partnerships with service providers for those components of the comprehensive adaptation plans that cannot be addressed through the project funds; ➢ Formulate and facilitate implementation of communication strategy; ➢ Facilitate the updating of the curriculum of the Diploma and Certificates at the Malawi College of Forestry and Wildlife (MCFW) - Dedza ➢ Facilitate training of 200 forestry diploma students (50:50 on gender) using updated curriculum that incorporates climate change risks to forestry ecosystems;
Output 2.2: Local and national development policies influenced by the project supported pilots to strengthen policies and policy enforcement for climate consideration	➢ Review of current policies / acts for forest, land, water, agriculture, pesticides and food security, enforcement mechanisms and incentive / disincentives under the law and refinement of user-friendly enforcement mechanisms for better operationalization. ➢ Participatory assessment of on-going and in process projects for climate resilience and development of protocols / procedures for the development of climate resilient development plans. ➢ Alignment of on-going and in process projects for climate change risks and modification of designs (where necessary) to manage the climate change risks. ➢ Sensitization of GOM officials, media and communities about the new policies, regulations and enforcement mechanism. ➢ Support for participation of senior level planners and policy makers and staff of universities and colleges in international short courses on climate risk reduction and management.
Output 2.3: Lessons generated at the project/district level fed into the national climate programme, SLM platform and other national planning debates, to lobby and influence the adoption of climate risk	➢ Evidence based advocacy campaigns to influence informed decisions to climate proofing of development gains. ➢ Quarterly briefing to update the district authorities about the progress achieved in promoting climate adaptation technologies and mitigation of risks through the project. ➢ Develop and implement the concept "Year of Land Care": ➢ Development of working paper for the national "Year of Land Care" (YLC) event and its approval from the Govt., other donors and potential partners. ➢ Support for annual symposium organized by EAD to disseminate climate related research findings and emerging issues

considerations as minimum criteria for accessing agricultural input subsidy benefits	➢ Advocacy of the YLC at the national level to mobilize senior Government officials and wider public support for the event. ➢ Production of documentaries (films, booklets) on best practices generated through the project. ➢ Organization of the YLC event at the national level and organization of 'Field Days' throughout the year to disseminate information about sustainable land management, including CSA and climate resilient disaster risk management. ➢ Mobilization of print and electronic media to provide adequate coverage to the YLC. ➢ Compilation of the proceedings of the YLC, printing, and dissemination of proceedings and key messages at a wider scale. ➢ Participation of project experts in national planning debates, conferences, etc., to share the lessons learnt and best practices produced by the project.

Table 4: Indicative activities per output under outcomes 4,5 and 6 (component 2)

Outcome 3: Public and domestic water harvesting, storage and distribution reduces climate change driven flooding and regulates availability of water throughout the year in flood & drought hotspots	
Output 3.1: Construction of mini dams, water ponds, retention ridges, and water diversion structures:	➢ Detailed feasibility study on mini dams, water ponds and community based water diversion structures for infrastructure protection in the entire two pilot districts ➢ Preparation of training manuals, IEC material in local languages, production of manuals and provision of training to communities in improved water harvesting techniques (construction of mini-dams, water ponds, pits, retention ridges, etc.). ➢ Mobilization of DECs, ADCs and VDCs (in-kind contribution of land and labor) and construction of mini dams, water ponds, water channels and water diversion structures to provide water to communities for drinking and irrigation purposes and safeguard infrastructure. ➢ Construction of demo roof-top water collection system and storage tanks for improved domestic water supply. ➢ Tree / shrub plantation and bio-engineering campaigns / activities by the community activists to check siltation and increase life of the dams.
Output 3.2 Construction of physical structures to support infrastructure and expansion of water harvesting from dwellings:	➢ Survey of infrastructure at risk from flooding and other climate risk related disasters; ➢ Identification of best practices for securing infrastructure from floods and winds and other climate change related disasters, based on best experiences in the region and abroad; ➢ Formulation of a plan to implement the measures to secure infrastructure from the identified risks, fundraising for those measures that cannot be financed under the project budget (limited budget); ➢ Construction of small scale flood reduction / water diversion structures gabions, culverts, integrated with ecological measures (such as protective vegetation, hillside terraces planted with perennial trees and shrubs, stones bunds, etc.), some of it through food for work programs; ➢ Agreeing maintenance procedures and schedules, roles and responsibilities ➢ Train at least 50 extension workers and sensitize 1,000 VDC members to construct rainwater harvesting structures (in conjunction with output 1.3); ➢ Design and implement program of cost-sharing and/or cash grants to community members to adopt water harvesting technologies
Outcome 4: Rehabilitation of badly degraded forests, protection of riverbanks, lake shores and urban infrastructure	
Output 4.1: Degraded watersheds (forest ecosystems) rehabilitated, river Banks and Lake shores protected from direct siltation	➢ Using information generated under outcome 1, agree on forest rehabilitation and protection techniques, based on best practices (might include protection of specific areas, enrichment planting and/or protection from fires); ➢ Support the implementation of forest and watershed improvement practices such as enrichment planting, protection from fires, etc.; ➢ Facilitate the registration of the 13 Village Forest Areas, bringing the number of registered community forests to 20. ➢ Support the Village Forest Area management committees to produce and disseminate awareness raising on environmental bye laws related to sustainable management and use of village forest areas; ➢ In conjunction with the capacity building output 1.3, support the Village Forest Area management committees to enforce compliance with community forest management processes, including the control of wild fires, which burn out young seedlings, hampering regeneration. ➢ Facilitate the protection of river banks and lake shores by supporting compliance with the environmental byelaws provisions that prohibits cultivation of annual crops within a certain

	distance.
Output 4.2: provision of improved and sustainable supplies of energy, including adoption of sustainable charcoal	➢ Develop household energy profiles and assess charcoal production from the two districts, to identify inefficiencies and likely intervention measures; ➢ Facilitate demonstration of energy saving technologies, including biogas, solar lamps and cookers, and adoption, particularly in public institutions (schools, hostels, hotels, army camps, jails, etc.); ➢ Facilitate formation of charcoal producer associations and facilitate them to adopt sustainable charcoal production techniques; ➢ Design a cost sharing program for households and charcoal producers to invest in energy efficient technologies; ➢ Facilitate establishment of household energy woodlots using fast growing species
Output 4.3: Diversification of household food basket and incomes via expansion of aquaculture and NTFP reduce pressure on the forests, river and lake fisheries	➢ Assess potential for NTFP based enterprises, learning from numerous lessons available in the country and abroad, select only those that are sustainable, have markets that can be sustained and have potential for boosting incentives for better forest management. ➢ Develop criteria and apply to select potential entrepreneurs, particularly those with existing interest in establishing businesses and can service loans, issued via microloans arrangements. ➢ Develop and apply criteria to select potential fish farmers from amongst the community members; ➢ Design and implement micro-lending program for the establishment of NTFP based enterprises and fish farms; ➢ Provide training for the implementation of the NTFP enterprises and fish farming, to new and old farmers; ➢ Assist entrepreneurs to link with markets and provide training on improved processing and trading.
Outcome 5: Productivity of agriculture supported by adoption of climate smart systems and measures	
Output 5.1: Adoption of climate smart farming practices including water use efficiency in small scale irrigation systems improved	➢ Facilitate access to seeds of high yielding drought tolerant crops such as sweet potatoes and pigeon peas, maize, legumes, groundnuts, sorghums; ➢ Investigate high value markets for unusual crops such as sweet potatoes, sorghums, etc. and facilitate farmers linkages to them; ➢ Assess training needs for farmers on the adoption climate smart agriculture, including improving irrigation practices; ➢ Develop training programs and train farmers on conservation tillage (no/minimum-tillage, ridge plantation, mulching), and water efficient irrigations practices using farmer field schools methodology; ➢ Facilitate access to pumps, in particular solar water pumps coupled with drip irrigation systems, including designing and implement cost sharing scheme to enable farmers to acquire pumps and drip irrigation systems
Output 5.2: Uptake of climate safe post-harvest management technologies and practices by more than 30 % of producers reduce postharvest losses by about 35% for grains, fruits, vegetables, fish	➢ Undertake an assessment of current the post-harvest management practices and losses of grains, fruits, vegetables and fish in the project area and the current post-harvest practices (building on the PPG assessment) and identify best practices. ➢ Support LUANAR to establish a graduate research program on post harvest management technologies involving other partners (teaching, research and extension institutions); ➢ Facilitate production of extension material supporting adoption of better post harvest management technologies; ➢ Train technicians to construct better silos, appropriate technology based equipment for fish handling and processes; ➢ Develop and implement a cost sharing scheme to incentivise a widespread adoption of improved post harvesting technologies for fruits, grains, vegetables, fish, etc.
Output 5.3: establish two community-based Climate Smart Agriculture Centers	➢ Identify potential entrepreneurs with interest and threshold capacity to set up climate-smart agricultural centres as viable business ventures; ➢ Assist the selected entrepreneurs to develop business proposals and to link to financial institutions for capitalization; ➢ Provide some level of support for the initiation of the businesses (training, etc.)

Project Objective, Outcomes and Outputs/activities

19. The **goal** of the project is to secure the development and food security gains from the baseline programs by empowering communities to integrate climate risk considerations in the development policies, plans, projects and actions. The project **objective** is to provide knowledge, tools, capacities and methodologies for the adoption of an ecosystems and community based approach to adaptation. The project's outcomes are as follows:

Outcome 1: The impact of ecosystems degradation in aggravating vulnerability to climate change risks and reducing resilience of development gains understood and integrated into key decision-making processes at the local, sub-national and national levels.

20. **Baseline:** In order to manage the interactions between current and future climate hazards and development, adaptation action needs to be informed by knowledge and information of current and projected climate risks, incorporating as far as possible scientific climate information as well as local, traditional knowledge into local adaptation planning. It also requires to be supported by solid continuous knowledge gathering backed by a system for monitoring changes in contexts and in the effectiveness of responses to changing contexts. Natural resources and ecosystems are degraded in both Machinga and Mangochi. Deforestation and poor agricultural practices lead to soil erosion and siltation and nutrient loading of water bodies, exacerbating the natural resources vulnerability to climate change. This sets off a vicious cycle where degradation of natural resources further increase poverty, often leading to negative capacity and coping strategies, such over fishing, overharvesting of forest resources and land mining. While it is widely accepted that healthy ecosystems provide a cost effective means of reducing vulnerability of livelihoods to climate risks, the technical staff of the two districts do not have the skills or the capacity to generate this knowledge and utilize it in facilitating community based adaptation plans, that would guide the climate proofing of baseline programs in the six hotspots.

21. **Adaptation alternative:** The alternative will change the baseline situation by increasing understanding of how vulnerability of livelihoods and local economies are intertwined with the state of the natural systems. In particular it will assess the nature of the ecosystem goods and services delivered by the key natural, agro-ecological and hydrological systems, their vulnerabilities to climate change and the impacts of the current management practices on ecosystems qualities, vulnerabilities and resilience, and how the state of the ecosystems services in turn affects vulnerabilities and resilience of livelihoods, the local economies and effectiveness of the baseline programs. It will in particular identify ecosystems at risk of tipping over and provide a comprehensive cost benefits analysis of business as usual versus adaptation measures, upon which management options should be based. The project will also facilitate formulation of community based adaptation plans, based on a thorough and holistic analysis of resilience, supported by the knowledge generated above. It will also develop a community based monitoring system to enable stakeholders to understand, monitor and control the changes to the important ecosystems and natural systems that could lead to undesirable shifts that increase the vulnerability of their livelihoods and local economies, and that are difficult and expensive to reverse.

22. The adaptation plans produced from the foregoing process will be comprehensive and their full implementation will be beyond the remit of this project. However, developing them is an important step for the stakeholders: communities will gain skills in assessing vulnerabilities and advance understanding of climate risks. In addition, the plans will provide a conceptual framework that will highlight layers and components of resilience, and define a range of activities, actors and processes that are important parts of a resilience building system. The project will assist the communities and their support institutions to implement those activities relevant to the use of ecosystems/landscapes/natural resources based adaptation measures that increase the effectiveness of the baseline programs, reduce vulnerabilities and build resilience of the livelihoods and local economies. These activities were identified during PPG (in preliminary form) and are described in component 2. It will also assist the communities to link to providers of services identified to be critical for resilience (such as health provision, improvement of infrastructure, etc.). In addition, the community based plans will form a comprehensive tool to advocate for local development with Malawi's development partners at the local and national levels.

23. Besides the baseline programs mentioned in this document, there are many other sources of funds, for example,

the Shire River Basin Management Program Phase I (2012-2018) envisages an investment of US $ 145 million. The Phase II and III aim to invest some 125-150 million during each phase during the period after 2018. The Malawi Agriculture Sector Wide Approach prepared by the Ministry of Agriculture and Food Security in 2010, envisages mobilizing over US $ one billion during the period 2010-2020[7]. The paper clearly mentions that the funds will be pooled, and the districts will have to access the development funds from this pool by submitting the annual work plans. The project team will support the communities to submit their adaptation plans to the District Governments, for funding from these various funds.

24. The proposed alternative has three defining characteristics for this outcome, the use of knowledge on the relatedness of natural systems to vulnerability of livelihoods and the participatory approach and formulation of comprehensive adaptation plans. The alternation approaches are less effective than these two approaches in several ways: on use of knowledge – there is an option of continuing under business as usual; but the lack of comprehensive analysis has in the past caused leakage. For example the oversimplification of agriculture in pursuit of efficiency has led to monocrops, increasing vulnerability of the agro-bio-system and its ability to resist pests and diseases. Inadequate consideration of ecosystems services that are not readily monetized has led to problems such as over fertilization of farms, which when combined with erosion has led to nutrient loading of water bodies, destroying habitats for fish. It is clear that all stakeholders have to start finding "limits of acceptable change" in ecosystems/natural resources, the space within which change can happen without too much long-term destruction of the fundamentals of the life supporting natural systems, where rehabilitation would be too costly.

25. The participatory approach could be replaced by a prescriptive top-down one, where the project formulates adaptation plans without the community involvement and try and enforce them. While this would probably be much cheaper and faster than the preferred consultative approach, experience has shown that such approaches tend to be accompanied by poor implementation due to a combination of factors, chief among them inadequate ownership of the activities/initiatives by communities and poor relevance of selected measures to addressing community needs. This reduces overall impacts and long-term sustainability. Furthermore, the top-down approach constitutes a missed opportunity for community empowerment since it is now proven that CBA constitutes an effective vehicle for building resilience of vulnerable individuals, households and communities from the ground up, while addressing the objectives of wealth creation and poverty reduction. CBA also addresses social drivers of vulnerability including gender inequality and other factors related to social exclusion. It will therefore complement the top-down baseline programs in an excellent manner.

26. The alternative to the comprehensive (integrated) plans would be to focus on one or two aspects of adaptation, such as rehabilitation of watersheds, or irrigation or introduction of drought tolerant crops, or a combination thereof. While this is an often used and legitimate approach to rural development, climate change is a multi-facetted challenge; in order to help communities onto a path of resilience building, it is therefore clear that a multi-faceted approach at scale is required. Besides vulnerability to the impacts of climate change has strong overlaps with poverty and marginalisation. It therefore builds stronger social capital if adaptation initiatives also empower communities to at least consider addressing the underlying development issues, since adaptation is driven by a range of different pressures–or drivers of vulnerability–acting together.

27. The Participatory, Monitoring, Evaluation, Reflection and Learning system to be developed to support the implementation of the comprehensive adaptation plans is particularly a cost effective innovative tool for building adaptive capacity. The system will engage communities in developing and monitoring against CBA indicators, and in doing so provide a new platform for local stakeholders to articulate their own needs, which is a fundamental part of building adaptive capacity. The dual learning and downward-accountability functions of the system presents an opportunity for building and measuring changes in local adaptive capacity as for facilitating the measurement of 'effective adaptation' that can inform the monitoring and reporting needs of stakeholders across scales. The framework also responds to the need for continuous feedback and joint learning and communication in order for CBA to be flexible in light of the challenge of uncertainty.

[7] Ministry of Agriculture and Food Security. 2010. Agriculture Sector Wide Approach: Malawi's prioritized and harmonized agriculture development agenda. Government of Malawi, Lilongwe.

Additional costs of component 1 alternative

28. The detailed outputs and activities to deliver this outcome are outlined in tables 3 and 4 of this CEO Request and detailed in section 2.4 of the UNDP Project document. Generating knowledge and using it in the CBA planning are additional activities to what the Districts would normally budget for and therefore do in their regular development planning and extension service delivery. The Districts will however contribute technical time of the technical teams at the District, Extension Planning Areas, Village Environment Committees, etc. The Districts have committed to seconding key staff to the project (up to a total of 10 per District). The communities in the six hotspots will contribute their time to participate in the planning. This is a significant contribution, although it does not add up to much dollar-wise. This is because the remuneration in Malawi is low and the opportunity cost of time for many community members without formal salaried jobs are very low. This is however boosted by the huge amounts of money being invested by government in the implementation of the baselines.

Institution	Amount
GEF resources requested	500,000
UNDP Co-finance	200,000
Government through district staff and cash for funding baseline programs	5,000,000
Total	5,700,000

29.

30.

Outcome 2: Skills and operational capacity of District, EPA and TA level technical officers to support implementation, maintenance and monitoring of the activities under component 1 and to mainstream climate risks into all local developemnt process (skills, legislation, information)

31. Baseline: The decentralization process provides an opportunity for mainstreaming climate change considerations in the agricultural input subsidy programme. Because local governance and development processes is coordinated by the district councils, mainstreaming mandatory climate change considerations in their policies, programmes and plans would make all local development more resilient to the effects of climate change, including the agricultural input subsidy programme. The country has set up an innovative climate management and coordination institutional arrangements, described in section 2.1.3 of the UNDP Project document. This system, if operational would form an excellent vehicle for mainstreaming climate risk considerations, particularly through the extension service. Currently, the operation of this environmental governance structure at the district level is constrained by inadequate resources.

32. These include: i) inadequate operational resources (human, material and financial) to fully out-scale the success stories; ii) inadequate transport capacity reducing poor mobility and the timely reach of extension service; iii) inadequate integration of up-to-date climate change information in the extension package; iv) inadequate capacity building opportunities for staff; v) inadequate coordination, collaboration and networking amongst service providers; vi) weak linkages between research, extension and farmers, thereby weakening the support of current research to the farming communities. Problems with delivering information at a relevant spatial and time scale.

33. In Machinga is operating at 38% staffing levels, where 87 (62 %) positions of Agri. Extension District Officers are vacant. Mangochi is operating at 44% staffing level, where 56 % of positions are vacant, especially at the EPA level. This is despite incorporating DAPP as a partner under ASWAp to complement the delivery of extension services. In the Crops Department, only 4 out of the 14 established posts are filled. At the EPA level, 3 AEDCs posts are filled out of 11. The District Fisheries Office in Mangochi has 46 established posts out of which only 22 are filled. In addition, the district councils are not yet receiving funds needed to actualize the decentralization process; and, less than 2% of the budgets received directly support mainstreaming climate change risks in local development processes.

34. The low levels of capacities have weakened policy implementation at the ground level. Existing laws often are not applied or enforced. This has led to the widespread adoption practices that undermine many of the critical natural resources such as deforestation, overfishing, destruction of river banks and poor use of soil and water conservation measures, where they exist. There are several challenges in the integration, coordination and synchronization of flood management interventions within and between government ministries and departments, District Assemblies, NGOs and donors. This is manifested, for instance, in the duplication of efforts in flood mitigation, in conflicting policies on the use and non-use of riverbanks for agricultural, and in failed resettlement schemes for flood victims caused by insufficient integration of planning. There is an apparent lack of application of basic principles and approaches of Integrated Water Resources Management (IWRM) and Integrated Flood Risk Management (IFRM).

35. In addition to continuing to expose the gains from the agricultural subsidy programme to the additional risks of climate change, these failures are compromising the sustainability of urban development which is currently threatened by the inadequate integration of measures to reduce impacts of floods on public infrastructure, urban houses, health and livelihoods. Although the upper Shire has only a few small towns, urbanization is projected to grow. Given the low levels of planning in rural towns, urbanization increases the risk of floods by altering the hydrology and the geomorphology of the natural landscape around towns. In Malawi, these are exacerbated by inefficient urban management, inadequate planning, poorly regulated population densities, inappropriate construction practices, ecological imbalances, and poor infrastructure. Disaster risk reduction at the district and local level requires a multi-disciplinary approach, with input and expertise required from many fields. However, the scarcity of resources in the District Assemblies exacerbates the uncertainty in future socio-economic status, making it difficult to invest in physical water management and flood control infrastructure solutions.

36. Adaptation alternative: The project will provide capacity development in two ways: one, to provide resources to

enable government to partner with civil society and the private sector in facilitating communities to mainstream climate risk in the baseline investment programs; and, provide district, TA and EPA technical staff with current skills, tools and technologies to both supervise civil society and private sector engagement with the communities, as well as implement an updated extension service package.

37. In selecting the two approaches, several other options were considered but ultimately rejected for being less cost effective/innovative. These are use of government structures and staff alone or the use of CSO and private sector in facilitating communities to climate proof baseline programs. The approach chosen takes the best of both, and will ensure a partnership where the government creates the enabling environment for the active involvement of CSO and the private sector in advancing rural development. Use of government staff alone is not viable due to the low staffing levels in the two districts; using project funds to fill up vacant positions would be possible, but in addition to the fact that this would be diverting funds from on-the-ground activities, these positions are unlikely to be sustained after the project ends. Use of CSO and/or private sector alone would probably be more cost effective than involving government, in the short term. This would however also pose sustainability challenges as these bodies will be unavailable to maintain the implementation of the extension package in the long-term, which is the role of government. Through the selected approach, the technical staff of the districts will acquire skills and improve understanding of the horizontal and vertical partnerships and linkages required to support mainstreaming of climate risks into development effectively; as well as becoming clear on the role of government in facilitating legitimate partnerships in the realization of climate secure rural development. The CSO and private sector will bring in considerable expertise and speed to the implementation of the ambitious program of work in the limited project timeline.

Additional costs of component 1 alternative

38. The detailed outputs and activities to deliver this outcome are outlined in tables 3 and 4 of this CEO Request and detailed in section 2.4 of the UNDP Prodoc. Updating the skills of existing technical teams with current climate risk training, and engaging the civil society to boost the capacity of the communities to climate proof gains from the baseline investments are new and additional to regular district strategies and budgets. However, once again these activities will build on the impressive baseline program, particularly the strengthening of the extension service and linking it to the Agriculture Sector Wide Approach. The figures are presented in the table below.

Institution	Amount
GEF resources requested	862,000
UNDP Co-finance	300,000
Government through district staff and cash for funding baseline programs	5,000,000
Total	6,162,000

Outcome 3: Public and domestic water harvesting, storage and distribution reduces climate change driven flooding and regulates availability of water throughout the year in flood & drought hotspots

39. Baseline: Historical records from 1960-2006 point to a warming trend, particularly in the southern part of the country: the mean annual temperature has increased by 0.9^{o}C between 1960 and 2006, at an average rate of 0.21oC per decade. The IPCC projects that mean temperature projected to increase by 1.1 to $3.^{0}$C by the 2060's, and by 1.5 to $5.^{0}$C by the 2090. Thus, the future weather is expected to exacerbate current climate variability, leading to more intense cycles of floods and droughts, unpredictable rains; and also exacerbate problems with infrastructure and dwellings, particularly in poor neighbourhoods in the urban areas. Communities in the six hotspots are particularly vulnerable to floods and droughts due to the degradation of the surrounding forests and hilltops.

40. **Adaptation alternative:** The project will support the adoption of landscape level ecological measures complemented by physical water management infrastructure to reduce risk of climate change induced floods and enhance resilience against unusually harsh and frequent droughts in selected hotspots (covering over 500,000 ha of farmlands and 6 urban canters). It will therefore facilitate the construction of public and domestic water harvesting, storage and distribution and small-scale community based flood control structures to reduce climate change driven flooding and regulate availability of water throughout the year in flood and drought

hotspots. It will also support the establishment of ecological structures to protect urban infrastructure, including roads and promote the expansion of water harvesting from rooftops of houses in both urban and rural areas. At least ten mini dams, several check dams, nullahs, culverts, etc. will be constructed. The number of households harvesting water from domestic dwellings is expected to increase to at least 35 from a low baseline of less than 10%.

41. The combination of landscape level ecological measures complemented by physical water management infrastructure is considered innovative and more affordable than a program focusing on engineering structures alone. Yet, due to the high levels of degradation, particularly of the watershed, there is need to include physical engineering measures to slow down speed of water, reduce soil erosion and store water for use during dry seasons, while encouraging the recharge of the water table. This will, indeed, promote the recovery of the natural systems.

Additional cost of outcome 3

42. The government, the private secotr (commercial farms), and individuals have been using dams and other water harvesting infrstructure, including measures meant to protect roads and other infrastructure. However, much of this has not fully factored climate change considerations in the siting or building processes. The project will provide the additional cost of ensuring that such works consider the projected challenges related to the changing climate, to the extent possible. It will also provide the additional cost required to build new and "climate-proofed" structures. The costs are presented in the table below.

Institution	Amount
GEF resources requested	1,272,000
UNDP Co-finance	400,000
Government through district staff and cash for funding baseline programs	6,500,000
Total	8,172,000

Outcome 4: Rehabilitation of badly degraded forests, protection of riverbanks, lake shores and urban infrastructure improves land cover, infiltration and base flow; increasing the ability of the landscape to regulate water flow during droughts and floods, offering ecological protection from climate change induced droughts and floods;

43. Baseline: Mangochi has a total area of 627,300 ha (6,273 km^2) of which 238,374 ha, representing 38 % is classified as forest. Machinga District has two public forest reserves: Liwonde measuring 24,352 ha and Malosa measuring 2,826 ha. The two reserves were established in 1924 but their sustainability is currently threatened by rampant deforestation. Consumption of forest resources is mainly from customary land because of open access regime, which is responsible for deforestation and degradation. The district however has 20 Village Forest Areas (VFAs) out of which only 7, representing 35% are registered while 13 are not yet registered. TA Chiwalo has the most VFAs (5) but they are not registered. TA Nkula has three VFAs, all of which are registered. Registration is a crucial stage in the legitimization of forests in line with standards and guidelines for participatory forestry in Malawi. Degradation is particularly rampant in Ndaje and Matandika (deforestation) and Chaone and Nchilima (degradation through encroachment). Forest fires are among the major causes of environmental degradation and a threat to biodiversity. Such is especially true for Machinga which has experienced an increasing trend of incidence of forest fires plus area of forest damaged by such fire since 2003 (loss of 411 ha of forests since 2003-2012). The fires have mainly been caused by bush fires set by charcoal producers.

44. The pilot districts are also a major source of charcoal consumed in the urban areas (main source of household energy is fuel-wood and charcoal. Although district specific data for charcoal production is not available, it is important to remember that Malawi's energy balance is dominated by biomass accounting for 97% of production; 59% of it used in its primary form as firewood (52%) and residues (7%), the remaining 41% is converted into charcoal in traditional earth moulds at very low thermal efficiencies (less than 10%). As reported in the threats analysis, the four major urban areas use about 6.08 million standard bags of charcoal annually (UNDP[8], Kambewa *et. al.*, 2008), requiring 1.4 million cubic metres of wood and about 15,000 hectares of

[8] Mutimba and Kamoto: Review policies and regulations on charcoal and how to promote a systems approach to sustainable charcoal production

forestland cut per year (Kambewa *et. al.*, 2008). There are no biogas plants or solar heating or cooking in the pilot districts.

45. **Adaptation alternative:** The project will put in place measures to secure the current investments from climate related risks. These will include rehabilitation of badly degraded forests, protection of riverbanks, lake shores and urban infrastructure. This will improve land cover, infiltration and base flow; increasing the ability of the landscape to regulate water flow during droughts and floods, offering ecological protection from climate change induced droughts and floods.

46. The project will in particular facilitate better management, protection and rehabilitation of the community forests amounting to over 220 hectares per hotspot, part of the Phirilongwe and Machinga forests. The project will also support the registration of the 13 Village Forest Areas, bringing the number of registered community forests to 20. It will then support the capacity of the Village Forest Area management committees to enforce compliance with community forest management processes, including the control of wild fires, which burn out young seedlings, hampering regeneration. The project will also facilitate the protection of river banks and lake shores by supporting compliance with the environmental byelaws provisions that prohibits cultivation of annual crops within a certain distance. Communities will be encouraged to plant permanent crops with economic or food security value along river and lake shore banks, such as bananas, fruit trees, elephant grass, etc. Activities to be undertaken will include identification of critical landscapes for rehabilitation, selecting the right measures for rehabilitation, establishing tree nurseries, planting selected multi-purpose trees / shrub species on field boundaries, roadsides and footpath sides, planting of deep-rooted pants species in gullies and creeks on sloping land to control erosion, etc.

47. The project will also facilitate the community to diversify sources of energy and to engage in sustainable charcoal production, building on the experiences, capacity and methodologies being developed for sustainable charcoal by the GEF 4 Land degradation project. Improved energy technologies will include solar lighters and cookers, liquefied petroleum gas (LPG), establishment of biogas from livestock and/or human waste and low energy consuming cookers. This will be supported by establishment of woodlots on individual farms (where possible) and/or community areas. It will also facilitate adoption of biogas from animal and/or human waste in homes and public institutions. A scheme of micro credits and/or grants will be used to encourage uptake. The project will engage a company or an NGO with expertise in rural and decentralized energy to facilitate the output. Finally the project will work with charcoal producers to facilitate adoption of sustainable charcoal, facilitating access to technology for efficient production, processing and consumption. The project will therefore facilitate the formation of charcoal associations and train members on improved charcoaling processes, with a view to obtaining improved charcoaling technologies, based on agreements to comply with the provisions of sustainable charcoaling.

48. The measures selected will reduce pressure on the forest resources; provide a community based forest management (via registration and empowerment of Village Forest Areas and their management committees) and the protection of river and lake shores from direct siltation by planting perennial crops and other measures. These measures have two defining characteristics which make them more innovating than the alternatives considered, which could have been selected. These alternatives include protection of the forests by exclusive use forest guards, perhaps supported by the regular and administration police; outright banning of charcoal production, transportation, marketing or use, and the protection of river and shore lakes at critical points via engineering structures.

49. The use of uniformed forces to protect forests has not been proven to work, due to a combination of reasons, chief among them, the low staffing levels in government structures, including the forest guarding sections; the opportunities for rent seekers, given the ineffective policing, the loss of access to benefits by communities, leading to disillusions which fuels further over exploitation. Banning charcoal production does not work in a country where more than 70% of its urban people don't have means to substitute charcoal, due to the high capital requirement for the switch over to either electricity or gas, and where the police force does not have the capacity to enforce a ban. It however drives the charcoaling business into a chaotic, uncontrolled "black market" affair, where accounting for what is being harvested becomes less possible. Similarly, using

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and use in Malawi: Draft Report for UNDP. 2013

engineering measures to protect the riverine and lake shores from direct siltation can only be done on few strategic places; and, while this is indeed an effective measure, it leaves the greater part of the riverine and lake shores unprotected. Combining these measures provides the optimum conditions for success.

50. **Cost of the alternative**: There are several development partners supporting communities to plant trees in a bid to rehabilitate watersheds. Both Districts are presently engaged in the implementation of Phase II of the Improved Forest Management for Sustainable Livelihoods Programme (IFMSLP) and Machinga is involved in the Lake Chilwa Basin Climate Change Adaptation Programme (LCBCCAP), but these initiatives are not being implemented in the selected hotspot. The Districts have large number of *Eucalyptus* plantations established via past development support, which are contributing to drying up of water bodies, land degradation and loss of biodiversity. These, and the investments from the baseline in support of extension services will provide baseline funds upon which the project will build to ensure forest rehabilitation and management program that is built on the scientific information and community based adaptation plans made under component 1. The cost details are provided below.

Institution	Amount
GEF resources requested	1,100,000
UNDP Co-finance	200,000
Government through district staff and cash for funding baseline programs	8,500,000
Total	9,800,000

Outcome 5: Productivity of agriculture supported by adoption of climate smart agriculture practices:

51. Baseline: As highlighted in the NAPA and the MGDS (Malawi Growth and Development Strategy), Malawi continues to pursue an agriculture-led rural economic development. The Agricultural Input subsidy program provides inputs (fertilizer and seeds), training on improved farming practices, agroforestry and improved post harvest management. Nevertheless, soil erosion continues to compromise the potential of the subsidized fertilizer to increase food production by negatively affecting natural soil fertility. Currently, the basin experiences annual losses of up to 11-50 tons of soil per hectare NAPA (2006) even on a normal rainfall year. The consequent loss of soil organic matter reduces the effectiveness of fertilizer, lowering profitability, and undermining sustainability of the program.

52. In Machinga, cultivated area covers 56% of the district (140,000 ha out of a total of 249,387 ha), out of which 69% is perceived to be experiencing severe erosion. Out of 11 EPAs in Mangochi, 1 (Mthiramanja) experiences the highest vulnerability to soil erosion (described as very severe) followed by the three EPAs of Ntiya, Katuli and Nasenga where the state of erosion is described as severe. Erosion in the other 7 EPAs is considered to be moderate to low. PPG assessments revealed that in Machinga only 24% of household use some aspects of climate smart agricultural such as short cycle and drought tolerant crop varieties. Presently, the district has 161.5 Ha under Conservation Agriculture with the participation 1,544 smallholder farmers (691 male and 853 female).

53. In Mangochi, the area under agro-forestry is estimated at 144.6 Ha with the participation 529 farmers (247 male, 282 female), representing 0.13%. Although about 51% of the households grow fruit trees, the majority grow mangoes and citrus, with over 80% of the trees so old that fruit production is minimal and of poor quality (small fruit with large seed for mangoes). Fruit tree species are usually not prioritized because they take time (3 – 8 years) to bring returns, which is considered too long by most smallholder farmers. Most smallholder farmers look for initiatives that bring quick returns like short cycle crops. On the other hand, most extension workers are also not skilled in fruit tree propagation and this contributes to the low prioritization among the technologies and approaches being propagated. For instance, in Machinga only 4 AEDOs (all male) have fruit tree propagation skills.

54. They major crops grown the in the two impact districts based on area (hectare) under cultivation) are maize, pigeon peas, sweet potatoes, sorghum, groundnuts, cassava, rice and burley tobacco. Other crops cultivated include beans, sunflower, soya bean and cow peas. On an average, over 50 % of all the land under field crops is dedicated to maize production whereas the remaining 50 % is shared among the other dozen crops, and that only signifies the level of importance that is placed on maize as a key crop, not only in this area, but also in

entire Malawi. Comparatively, Mangochi has most of its cropland dedicated to maize production (64 %) compared with the Machinga, which dedicates 40 % to maize production. None of the other crops is allocated more than 15 % of crop land. Furthermore, analysis of the trend in land allocation to various crops for the period 2008/09 to 2011/12 shows a general increase in land allocation to almost all crops except for pigeon peas. Despite being considered as secondary crops, cassava and sweet potato are the highest yielding crops grown in the area (over 15,000 metric tons per hectare) followed by tobacco and maize while millet and cowpeas are the least.

55. The 2010 review of the fertilizer subsidy program reported that long-term sustainability of the fertilizer use on maize produced by smallholder farmers was constrained by profitability and affordability, and recommended substantial reductions in fertilizer prices and/or the development of low cost and accessible financial services. However, development of such financial services for fertilizer use in maize production requires that maize be profitable, that smallholders have other sources of cash income that can be used to repay fertilizer loans when the majority of the maize they produce is for home consumption, and that very low-cost systems are used for loan disbursement and recovery. These measures are difficult because rural credit markets are underdeveloped and the costs of credit administration are too high, as are risks for both borrowers and lenders. Poor infrastructure and high transport costs lead to high input costs, inhibiting the development of input supply systems in less accessible areas. Highly variable maize prices add to the risks of input use (whether purchased with cash or credit)[9].

56. In addition, both districts experience high post-harvest fish losses, although data on losses is currently unavailable. Post harvest losses occurs due to *(inter alia)* poor handling (no chilling after catch and poor cleanliness of the fishing vessels; poor processing methods (use of traditional pit fire for fish smoking, the use of reeds for construction of drying racks instead of chicken wire, poorly spread fish on drying racks, use of unclean facilities and water for washing and processing and long time-lag during processing (fish takes long periods between capture and processing). The species that are mostly affected after catch include: *Usipa, Utaka, Mbaba, Kamnpango, Mlamba and Chambo* in the order of magnitude.

57. **Adaptation alternative:** the project will introduce cheaper and more sustainable ways of making the fertilizer subsidy program more profitable – through the adoption of climate smart farming practices and technologies that reduce soil erosion, increase soil fertility and mitigate the damaging effects of droughts and floods. The use of trees and shrubs in agricultural systems helps tackle the triple challenge of securing food security, mitigation and reducing vulnerability and increasing the adaptability of agricultural systems to climate change. Nitrogen-fixing leguminous trees and shrubs can be especially important to soil fertility where there is limited access to mineral fertilizers, or they increase the use efficiency of added inorganic fertilizers. Studies indicate that fertilizer is more effective in soils with high organic matter. The project will also facilitate diversification of crops, reversing the simplification of the agriculture system that has systematically weakened its ability to secure food supplies for a majority of the families. These measures will also enhance water use efficiency under irrigation, thereby increasing the effectiveness of the agriculture input subsidy and the national irrigation scheme. Measures will include climate smart irrigation practices, conservation agriculture practices, integration of agroforestry species, short-cycle, drought-tolerant crop varieties and multiple-use tree species.

58. The project will also develop skills and institutional arrangements for individual and/or communal climate safe post-harvest management practices and storage facilities. The project will work closely with LUANAR is currently engaged in research on post harvest management measures.

Cost of alternative

Institution	Amount
GEF resources requested	1,334,200
UNDP Co-finance	400,000
Government through district staff and cash for funding baseline programs	8,500,000
Total	10,234,200

[9]Andrew Dorward, Ephraim Chirwa, T.S. Jayne – 2010: Review of the Malawi Agricultural Inputs Subsidy Program, 2005/6 to 2008/9

59. Project Management costs

Institution	Amount
GEF resources requested	250,000
UNDP Co-finance	500,000
Government through district staff and cash for funding baseline programs	500,000
Total	1,250,000

Adjustments have been made in the text of the UNDP Project Document to address the key issues raised by GEFSEC, and STAP during the PIF approval process (see Annex B).

60. Adaptation benefits: Have been further elaborated as decribed in section B2 below.

A.6 RISKS, INCLUDING CLIMATE CHANGE, POTENTIAL SOCIAL AND ENVIRONMENTAL RISKS THAT MIGHT PREVENT THE PROJECT OBJECTIVES FROM BEING ACHIEVED, AND MEASURES THAT ADDRESS THESE RISKS:

61. The risks have been expanded as folows.

Risks and assumptions

62. The success of this project is predicated upon shifting the mindset of district administrations, local authorities and land and resource users to accept and act on two issues: i) that the integration of climate change adaptation in development plans, programmes and land use practices makes economic sense and reduces the risks of climate-induced losses and damages over the long term; ii) that a combination of ecological, physical and policy measures provide a more cost effective means of adaptation, and thus of improving the effectiveness of the baseline programmes. The greatest risk to the project is resistance to the inter-departmental collaboration in a harmonised approach to the project implementation, driven by reluctance to change the sectoral approach to development. An additional risk is that development planners prioritize speed over quality of infrastructure investments, especially if the required coordination and cooperation within the sectors is perceived to be difficult and/or complicated.

63. This risk will be mitigated by creating the highest political support and buy-in of the project initiatives, particularly through the involvement of the Ministries of Finance and Developmentb Planning and Local Government and Rural Development. This has already started during the PPG. The project will have the National Climate Change Technical Committee as the highest policy body, hence providing a strong national to local levels interuction processes. This will allow the project to inform, while being informed by national developments, particularly the implementation of the recently finalized National Climate Chnage Policy. This will be complemented by an awareness raising programme and support to a simplified institutional arrangement for the collaboration. The PPG process raised considerable awareness in the project area about the need to deal with the risks of climate change. This awareness is however of a general nature, raised through the considerable work on climate change conducted by UNDP and other development partners, including local NGOs. What is lacking is specific engagement with the key stakeholders, providing them with specific information, tools and technologies of addressing specific problems. Formulation of the community based adaptation plans and the training programme will provide relevant skills and an incentive for assessing climate risks and mainstreaming mitigation measures in daily life, thruogh policy, developmet programs and land use/resource use practices.

64. Achievement of the project faces the risk of disruption of donor programs including the baseline Farm Input Subsidy Program (FISP). The country is about to go through tripartite elections; following a new government, the nature of many donor programs, including the FISP may change slightly. The FISP program will also undergo a review once a new government is in the office, which might suggest some changes to the implementation. The possibilities include continuation of the FISP in its present form, or reducing its proportion of national budget from 60% of the total agriculture sector budget, to a lower subsidized amount, or a gradual shift towards providing a higher % of the inputs provided on loan or credit, e.g. through the already newly introduced Farm Input Loan Program (FILP). There might therefore be some adjustments related to this review. In mitigation, there is consensus in Malawi that after the Tri-Partite Election in May 2014 agriculture development, including provision or appropriate agricultural inputs, will continue to be the mainstay of economic policy of any incumbent president and party, as also clearly articulated in the different manifestos. Partner support to agriculture, including on quality input provision to needy farmers, is however without

question. Indeed, any changes that might occur to the FISP are likely to be compensated via the Agriculture Sector Wide Approach program, which has now been included as one of the supporting baseline programs.

65. There are two additional risks to the long-term impacts of the project: i) that local systems, capacities and skills are inadequately applied to run and maintain the infrastructure introduced through the project, at a personal and/or common/public level, particularly the small dams, the terraces, soil bunds, and, the improved post harvest management systems: ii) that the political considerations cause a reluctance to linking some of the baseline programs (particularly the agricultural subsidy programme) to adoption by district councils of climate smart policies as a prelequisite for a communities/districts accessing the agricultural subsidy benefits. It is the mitigation of the two risks that forces this project to have a strong linkage to the newly established national climate management institutions, in particular the adoption of the National Climate Change Steering Committee as the top policy guidance body. This Committee is composed of key stakeholders in the field of Climate Change. Chaired by the highly influential Ministry of Development Planning and Cooperation (MDPC), this committee's objective is to provide a forum for effective policy dialogue on frameworks, priority setting, and ways and means of facilitating investment and transfer of technology on climate change initiatives in the country. It also aims to enhance collaborative project development and implementation, with a view to optimizing the contribution of climate change abatement and mitigation programmes to sustainable development, taking into account environmental, social, and economic factors. Day to day operations of the Climate Change Steering Committee is run by the Technical Committee on Climate Change, hosted by the new Ministry of Environment and Climate Change Management. The Technical Committee provides update and information related to national climate change programme and reports to the Steering Committee. They work closely with the Government-Donor Technical Working Group and membership includes stakeholders from all sectors.

RISK ANALYSIS

#	Risk	Type	Description	Impact & probability*	Mitigating Options
1	Weak capacities of the DAESS and other departments at the district level	Operational	At present the capacities of various departments is weak [vacant posts, lack of operational budget and transport] which may slow down the pace of implementation	Impact = 4 Probability = 3 Risk level = 4*3 =12 medium	The program will put a pre-condition for grant to build capacities of the counterpart departments Provision has been made for community development and mobilization staff in the project budget
2	Delayed implementation of baseline project by the GOM negatively affects LCDF project outcomes	Political and operational	Due to lack of budget, operational capacity and proper fund disbursement procedures the implementation rate of program could be slow	Impact = 4 Probability = 4 Risk level = 4*4 =16 medium	The funds could be released to UNDP to spend under cost-sharing or fund management modality. Separate account could be opened and GOM funds could be deposited in it and spent by using UNDP financial rules and regulations, but account is jointly managed by the NPM and NPD
3	Political commitment and will to prioritize climate change	Strategic	Shot-term issues may be prioritized over attention to the medium to longer-term climate change issues. Also some planners and experts do not recognize that climate change is happening	Impact = 4 Probability = 2 Risk level = 4*2 =8 low	Continued advocacy and awareness raising at all levels will be made to ensure that there is commitment to mainstreaming climate change into sector policies, plans and budgets
4	Climate shocks	Strategic	Major disasters may divert	Impact = 3	UNDP and other UN

#	Risk	Type	Description	Impact & probability*	Mitigating Options
	[floods and droughts] occur during the project implementation phase		the attention / priorities of the District Government, shifting their attention to relief / emergency interventions	Probability = 2 Risk level = 3*2 =6 low	Agencies will provide support to District Governments through relief project so that the attention from climate change program is not diverted. This will also be an opportunity to highlight the importance of climate change
5	Community Development Fund [CDF] established under the project may be misappropriated, misdirected, used to support other household needs, or lose its value over time due to inflation	Financial	The CDF fund need to grow over time to maintain its value	Impact = 5 Probability = 4 Risk level = 5*4 =20 High/critical	The project will develop clear operational guidelines, apply them diligently; NTFP and other enterprises will engage both men and women with prior inclination/experience in business. The fund will be maintained in $ account in a bank to protect it from local inflation, further the unspent amount will be invested in high-interest schemes to maintain its value. The service charge collected from communities will also help in keeping its value
6	High illiteracy levels in villages may hinder the progress of pilot interventions and/or dissemination of lessons learned as well as long-term maintenance of mitigation technologies;	Operational	Adoption is promoted by more understanding, knowledge of, etc. Maintenance of the structures and practices introduced necessary for long-term impacts	Impact = 5 Probability = 3 Risk level = 5*3 =15 medium	Train management committees and farmers involved in various interventions to ensure that they understand the tasks at hand. Disseminate project lessons via workshops, television and radio programmes in local languages to ensure that they reach a larger audience.

*Impact scale = 1 low, and 5 is high; Probability scale = 1= low and 5 = high; Risk Level scale 1-25 [impact score * probability score] 1-8 = Low; 9-16 = medium and >16 high

A.7. COORDINATION WITH OTHER RELEVANT GEF FINANCED INITIATIVES:

66. This has been improved to reflect the response to GEF Secretariat comment that by CEO Endorsement, please elaborate on the synergies and complementarities between the proposed project and the two LDCF projects that have been previously approved in Malawi and that address the same NAPA priorities. A detailed analysis is provided in Annex B and table 9 of this CEO Request. The text below has also been added to section 2.3.2 of the UNDP Project document.

67. The implementation of the proposed project will ensure that the LDCF investments builds on all other related investments in the project area (and national level) described in section 1.2, ensuring that it does not duplicate efforts or waste resources. It will be coordinated with the national level initiatives on undertaken by other

development partners, including the 3 GEF financed projects in the Shire Basin; these are the UNDP SLM project, the Africa Development Bank LDCF project on agriculture and climate change and the World Bank led project on natural resources management and climate change. Although all the three projects share similar objectives on adaptation, none of them overlap geographically. PPG assessments confirmed that there is no project in Mangochi and Machinga districts which makes a targeted effort at integrating climate change adaptation and climate risk management principles into the two important baseline programmes (input subsidy and decentralized development).

68. The project will in particular be linked to the GEF and World Bank financed Shire River Basin Management Program. The objective of the program is to develop Shire River Basin planning framework to improve land and water management for ecosystem and livelihood benefits in target areas. The program has three components: the first component focuses on developing a Shire Basin management plan. This component will finance the development of a modern integrated Shire Basin knowledge base and analytical tools, as well as well-planned structured stakeholder consultation processes, in order to facilitate investment planning and systems operation. The second component focuses on catchment management. Its will finance the protectionand rehabilitation of targeted sub-catchments and protection-worthy areas to reduce erosion and improve livelihoods. The third component will focus on improving water related infrastructure. It aims to mobilize new investments enabling improved regulation of shire flows and strengthen climate resilience.

69. While there are similarities between the two projects, the World Bank Funded Shire River Basin Management Project Phase I focuses on the river and its catchment areas which are in the two forest reserves (Mangochi Forest Reserve in Mangochi district and Liwonde Forest Reserve in Machinga). It also covers other districts along the River Shire. The proposed climate proofing project does not work in the forest reserves – the hotspots are close to Phirilongwe forest in Mangochi district and Liwonde Forest (not forest reserve) in Machinga district. There is therefore there is no geographic overlap with the Shire River Basin Management Project.

70. The proposed project will collaborate closely with the GEF-World Bank Program, to ensure that synergies are identified and utilized to improve impacts for both programs. The two programs will in particular share methods, tools and technologies for watershed rehabilitation, improving irrigation practices, climate safe post harvest management practices and training manuals on SLM.

71. It will also be specifically linked to the AFDB project titled “Climate Adaptation for Rural Livelihoods and Agriculture (CARLA)”. The project aims to facilitate formulation of community based resilience building (adaptation palms) and provide the training and materials required to implement components of the action plans. There are more similarities than differences between the IFAD project and the proposed UNDP project. However the main difference between them are that the UNDP project has a greater focus on the role of ecosystems in nature based solutions to reducing vulnerability, and that they are implemented in different districts. The IFAD project will be implemented in Karonga, Dedza and Chikwana Districts while the proposed UNDP project will be implemented in the Machinga and Mangochi districts. The two projects will share training materials, and can facilitate exchange visits between and among communities. The National Climate Change Steering Committee will oversee both projects at the highest policy levels. The project management units will both be represented at the National Technical Steering Committee, where practical ways of synergizing will be explored, and utilized.

B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE:

B.1 Describe how the stakeholders will be engaged in project implementation.

72. The proposed project will coordinate closely with public, private and communal stakeholders that are involved in the Agriculture Input subsidy programme and the decentralized development process, led by the Ministry of Agriculture, Irrigation & Water Development and Local Government and Rural Development respectively, with heavy involvement of the Ministry of Finance and Development Planning, who apart from setting up and distributing budgets, is also the parent ministry for the National Climate Change programme and chair of the Steering Committee. This project will be led by the Minsitry of Local Government and Rural Development, with the involvement of other government, civil society and private sector entities. Execution will be led by the District Councils of Mangochi and Machinga Districts. All the relevant ministries are represented in the District

councils including the following:

- The Ministry of Natural Resources, Energy and Environmental Affairs, which has been instrumental in the formulation of environmental policies, and coordination of their implementation through the other ministries. This includes the national adaptation strategies, which now need to be localized at the district level.
- The ministry of Agriculture, Irrigation and Water development, which drives the agricultural input subsidy programme and is mandated to implement the ASWAp. This ministry hosts the extension service, which is the knowledge hub for drought risk assessment and trains farmer communities on adopting strategies to mitigate negative impacts of climate change on crop production. The ministry has the expertise to train in-service officers on climate change impacts on agriculture and water resources. These programmes are conducted at schools of agriculture and in-service training institutions of throughout the country.
- Ministry of Finance and Development Planning, which approves fiscal flows to regions, monitors the MGDS, and has a stake in ensuring that regional development is balanced and not undermined by environmental risks;
- Ministry of Education, Science and Technology – which is responsible for the development and delivery of basic and higher education, and has a strategic position in ensuring that i) climate change training becomes part of the school curricula; ii) research informs education and the development and/or modification of technologies for addressing climate change risks.
- Transport and Public Infrastructure and Lands, Housing and Urban Development, which are responsible for the infrastructure development, and has a stake in ensuring that climate change risks are factored into existing and new developments, to secure long-term safety.
- Gender, Child & Community Development, responsible for ensuring equitable development across gender and communities.

73. Climate change is affecting women, men and the youth differently in Malawi, making the gender dimension of equality and women's empowerment a critical consideration in the design of the project. The participation of all sectors of the population (men, women, youth) is critical for identifying appropriate adaptation measures and their sustainability. For example, women in Malawi are often in charge of household food security and water management; if they are not consulted about the location of new water collection and storage infrastructure, or their views about household water shortages during dry periods are not integrated into the design of new buffer capacities, the new infrastructure may fail to provide sufficient water security in times of the greatest need. In addition, improper land use planning of new water infrastructure may actually increase women's burdens. Targeting of project driven solutions is enhanced by the complementarities of the specific knowledge and skills of the gender groups, which will increase the precision of responding to their specific needs and ensuring that both benefit equally from the proposed project.

74. Vulnerable communities and local authorities are the key stakeholders of this project and will be engaged in all project components. They will contribute to the ground-truthing of hazard zonation maps and vulnerability profiles; develop skills in recognizing and addressing climate risk issues in village development plans; and benefit from additional investments that make particular investment plans in vulnerability hot-spots more resilient to climate change-related shocks and stresses. NGOs and CBOs which are active and committed to work on issues of natural resource and disaster risk management in the target districts will be trained through the project to work as local partners on the development of community-based adaptation schemes. Existing institutional relationships that have emerged from the Agricultural input subsidy programme will be utilized, thereby saving costs and avoiding risks of duplication.

75. The proposed project will work closely with Universities in Malawi, Research institutions and professional bodies for engineering, architecture, environment, agriculture, irrigation and others as appropriate to source technical expertise. It will form close partnerships with civil society and advocacy bodies to raise the profile of the climate change issue and support project activities, particularly those aimed at building awareness of the decision makers. Partnerships with public sector training institutions such as the Malawi Institute for Development Administration and the Local Government Institute will support training of civil servants under Outcome 2 of the proposed project

76. The natural resource sector of Machinga and Mangochi have multiple stakeholders. During the PPG phase, several stakeholder workshops were held to identify stakeholders as primary, secondary, and tertiary according to livelihood dependence on natural resources. In addition, stakeholder interest and influence were also assessed. The table below summarizes these findings, as well as articulates the role and responsibilities of different stakeholders in project implementation.

B.2 Socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund/NPIF)

77. The project will address the problems of poverty, environmental degradation and climate-led disasters in the project area and will serve as a model for scaling up in neighbouring districts facing similar problems. By ensuring that knowledge of ecosystems services at risk of climate change and the impacts of degradation of natural resources to resilience of local economies and livelihoods form the basis of community based adaptation plans, along with building capacity for the implementation of the natural resources management component of such plans, the project will directly contribute to the MDG Goal 7 "Ensure Environmental Sustainability" (Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources). Assisting the district environment teams to mainstream climate risk considerations in the district development plans will further contribute to the target of mainstreaming sustainable development principles in national development policies. The second component of the project will demonstrate practical tools, technologies and capacities for an ecosystems based, community entrenched adaptation program, focusing heavily on water harvesting and conservation, restoration of degraded forests and watershed management, soil conservation and promotion of climate smart agriculture. These interventions will collectively lead towards environmental sustainability and conservation of natural resources, reduce vulnerability of livelihoods to climate risks and increase household welfare (including incomes) of local communities.

78. The project will also contribute to MDG Goal 1"Eradicate Extreme Poverty and Hunger" (Target 1A: Target 1.A: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day). PPG assessments revealed that communities spend most household income on education and health. The soil conservation activities proposed in the project aims to introduce and expand the area under leguminous crops, which are high in proteins. The current major food items in the project area are carbohydrates (corn and potatoes). It is anticipated that with the availability of high protein crops in the area and increased access to fish, the diet pattern will change towards higher consumption of proteins. Thus the project will also contribute towards the MDG Goals 2-6, which focus on health, education and combating HIV/AIDS.

79. One of the major beneficiaries of the project will be the DAESS and the VDCs, ADCs and DECs, whose capacity will be built in terms of their operationalization which is currently hampered by inadequate financial and technical resources. Component one will provide training of the ADCs and VDCs and facilitate full operationalization of the DAESS. Combined with the implementation of the communication strategy through local and district media, the project will upscale the lessons and capacities delivered through the project to the two districts. Other important beneficiaries of the project will be the planners, policy makers and structural engineers at the national level whose capacity will be built to perform better in the wake of climate change led disasters. Likewise, LUANAR, and Malawi Polytechnic will benefit from the project because of its support for undertaking new research in climate smart agriculture and disaster risk reduction. The new Department of Climate Change Management will also benefit from capacity building activities, improving its support to the other districts in the country. Above all, the information about climate resilience and disaster preparedness and management will be disseminated through various communication means which will be beneficial for public at large. Scaling up of the project initiatives through the capacitated extension service will upscale the local benefits to other districts, hence affect national targets towards the impacted MDGs.

80. At the micro level, the project is expected to benefit approximately 458,371 (approximately 91,674 households considering five persons per household – table 14). The many activities under component 2 will benefit a large percentage of the population. Tree planting campaigns, access to irrigation water, climate smart agriculture, post-harvest management, training in DRR and facilitation for marketing, adoption of high efficiency energy technologies, engagement in NTFP based businesses are amongst the many examples. One of the biggest

challenges within all development programming is how to ensure that individuals and societies adapt beyond the programme cycle of an intervention (in this case beyond 2018). This is crucial to climate change adaptation, because adaptation is a continuous process. People need to acquire the capacity to adapt for generations to come. This project aims to meet immediate needs but also build adaptive capacity for the long-term. This will be done through improving understanding among technical personnel and local communities on the linkages between the social and ecological systems and acquisition of the necessary skills for application of adaptive approaches. In this regard, the communities will in particular benefit from formulating community based resilience plans. Although the project will not have the resources to finance all the components of the resilience plans, the communities will benefit from the strategic thinking that they will go through in formulating these plans, which will indeed increase their understanding of climate change and its likely impacts on current and future investments in livelihood support systems and local economic development. This is empowering, and prepares them to engage other development partners with a list of priority areas for support.

81. It is estimated that women make about 60% of the beneficiaries since most smallholder farming activities and aquaculture are led by women. Direct beneficiaries also include children in the area because of increased food production and possible higher household incomes. As explained in the section above, it is expected that household incomes accruing to women is spent on health, nutrition and education. Indirect project beneficiaries include rural households located in proximity of the hot-spot areas/natural forests and wetlands (including those within national parks and forest reserves and on adjacent customary land) whose improved management under the project will provide a more sustainable natural resource base and additional livelihood options. The motivated DAESS, DECs, ADCs and VDCs in the entire districts and proper spending of the Government co-financing in an environmentally sensitive manner, would help to cover the entire population of the two districts.

Table 5: Population per hotspot

District	Hotspot	Population
Mangochi	TA Nankumba	108,347
	TA Chimwala	112,486
	TA Mponda	109,082
Machinga	TA Chikweo	54,295
	TA Nyambi	48,506
	TA Nsanama	25,655

B.3.Explain how cost-effectiveness is reflected in the project design:

82. Cost effectiveness has been explained under each outcome in this CEO Request, and is provided in section 2.6 of the UNDP Prodoc.

C. DESCRIBE THE BUDGETED M &E PLAN:

83. Project monitoring and evaluation will be conducted in accordance with established UNDP and GEF procedures and will be provided by the project team and the UNDP Country Office (UNDP-CO) with support from the UNDP/GEF Regional Coordination Unit. The Project Results Framework provides performance and impact indicators for project implementation along with their corresponding means of verification. The Adaptation Tracking Tool will be used to monitor the project's impact on adaptation (see Annex 7). The M&E plan includes: inception report, project implementation reviews, quarterly and annual reviews, an independent mid-term review and an independent final evaluation. The following sections outline the principle components of the M&E Plan and indicative cost estimates. The project's M&E Plan will be presented and finalized in the Project's Inception Report following a collective fine-tuning of indicators, means of verification, and the full definition of project staff M&E responsibilities.

Project start:

84. A Project Inception Workshop will be held within the first 2 months of project start with those with assigned roles in the project organization structure, UNDP country office and where appropriate/feasible regional technical policy and programme advisors as well as other stakeholders. The Inception Workshop is crucial to building ownership for the project results and to plan the first year annual work plan.

85. The Inception Workshop should address a number of key issues including:

- Assist all partners to fully understand and take ownership of the project. Detail the roles, support services and complementary responsibilities of UNDP CO and RCU staff vis à vis the project team.
- Discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff will be discussed again as needed.
- Based on the project results framework and the Adaptation Tracking Tool, finalize the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.
- Provide a detailed overview of reporting, monitoring and evaluation (M&E) requirements. The Monitoring and Evaluation work plan and budget should be agreed and scheduled.
- Discuss financial reporting procedures and obligations, and arrangements for annual audit.
- Plan and schedule Project Board meetings. Roles and responsibilities of all project organisation structures should be clarified and meetings planned. The first Project Board meeting should be held within the first 12 months following the inception workshop.

86. An Inception Workshop report is a key reference document and will be prepared and shared with participants to formalize various agreements and plans decided during the meeting.

Quarterly:

87. Progress made shall be monitored in the UNDP Enhanced Results Based Managment Platform. Based on the initial risk analysis submitted, the risk log shall be regularly updated in ATLAS. Risks become critical when the impact and probability are high. Note that for UNDP GEF projects, all financial risks associated with financial instruments such as revolving funds, microfinance schemes, or capitalization of ESCOs are automatically classified as critical on the basis of their innovative nature (high impact and uncertainty due to no previous experience justifies classification as critical). Based on the information recorded in Atlas, a Project Progress Reports (PPR) can be generated in the Executive Snapshot. Other ATLAS logs can be used to monitor issues, lessons learned etc... The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

Annually:

88. Annual Project Review/Project Implementation Reports (APR/PIR): This key report is prepared to monitor progress made since project start and in particular for the previous reporting period (30 June to 1 July). The APR/PIR combines both UNDP and Tracking Tool reporting requirements. The APR/PIR includes, but is not limited to, reporting on the following:

- Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative); Project outputs delivered per project outcome (annual); Lesson learned/good practice; AWP and other expenditure reports; Risk and adaptive management; ATLAS QPR; Portfolio level indicators (i.e. GEF focal area tracking tools) are used by most focal areas on an annual basis as well.

Table 6: Monitoring and evaluation work plan and budget

Type of M&E Activity	**Responsible Parties**	**Budget [US $]**	**Time-frame**
Inception workshop and report	Project Manager, UNDP CO and UNDP GEF	Indicative Cost: $ 10,000	Within first-two months of project start up
Measurement of Means of Verification of project results	UNDP GEF RTA / Project Manager will oversee the hiring of specific studies and institutions to relevant team members	To be finalized in Inception Phase and Workshop	Start-, mid- and end- of project [during evaluation cycle] and annually when required
Measurement of Means of Verification for Project	Oversight by EAD and District Commissioners, PIU, especially	To be determined as part of the Annual Work	Annually prior to APR/PIR and to the

Type of M&E Activity	Responsible Parties	Budget [US $]	Time-frame
Progress	PMERO and implementation teams	Plan's preparation Indicative cost: $ 30,000	definition of annual work plans
APR/PIR	EAD, DAESS, PIU. UNDP CO and UNDP RTA	None	Annually
Periodic status / progress reports	EAD and project team	None	Quarterly
Mid-term Review	EAD, DAESS, PIU, UNDP CO, UNDP RTA, and external consultants	Indicative cost: $ 30,000	At the mid-point of project implementation
Terminal Evaluation	EAD, DAESS, PIU, UNDP CO, UNDP GEFRTA and external consultants	Indicative cost: $ 60,000	At least 3 months before the end of project implementation
Audit	UNDP CO, NPD, PIU	Indicative cost: $ 5,000 per year [25,000 total]	Yearly
Visits to Field sites	UNDP CO, NPD, Government representatives	For GEF supported projects, paid from IA fees and operational budget	Yearly for UNDP, as required by the Government
Total Indicative Cost [excluding project staff time and UNDP staff and travel expenses		US $ 155,000	

Periodic Monitoring through site visits:

89. UNDP CO and the UNDP RCU will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the Project Board may also join these visits. A Field Visit Report/BTOR will be prepared by the CO and UNDP RCU and will be circulated no less than one month after the visit to the project team and Project Board members.

Mid-term of project cycle:

90. The project will undergo an independent Mid-Term Evaluation at the mid-point of project implementation (2016). The Mid-Term Evaluation will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-EEG. The management response and the evaluation will be uploaded to UNDP corporate systems, in particular the UNDP Evaluation Office Evaluation Resource Center (ERC).

91. The relevant Adaptation Area Tracking Tools will also be completed during the mid-term evaluation cycle.

End of Project:

92. An independent Final Terminal Evaluation will take place three months prior to the final Project Board meeting and will be undertaken in accordance with UNDP and SOF (e.g. GEF) guidance. The final evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term evaluation, if any such correction took place). The final evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-EEG.

93. The Final Terminal Evaluation should also provide recommendations for follow-up activities and requires a

management response which should be uploaded to PIMS and to the UNDP Evaluation Office Evaluation Resource Center (ERC). The Adaptation Focal Area Tracking Tools will also be completed during the final evaluation.

94. During the last three months, the project team will prepare the Project Terminal Report. This comprehensive report will summarize the results achieved (objectives, outcomes, outputs), lessons learned, problems met and areas where results may not have been achieved. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's results.

Learning and knowledge sharing:

95. Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Finally, there will be a two-way flow of information between this project and other projects of a similar focus.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT AND GEF AGENCY

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT ON BEHALF OF THE GOVERNMENT

G. ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT ON BEHALF OF THE GOVERNMENT:

NAME	POSITION	MINISTRY	DATE
Dr. A.M. Kamperewera	Director, Environmental Affairs Department, and GEF Operational Focal Point	Ministry of Natural Resources, Energy & Environment	December 9, 2011

H. UNDP CERTIFICATION

This request was prepared in accordance with GEF policies & procedures & meets the GEF criteria for project identification and preparation.					
Agency Coordinator, Agency name	**Signature**	**Date**	**Project Contact Person**	**Telephone**	**Email Address**
Adriana Dinu, Executive Coordinator and Director a.i., UNDP/GEF		May 21, 2014	Veronica Muthui Regional Technical Advisor (Gr-LECRDS)	+27123548124	veronica.muthui@undp.org

ANNEX A: PROJECT RESULTS FRAMEWORK

Applicable Key Result Area [from 2008-11 Strategic Plan]: Environment and Energy
Partnership Strategy: Linkages with UNDAF and CP and the Malawi Growth and Development Strategy and UN partners
Project title and ID [ATLAS Award ID]:
This project will contribute to achieving the following Country Programme Outcome as defined in CPAP or CPD: 3.1 Institutions strengthened to develop and improve policies, strategies and plans for climate change, environmental management, and disaster risk reduction. 3.2 Integrated info systems strengthened for decision-making on disaster risk reduction, climate change and environmental management
Country Programme Outcome Indicators: % of selected districts with microfinance institutions # of women MSMEs established in selected districts # of revised laws, policies and plans # of revised surveys integrating DRR/CC/environment # of districts with residual awareness campaigns
Primary applicable Key Environment and Sustainable Development Key Result Area (same as that on the cover page, circle one): 1. Mainstreaming environment and energy OR 2. Catalyzing environmental finance OR 3. Promote climate change adaptation OR 4. Expanding access to environmental and energy services for the poor. Promote climate change Adaptation
Applicable GEF Strategic Objective and Program: Objective 1: Reduce vulnerability to the adverse impacts of climate change, including variability, at local, national, regional and global level. Objective 2: Increase adaptive capacity to respond to the impacts of climate change, including variability, at local, national, regional and global level Objective CCA -3 - Adaptation Technology Transfer: Promote transfer and adoption of adaptation technology
Outcome 1.1: Mainstreamed adaptation in broader development frameworks in targeted vulnerable areas Outcome 1.2: Reduced vulnerability to climate change in development sectors Outcome 2.1: Increased knowledge and understanding of climate variability and change-induced threats at country level and in targeted vulnerable areas Outcome 2.2: Strengthened adaptive capacity to reduce risks to climate-induced economic losses Outcome 3.1: Successful demonstration, deployment, and transfer of relevant adaptation technology in targeted areas
Applicable GEF Outcome Indicators: 1.1.1 No. of adaptation actions implemented 1.2.10: % change in income generation in targeted area given existing and projected climate change 2.1.1 Relevant threat information disseminated to stakeholders on a timely basis 2.1.2 Vulnerability and risk perception index, disaggregated by gender (Score) 2.2.1. No. and type of targeted institutions with increased adaptive capacity to minimize exposure to climate variability 2.2.2. Capacity perception index (Score) (disaggregated by gender) 21.2.2 Capacity perception index, disaggregated by gender (Score) 2.3.2. % of population affirming ownership of adaptation processes (disaggregated by gender) 3.1.1 % of targeted groups adopting transferred adaptation technologies by technology type, disaggregated by gender (Score)

Objective / Outcome	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
Objective: Using ecological, physical and policy measures to reduce vulnerability to climate change driven droughts, floods and post-harvest grain losses for rural and urban communities of Machinga and Mangochi Districts of Malawi [reaching over 0.5 million people	Improvement in food security for households participating	Over 60% of 91,670 households face food deficits – don't produce enough to last till the next harvest	At least 50% decline in number of households facing annual food deficits (less than 30% still face food deficits)	The PMERL will be used to develop a food security index (identifying key food basket mix) and to measure change annually	That the current political and social support demonstrated by politicians, technical staff, CSO, private sector and communities for mainstreaming climate change considerations into the development processes, especially in order to secure current development gains of the baseline programs continues. That technical staff of the relevant service departments, the CSOs and communities apply learnt skills, and comply with project supported bye-laws and provisions. That communities engage with and utilize the micro credit schemes and/or cash grants and use the funds to upgrade technologies for climate smart agriculture, improved wood/energy efficiencies, irrigation, NTFPs, etc.
	Percent change in soil erosion and siltation of water bodies	Soil erosion estimated at 20 tons/ha/year and 8 EPAs report "severe" rates of erosion	40% reduction in soils going into the water bodies; 50% in EPAs reporting severe rates of erosion	PMERL, project reports	
	Availability of skills and resources necessary to continue adaptation after conclusion of project (indicator for sustainability)	Average scores for communities and institutions on UNDP capacity scorecard is <20% and >40% respectively	UNDP capacity scorecard for communities and technical teams increase to 50% and 75% respectively	Project monitoring systems, district reports, PMERL reports	
Outcome 1: The impact of ecosystems degradation in aggravating vulnerability to climate change risks and reducing resilience of development gains understood and integrated into key decision-making processes at the local, sub-national and national levels	Number of comprehensive community based adaptation plans integrating traditional and technical knowledge;	None	6, one per hotspot	Project monitoring systems, district reports, PMERL reports	That the project can identify and secure the services of a top-notch institute with technical expertise, interest, availability and willingness to work with communities and the government in an applied research mode. That the current political and social support demonstrated by politicians, technical staff and communities for mainstreaming climate change considerations into the development processes, especially in order to secure current development gains of the baseline programs continues
	Community involvement in monitoring vulnerability	No formal systematic means of involving community in monitoring vulnerability	Indicators for monitoring community vulnerability agreed and being actively used	Project monitoring systems, district reports, PMERL reports	
	Quality knowledge products available, shared and being used	No publications on ecosystems, their values and contribution to reducing CC risks	At least 6 knowledge products acceptable for international publishing standards and information evidently	Project monitoring reports, PIRs, publications	

			being used in training, planning & implementation of project program		
	Extension package updated with climate risk management information	Current extension package does not contain climate risk management information	Extension package updated with climate change information and current CC management tools and techniques	Project monitoring systems, district reports, PMERL reports	That the current political support for mainstreaming climate change considerations into the development processes, especially in order to secure current development gains of the baseline programs continues
Outcome 2: Skills and operational capacity of District, EPA and TA level technical officers to support implementation, maintenance and monitoring of the activities under component 1 and to mainstream climate risks into all local developemnt process (skills, legislation, information)	District level policies updated with climate risk management provisions.	Limited content, none fully updated with current CC management/risks issues	4 District level policies updated with climate risk management provisions	Project monitoring systems, district reports	That the current political support for mainstreaming climate change considerations into the development processes, especially in order to secure current development gains of the baseline programs continues Timely implementation of the Training, implementation of activities and timely generation of lessons That political will to allocate a higher proportion of district funds will increase as a result of awareness raising and the mainstreaming of climate risk considerations into the district policies, programs and plans.
	Diploma in Forestry include current climate change content	Outdated curriculum at the College of Forestry, no students receiving training on updated curriculum	New curriculum for Diploma on forestry and 200 forestry diploma graduates (50:50 on gender)	Project monitoring systems, Diploma curriculum, College of Forestry Annual and academic reports	
	Improvement in Capacity Index Score card	On average 50% of positions vacant across local to district levels in both districts; only 25% of current staff have some level of training on CC	Vacant positions less than 40%, 100% of staff in positions have training on CC	Project monitoring systems, district reports, PMERL reports	
	% increase in development funds of the districts	Less than 2% of district funds being allocated to CC related initiatives	At least 3%	Project monitoring systems, district reports	
Outcome 3: Public and domestic water harvesting, storage and distribution reduces climate change driven flooding and regulates availability	Number of physical infrastructures constructed to ensure sustainable water supplies and reduce disaster risks	About 2 mini dams, several check dams (to be confirmed during inception)	At least 10 mini dams and over 100 check dams, nullahs, and other structures	Project monitoring systems, district reports, PMERL reports	Timely completion of water harvesting infrastructure

of water throughout the year in flood & drought hotspots	Number of homes with water harvesting structures	Less than 10% of 91,760 households harvest water from rooftops	Over 35% of 91,760 households harvesting water from rooftops	Project monitoring systems, district reports, PMERL reports	Communities apply learnt skills, engage with and utilize the micro credit scheme and use the funds to upgrade roofing materials and purchase/construct water storage structures
Outcome 4: Rehabilitation of badly degraded forests, protection of riverbanks, lake shores and urban infrastructure	Number of Village Forest Areas registered	7	20	Project monitoring systems, district reports, PMERL reports	Legal process of Village Forest Registration can be completed in 5 years
	Hectares of forests under improved management	410 ha under community forest	At least 1,500 ha under community forest	Project monitoring systems, district reports, PMERL reports	Current political and community support for adopting project initiatives remain high. The Traditional institutions of local resource governance are still respected so enforcement of local bye laws are effective
	Kilometers of river and lake shore under protection	5km of lake shore and about 7km of river banks under protection	At least 100 km of lake shore and 100 km of river banks under protection from direct siltation	Project monitoring systems, district reports, PMERL reports	Current political and community support for adopting project initiatives remain high. The Traditional institutions of local resource governance are still respected so enforcement of local bye laws are effective
	Number of households using alternate and improved energy	Less than 5% of 91,760 households currently use any form of energy efficient technologies	At least 35% of 91,760 households adopt high energy efficient technologies and methods	Project monitoring systems, district reports, PMERL reports	Linkages to the private sector; careful use of the grants/credits to finance purchasing of energy efficient technologies.
Outcome 5: Productivity of agriculture supported by adoption of climate smart systems and measures	No. of hectares on which climate smart farming is practiced	In Mangochi 144.6 ha under agroforestry; only 529 farmers adopting climate smart measures – making 0.13% of population. In Machinga 161.5 ha under conservation Agriculture and 1,544 smallholder farmers participating	Over 40% of 91,670 households engaging in some form of climate smart farming system or practices; area under agroforestry in particular increase to over 5,000 ha; area under CA increase to more than 5,000ha	Project monitoring systems, district reports, PMERL reports	Communities apply learnt skills, overcome biases and cultural and other lethargies to embrace new high yielding, drought tolerant seeds and other climate smart farming measures. Also engage with and utilize the micro credit scheme and use the funds to upgrade farming implements, etc.; and no unusual flood and/or drought that are too intense to be contained by the climate risk management measures adopted by the project
	Percentage increase in productivity per acre or per unit of land	Baselines for all crops in figure 7: Machinga - maize – 1.9tons/h, sorgum – 95 tons/ha, soyabeans 63tons/ha	Over 40% increase over baseline yields for key crops	Project monitoring systems, district reports, PMERL reports	

		in Machinga Mangochi – maize – 1.55, sorgum 66, soyabean 59tons/ha			
	Area under climate smart small holder irrigation	Currently less than 100 hectares despite potential	At least 1000 hectares under climate smart small holder irrigation	Project monitoring systems, district reports, PMERL reports	Communities apply learnt skills, engage with and utilize the micro credit scheme and use the funds to upgrade irrigation technologies; and no unusual flood and/or drought that are too intense to be contained by the climate risk management measures adopted by the project
	Water use efficiency in small holder irrigation	On average water use efficiency lower than 25%	On average water use efficiency increase to >50% in small holder irrigation	Project monitoring systems, district reports, PMERL reports	
	% reduction in post-harvest losses for those engaging	On average approximately 35% of grains, fruits, vegetables, fish are currently being lost to poor post harvest practices	Less than 10% post harvest loss of grains, fruits, vegetables, fish being lost to poor post harvest practices	Project monitoring systems, district reports, PMERL reports	Communities embrace the correct use of post harvest management technologies – in the absence of legal provisions, people may fail to use the technologies correctly, despite the knowledge the advantages to be accrued from adopting.

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF***).***

All the comments from GEF Secretariat were addressed before PIF approval (as per UNDP Response Matrix below).

Comments	Response	Reference in UNDP Project Document
Comments from the GEF Secretariat at PIF stage		
By CEO Endorsement, please describe the targeting principles of the proposed project to demonstrate that the special needs of women and youth are taken into consideration	During PPG, criteria was formulated and applied to select pilot areas, referred to as hotspots in the Prodoc. A hotspot is defined as an area which is highly threatened and/ or vulnerable to climate change, especially floods and drought. This includes areas with resources, developments and populations that are currently relatively better-off but sustainability of which could be adversely affected by the prevailing and/or anticipated bio-physical and socio-economic changes consequent to climate change. An extensive hotspot selection process was conducted during PPG. It included extensive consultations with the District Executive Committees to identify priority issues and possible project areas. This was followed by further consultation with community structures (Agriculture Extension Planning Areas, Traditional Authorities and Chiefs), to confirm areas where the baseline investments (described in section 1.2) were active, and where there were resources under threat from climate risk. The following Hotspot Selection Criteria was then applied to select six most appropriate pilot sites: ➢ Social and economic challenges: population density and the degree and potential impact of environmental and climate related challenges; ➢ Livelihoods support and development potential e.g. availability of surface and ground water resources that create the potential for domestic water sources, climate smart agriculture and aquaculture development; Potential for agriculture-led economic development; ➢ Extent of environmental degradation in critical catchments e.g. deforestation, soil erosion and the potential for restoration; and ➢ Vulnerability to extreme weather events (floods and drought). GIS and Remote Sensing was used to analyse information and produce the vegetation maps showing decline in forest cover since 1990 in the two districts (figure 2 in the PRODC – also shows map of selected hotspots within the districts). This was followed by ground truthing, including participatory discussions of localized vegetation cover change in the six pilot sites. The detailed Hotspot Identification report is in annex 1 of the Prodoc and is available on request, due to size).	Section 1 – on situation analysis, sub-section – Hotspots and Ecosystems in them – in Para 5 and 6
By CEO Endorsement, please elaborate on the synergies and complementarities between the proposed project and the two LDCF projects that have been previously approved in Malawi and that address the same NAPA priorities	Comparisons, differences and synergies are elaborated in table 8 below. In summary: AFDB Project on AFDB Project on Climate Adaptation for Rural Livelihoods and Agriculture (CARLA) and this proposed project: There are more similarities than differences between the AFDB project and the proposed PMIS 4797. They both aim to facilitate formulation of community based resilience building (adaptation palms) and provide the training and materials required to implement components of the action plans. The main difference is the geographical focus. The IFAD project will be implemented in Karonga, Dedza and Chikwana Districts while the proposed UNDP project will be implemented in the Machinga and Mangochi districts. However, the UNDP proposed project has a higher focus on the role of nature based/ecosystems' based approach to reducing vulnerability. Due to the similarity in focus the two projects will share training materials, and can facilitate exchange visits between and among communities.	Presented in section 2.3.2 - Linkages with other relevant SOF (e.g. GEF- and donor- funded) projects – from para 97 onwards

Comments	Response	Reference in UNDP Project Document
	World Bank Shire Natural Ecosystems Management Project and the current UNDP proposed project: The World Bank Funded Shire River Basin Management Project Phase I focuses on the river and its catchment areas which are the two forest reserves (Mangochi Forest Reserve in Mangochi district and Liwonde Forest Reserve in Machinga district). It also covers other districts along the River Shire. The proposed climate proofing project has identified hotspots which are not close to the two forest reserves – the hotspots identified are close to Phirilongwe forest in Mangochi district and Liwonde Forest (not forest reserve) in Machinga district. Although there are similarities in the approaches, there will be no geographic overlap. The proposed project will collaborate closely with the GEF-World Bank Program, to ensure that synergies are identified and utilized to improve impacts for both programs. The two programs will in particular share methods, tools and technologies for watershed rehabilitation, improving irrigation practices, climate safe post harvest management practices and training manuals on SLM. GEF ID 5015: UNDP ID 4958: Title - Implementing urgent adaptation priorities through strengthened decentralized and national development plans and PMIS 4797 (this proposed project) – both UNDP: Although the two projects address the same priorities in the NAPA and have two of the same baseline programs (Decentralisation Policy; Disaster Risk Management (DRM)) the thematic and geographic focus are different: while PMIS 5015 focuses more on mainstreaming climate risk consideration in district and national development plans and policies, PMIS 4797 (the proposed project) focuses more on "on-the-ground implementation of adaptation measures, and strengthening the use of healthy ecosystems/nature based to increase resilience of both livelihoods and natural resources. The pilot areas are different, so there is no overlap of activities on the ground. Both projects will involve facilitation of comprehensive resilience plans and training at both local and district level. The National Climate Change Steering Committee will oversee all four projects at the highest policy levels. The project management units will both be represented at the National Technical Steering Committee, where practical ways of synergizing will be explored, and utilized.	
Comments from Council at PIF stage - None		
Comments from STAP at PIF stage - None		

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Table 7: UNDP's Responses to second roundof GEFSec Review – 13th March 2012.

PIMS 4508/ GEFSec 4797: Malawi LDCF - Climate proofing local development gains in rural and urban areas of Machinga and Mangochi Districts

UNDP's Responses to second round of GEFSec Review – 13th March 2012

GEFSec Comment	Recommended action	UNDP's Response
Section 11 -- Still, the description of the baseline projects remains incomplete. The revised PIF does not describe baseline investments associated with water and soil management practices, including irrigation, water harvesting, conservation agriculture, and flood protection. Indeed, the revised PIF notes that there are numerous projects and initiatives that support land management practices, but does not treat these as part of the baseline on which the proposed LDCF project would build. Similarly, with respect to post-harvest management, the revised PIF notes that a part of the Agricultural Input Subsidy Program works to reduce post-harvest losses, but it does not discuss these activities in any detail nor does it demonstrate the extent to which they are vulnerable to climate change.	(i) Please include, among the baseline projects and programs, relevant investment projects and initiatives associated with water and soil management, including irrigation, water harvesting, conservation agriculture and flood protection, and demonstrate the extent to which such initiatives fail to address the effects of climate change on agricultural production and productivity in the targeted districts. Moreover, (ii) kindly elaborate on the post-harvest management activities supported through the Agricultural Input Subsidy Program and demonstrate the extent to which they are vulnerable to climate change.	Done. 6 baseline projects are now included covering water and soil management practices including irrigation, water harvesting, conservation agriculture, and flood protection. They are: Government Flood risk management strategy and the Shire Integrated Flood Risk Management; The National irrigation Expansion Strategy and the Irrigation, Rural Livelihoods and Development project (IRLADP); Transforming agriculture through conservation agriculture in Malawi and the Malawi Agroforestry Extension Project (MAFE). All new text on baseline programs/projects is in green in Section B1 Paras 12, 13, 18, 19, 20, 21
Section 13 - While the linkages between components 1 and 2 have been improved, the revised submission does not clearly demonstrate that the project components are based on additional reasoning. In particular, activities associated with outcomes 1.1 and 1.2 do not appear to build on and enhance the resilience of current or planned investments in water and soil management, including irrigation, water harvesting, conservation agriculture and flood protection. With respect to Outcome 1.3, the additional reasoning of the proposed LDCF grant vis-Ã -vis the Agricultural Input Subsidy Program should be strengthened	Upon addressing the updated recommendations under Section 11 above, please demonstrate that Component 1 is based on additional reasoning	The additionality argument for outputs 1.1 and 1.2 has been strengthened by adding the 6 baseline projects related to soil and water management practices (described in 11 above) and the text in green in paras 22-26. The additionality for output 1.3 has been strengthened by providing an explanation of what the national subsidy program is doing towards reducing post harvest management practices, in green text in para 17; noting that these activities are delivered through the district extension service system.
Section 14 - The project framework has been streamlined and clarified with only two outcomes and select outcomes and outputs have been removed or clarified as recommended. Still, the revised project framework is slightly inconsistent with the description of the additional reasoning in Section B.2 of the PIF. The latter cites an Outcome 1.4, which appears to fall under Outcome 2.1 in the former. Also, the numbering of outputs in the project framework should be revisited for clarity and consistency	Please ensure that the outcomes and outputs are consistently organized and numbered across the documentation.	Additionality reasoning improved through the addition of baseline programs and the accompanying analysis og how they fail to remove risks from climate change (as described in cell 11 above). Outcome 1.4 has been removed – since it was duplicated in component 2; the numbering of outputs in outcome 1.3 has now been corrected.
Section 15 - Please address updated recommendations under sections 11 and 13 above.		Done as explained in cell 11 and 13 above.

Section 16 - While the revised PIF provides the total population in the targeted districts, it does not clarify the number of people or households that would directly benefit from the pilot adaptation measures carried out under Component 1. Also, it is not entirely clear whether the percentages of people provided in the outputs refer to the total population of the two districts	Please provide an estimate of the number of people that would directly benefit from the pilot adaptation measures carried out under Component 1	Done – the total population of the two districts (combined) is about 1 million; the project will reach 25% - about 250,000 people.
Section 19 - The revised PIF provides a stronger description of coordination with other related initiatives. Still, while the PIF notes that there are numerous projects and initiatives that support land management practices, such projects and initiatives are not reflected in the baseline nor among the other related initiatives. Similarly, there is no mention of any initiatives associated with irrigation, water harvesting, conservation agriculture or flood protection in the targeted districts.	Upon addressing the updated recommendation under Section 11 above, please revisit the description of other related initiatives.	Done – Section B6 para 60 now explains that the project be closely coordinated with all the programs and projects described in the baseline section. The section then describes additional projects which, although not strictly baseline to the proposed project, are relevant, and which it will be coordinated closely with.
Section 24 - Please address the updated recommendations under Section 13 above.		Done as described in cell 13 above.
Section 25 - Section C.1 still refers to parallel co-financing. Moreover, the projects and initiatives presented in this section should be included among the baseline projects if the proposed LDCF would build on them. Also, it is not clear how the co-financing figures provided in Table B relate to the amounts associated with the baseline projects in Section B.1.	Upon addressing recommendations under sections 11 and 13 above, please ensure that co-financing figures are consistently reported across the documentation and that all parallel co-financing be removed from such figures	Done – Parallel co-financing has been removed. In addition (and as explained in 24 above), the projects in section C1 are relevant to the project but because there is a considerably large baseline already, these projects will be coordinated with the proposed project, in addition to the baseline programs and projects. The co-finance figure reported in the project framework forms that part of the national baseline being directed at the two districts. There is now a footnote explaining this fact; in addition, the co-finance has been increased to reflect the additional baselines now included.

Table 8: COMPARISONS, DIFFERENCES AND SYNERGIES BETWEEN THE FOUR LDCF PROJECTS IN MALAWI

Project	Scope	Baseline programs	Pilot Districts	Main differences	Synergies
AFDB Project on Climate Adaptation for Rural	Focused on community adaptation plans and implementation of action plans for improving resilience of agriculture, including watershed	Malawi Growth and development strategy	Karonga, Dedza, Chikwana	There are more similarities than differences between the AFDB project and the proposed PMIS 4797. They both aim to facilitate formulation of	Due to the similarity in focus the two projects will share training materials, and can facilitate exchange visits between and

Livelihoods and Agriculture (CARLA)	management to reduce flooding and vulnerability			community based resilience building (adaptation plans) and provide the training and materials required to implement components of the action plans. The main difference is the geographical focus. The IFAD project will be implemented in Karonga, Dedza and Chikwana Districts while the proposed UNDP project will be implemented in the Machinga and Mangochi districts. However, the UNDP proposed project has a higher focus on the role of nature based/ecosystems' based approach to reducing vulnerability.	among communities. The National Climate Change Steering Committee will oversee both projects at the highest policy levels. The project management units will both be represented at the National Technical Steering Committee, where practical ways of synergizing will be explored, and utilized.
World Bank Shire Natural Ecosystems Management Project	The objective of the program is to develop Shire River Basin planning framework to improve land and water management for ecosystem and livelihood benefits in target areas. The program has three components: the first component focuses on developing a Shire Basin management plan. This component will finance the development of a modern integrated Shire Basin knowledge base and analytical tools, as well as well-planned structured stakeholder consultation processes, in order to facilitate investment planning and systems operation. The second component focuses on catchment management. Its will finance the protection and rehabilitation of targeted sub-catchments and protection-worthy areas to reduce erosion and improve livelihoods. The third component will focus on improving water related infrastructure. It aims to mobilize new investments enabling improved regulation of shire flows and strengthen climate resilience.	Malawi Growth and development strategy		The World Bank Funded Shire River Basin Management Project Phase I focuses on the river and its catchment areas which are the two forest reserves (Mangochi Forest Reserve in Mangochi district and Liwonde Forest Reserve in Machinga district). It also covers other districts along the River Shire. The proposed climate proofing project has identified hotspots which are not close to the two forest reserves – the hotspots identified are close to Phirilongwe forest in Mangochi district and Liwonde Forest (not forest reserve) in Machinga district. Although there are similarities in the approaches, there will be no geographic overlap.	The proposed project will collaborate closely with the GEF-World Bank Program, to ensure that synergies are identified and utilized to improve impacts for both programs. The two programs will in particular share methods, tools and technologies for watershed rehabilitation, improving irrigation practices, climate safe post harvest management practices and training manuals on SLM. This collaboration will be ensured through the River Shire Basin Authority (currently under formulation), which will coordinate all the developments in the Shire Basin. Further collaboration is being ensured through the GEF funded and UNDP implemented Sustainable Land Management programme (PIMS 2085), as it works towards improved SLM in the Shire River Basin, with the UNDP SLM project concentrating on the Districts of Balntyre, Neno, Mwanza and Balaka in the

					Middle Shire.
GEF ID 5015: UNDP ID 4958 Title - Implementing urgent adaptation priorities through strengthened decentralized and national development plans.	Local to district to Provincial to national. The project focuses on mainstreaming climate risk considerations into development policies and plans at local, regional and national levels; supported by adaptation plans at local level with implementation of some aspects of the adaptation plans, and feeding lessons learned back into local, district and national climate change adaptation planning efforts.	Decentralisation Policy; Disaster Risk Management (DRM). MGDS; UNDP Environment and Natural Resources Management Programme Support Document to Malawi (2012 – 2016)	Nkhata Bay, Zomba and Ntcheu.	Although the two projects address the same priorities in the NAPA and have two of the same baseline programs (Decentralisation Policy; Disaster Risk Management (DRM)) the thematic and geographic focus are different: while PMIS 5015 focuses more on mainstreaming climate risk consideration in district and national development plans and policies, PMIS 4797 (the proposed project) focuses more on climate proofing on-going development plans in the target districts, through "on-the-ground" implementation of adaptation measures, and strengthening the use of healthy ecosystems/nature based to increase resilience of both livelihoods and natural resources. The pilot areas are different, so there is no overlap of activities on the ground	Both projects will involve facilitation of comprehensive resilience plans and training at both local and district level. The National Climate Change Steering Committee will oversee both the projects, through the National Climate Change Technical Committee. This will ensure effective exchange of materials, experiences and lessons.

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS[10]

A. DESCRIBE FINDINGS THAT MIGHT AFFECT THE PROJECT DESIGN OR ANY CONCERNS ON PROJECT IMPLEMENTATION, IF ANY:

NA

B. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES FINANCING STATUS IN THE TABLE BELOW:

PPG Grant Approved at PIF: 100,000			
Project Preparation Activities Implemented	GEF/LDCF/SCCF/NPIF Amount ($)		
	Budgeted Amount	Amount Spent To Date	Amount Committed
Component 1 – Technical Definition and Capacity Needs Assessment	70,000	65,000	5,000
Component 2 – Institutional arrangements, Monitoring and Evaluation	30,000	30,000	0
Component 3 – Stakeholder Consultations	40,000	40,000	0
Component 4: Financial planning and co-financing definition	10,000	7,000	3,000
Sub-total (GEF)	150,000	142,000	8,000
Sub-total (Cash co-financing from UNDP)	70,000	55,000	15,000
Total	220,000	197,000	23,000

ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used**)**

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/NPIF Trust Fund or to your Agency (and/or revolving fund that will be set up)

N/A

[10] If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities.