GEF-6 REQUEST FOR PROJECT ENDORSEMENT/APPROVAL

PROJECT TYPE: FULL SIZED PROJECT
TYPE OF TRUST FUND:GEF TRUST FUND

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PART I: PROJECT INFORMATION

Project Title: Enhancing the Resilience of Agro-ecological Systems Project (ERASP)			
Country(ies):	Malawi	GEF Project ID:[1]	9138
GEF Agency(ies):	IFAD	GEF Agency Project ID:	
Other Executing Partner(s):	Ministry of Agriculture, Irrigation and Water Development	Submission Date:	21 Feb 2017
GEF Focal Area (s):	IAP Set Aside	Project Duration (Months)	84
Integrated Approach Pilot	IAP-Cities ☐ IAP-Commodities ☐ IAP-Food Security ☒		Corporate Program: SGP ☐
Name of Parent Program	Fostering Sustainability and Resilience for Food Security in Sub-Saharan Africa	Agency Fee ($)	

A. FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES[2]

Focal Area Objectives/Programs	Focal Area Outcomes	Trust Fund	(in $)	
			GEF Project Financing	Co-financing
LD-1 Program 1	Outcome 1.2 Functionality and cover of ecosystems maintained Outcome 1.3 Increased investments in SLM	GEFTF	2,057,313	25,126,316
LD-3 Program 4	Outcome 3.2 Integrated landscape management practices adopted by local communities Outcome 3.3 Increased investments in integrated landscape management	GEFTF	1,610,100	19,664,427
LD-4 Program 5	Outcome 4.2 Innovative mechanisms for multiple-stakeholder planning and investments in SLM at scale	GEFTF	536,700	6,554,809
BD -3 Program 7	Outcome 7.1 Increased genetic diversity of globally significant cultivated plants and domesticated animals that are sustainably used within production systems.	GEFTF	278,503	557,006
BD-4 Program 9	Outcome 9.1 Increased area of production landscapes and seascapes that integrate biodiversity conservation and sustainable use into their management	GEFTF	1,063, 247	15,830,016
CCM-2 Program 4	Outcome A Accelerated adoption of innovative technologies and management practices for GHG emission reduction and carbon sequestration	GEFTF	1,610,100	19,664,426
	Total project costs		7,155,963	87,397,000

[1] Project ID number remains the same as the assigned PIF number.
[2] When completing Table A, refer to the excerpts on *GEF 6 Results Frameworks for GETF, LDCF and SCCF*.

B. PROJECT DESCRIPTION SUMMARY

Project Objective: Enhance the provision of ecosystem services and improve the productivity and resilience of agricultural systems of vulnerable rural poor.						
Project Components/ Programs	**Financing Type[3]**	**Project Outcomes**	**Project Outputs**	**Trust Fund**	**(in $)**	
					GEF Project Financing	**Confirmed Co-financing[4]**
Multi-stakeholder institutional framework for integrated catchment area management	TA	At least 5 sub Catchment Management Committees (sub-CMC) in place as an effective NRM planning and coordination mechanism	1.1 1050 people trained in catchment area management and climate change risk reduction through community awareness and training plan, and sub-CMCs established; 1.2 At least 5 catchment area plans developed and approved by sub-CMCs. 1.3 66 Village natural resources management committees (VNRMC) established/ strengthened and implementing CAMP priority actions.	GEFTF	1,602,963	19,581,817
Scaling up catchment level, sustainable land management practices	INV	Agro-biodiversity and SLM practices up-scaled for catchment conservation and increased sustainability of farming system productivity and improved resilience to droughts and floods	2.1 Reforestation and natural regeneration of vegetation cover in 565 ha in woodlots and along river banks and in upper catchment areas 2.2 11,320 households with efficient cook stoves introduced/ scaled up to reduce wood demand; 2.3 5 efficiency charcoal kilns and sustainable supporting wood lots established in 5 sub-catchments; 2.4 At least 5 alternative energy projects made operational 2.5 Honey and other NTFP small business established/expanded as	GEFTF	4,392,000	53,623,866

[3] Financing type can be either investment or technical assistance.

[4] This is the co-financing of baseline investments that are directly relevant amount to 15 sites. The whole PRIDE investment is taken into account (as per the scaling up strategy), which entails the adoption of practices promoted by the ERASP in all the 15 PRIDE sites as indicated in tables A and C.

			for 856 households as an incentive for forest conservation. 2.6 Improved soil and water management practices scaled up and adopted by 16,600 farmers in 12,500 ha in sub-catchments; 2.7 Drought tolerance, pest resistance and other beneficial characteristics from indigenous crop/animal varieties incorporated in diverse crop and livestock systems in 2000 hectares; 2.8 16,600 farmers using meteorogical forecasts integrated into farming planning and decision-making.			
Monitoring and assessment of ecosystem services, resilience and food security	TA	The evidence-base improved for SLM and NRM decision-making and upscaling at community, district level and central government levels.	3.1 90 District and 20 national staff and 50 youth trained in biophysical assesmsent tools and information systems developed in Districts; 3.2 Land degradation surveillance network (LDSF) designed and implemented in 5 sub-catchments. 3.3 10 stream flow monitoring stations upgraded/installed (financed by PRIDE) 3.4 Ex-Act, DATAR and MPAT monitoring tools applied in 6 sub-catchments; 3.5 6 knowledge management products produced to support upscaling and policy processes	GEFTF	684,000	8,360,776
			Subtotal		6,678,963	81,566,459
			Project Management Cost (PMC)[5]	GEFTF	477,000[6]	5,830,541

[5] For GEF Project Financing up to $2 million, PMC could be up to10% of the subtotal; above $2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

[6] The PMC is slightly higher than 5%, it amounts to 6.6%, due to geographic coverage of the investments that requires higher supervision and management costs. The target area was selected based on the baseline irrigation potential of the sites.

Total project costs		7,155,963	87,397,000

C. CONFIRMED SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE

Please include evidence for co-financing for the project with this form.

Sources of Co-financing	Name of Co-financier	Type of Cofinancing	Amount ($)
Recipient Government	Government of Malawi (ERASP)	In- kind	1,610,000
GEF Agency	IFAD	Grant	26,540,000
GEF Agency	IFAD ASAP	Grant	7,063,000
Recipient Government	Government of Malawi through its loan from IFAD (PRIDE)	Loans	26,483,000
Recipient Government	Government of Malawi – Departmental Budgets (PRIDE)	In-kind	13,083,000
Beneficiaries	Project communities (ERASP)	In-kind	1,837,000
Beneficiaries	Project communities (PRIDE)	In-kind	7,283,000
Donor Agency	DFID (PRIDE)		498,000
Private sector	(PRIDE)		3,000,000
Total Co-financing			87,397,000

D. TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country Name/Global	Focal Area	Programming of Funds	(in $)		
					GEF Project Financing (a)	Agency Fee [a] (b)[2]	Total (c)=a+b
IFAD			IAP Food Security	IAP Food Security	3,577,982	322,018	3,900,000
IFAD	GEFTF	Malawi	Land Degradation	IAP Food Security	1,341,743	120,757	1,462,500
IFAD	GEFTF	Malawi	Biodiversity	IAP Food Security	1,341,743	120,757	1,462,500
IFAD	GEFTF	Malawi	CC Mitigation	IAP Food Security	894,495	80,505	975,000
Total Grant Resources					7,155,963	644,037	7,800,000

a) Refer to the Fee Policy for GEF Partner Agencies

E. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS[7]

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	*2,000 hectares (Component 2)*
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	*13,065 hectares (Component 2)*
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	*Number of freshwater basins*
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	*Percent of fisheries, by volume*
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO_{2e} mitigated (include both direct and indirect)	*1,774,907* metric tons
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	*metric tons*
	Reduction of 1000 tons of Mercury	*metric tons*
	Phase-out of 303.44 tons of ODP (HCFC)	*ODP tons*
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	*Number of Countries: 1*
	Functional environmental information systems are established to support decision-making in at least 10 countries	*Number of Countries: 1*

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

(If non-grant instruments are used, provide an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF Trust Fund) in Annex D.

[7] Update the applicable indicators provided at PIF stage. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the *GEF-6 Programming Directions*, will be aggregated and reported during mid-term and at the conclusion of the replenishment period.

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN WITH THE ORIGINAL PIF[8]

1. There are no changes in focus either at the Outcome level or in the Focal Area Strategy objectives. There are differences in the budget allocations requested from the different focal areas, which stems from a detailed project design phase which developed an output plan and associated budgets.

2. The co-financing plan is based on the Programme for Rural Irrigation Development (PRIDE) sites, which is the baseline that the Enhancing the Resilience of Agro-ecological Systems Project' (ERASP) resources are blended into. ERASP will initially promote the adoption of practices in five sites, covering 35,000 ha and reaching 25,680 farmers. Later, as per the scaling up strategy, the approaches will be expanded to all the 15 PRIDE sites. Therefore, the overall baseline investments that are directly and undirectly relevant to the 15 sites will be USD 87, 397,000.

A.1. *Project Description.* Elaborate on: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2) the baseline scenario or any associated baseline projects, 3) the proposed alternative scenario, GEF focal area[9] strategies, with a brief description of expected outcomes and components of the project, 4) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing; 5) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF); and 6) innovativeness, sustainability and potential for scaling up.

I Global environmental issues, root causes and barriers

3. ERASP, within the Integrated Approach Pilot (IAP) program on Fostering Sustainability and Resilience for Food Security in Sub-Saharan Africa targets agro-ecological systems where linkages between the need to enhance food security and the opportunities for generating GEBs are evident. ERASP aims to promote the resilience and sustainable management of ecosystems services. At the same time, it will safeguard the long-term productive potential of critical food systems in response to changing human needs. The GEBs that the ERASP will generate include rehabilitation of river flows and water resources management, carbon stocks, productivity of the land, and use of crop and animal genetic diversity for food and agriculture in the selected Water Resources Units (national hydrological boundaries) that contain the agricultural productive systems on which the target group of smallholders depend for their livelihoods and food security. The main GEBs addressed by the project are i) land degradation, ii) carbon stocks in above ground vegetation and soils and ii) loss of agro-biodiversity.

4. **Land degradation:** Land and land-based resources are threatened by the high demand for resources such as wood for fuel and agriculture. Deforestation rate is estimated to be between 1 to 2.8 percent, representing an annual average loss of 164,500 to 460, 600 hectares. A total of 2.5 million hectares of forest resources were lost between 1972 and 1992, which is over 40% of Malawi's forest resources. Recent assessments show that land degradation affects over 40% of land in the counrtry (38,912 km2) and costs 9.5-11% of GDP annually. Soil loss due to land degradation was estimated by the World Bank in 1992 to average 20 tons per hectare per year, which is estimated to contribute to crop yield reduction of between four to 11% per year, and estimated losses of USD 15 million in the agriculture sector in 2007. Soil loss leads to a chain of adverse environmental effects. Soil is washed off the land into rivers causing sedimentation and siltation of rivers and reservoirs, with negative impacts on fish spawning grounds as well as reduction in water

[8] For questions A.1 –A.7 in Part II, if there are no changes since PIF , no need to respond, please enter "NA" after the respective question.

[9] For biodiversity projects, in addition to explaining the project's consistency with the biodiversity focal area strategy, objectives and programs, please also describe which Aichi Target(s) the project will directly contribute to achieving..

quality. The wide-scale use of chemical fertilizers means that with soil erosion, an overload of nutrients are leaching into rivers and water bodies leading to eutrophication, fish mortality and risks to human health. The risk of infestation of invasive aquatic weeds was found to be medium to very high for most areas of Malawi.

5. **Carbon stock:** The mitigation benefits of ERASP account to 1,774,907 tonnes CO_2e of avoided emissions and sequestration. The average carbon balance is equivalent to 128 tonnes CO_2e per hectare and 6.4 tonnes CO_2e per hectare per year. Thus, the investments under the GEF project have comparatively considerable environmental benefits in terms of mitigation impacts. The largest contribution to carbon sequestration derives from the agroforestry systems, the conversion of land from annual crops to perennial tree/crops.

6. **Biodiversity**: Significant agro biodiversity has already been lost from small holder production systems in Malawi leaving them impoverished, vulnerable, dependent on external inputs and increasingly unsustainable and less nutritious. Indigenous plant and animal genetic resources with tolerance and resistance characteristics suited to local pressures are no longer available in local seed systems, which narrows climate change adaptation options for small holders and limits diversification and resilience building strategies. In addition, climate change may also in itself be a serious threat to agro-biodiversity due to changes in pest and diseases and drought tolerance and because rates of evolution may not be able to keep up with climate changes. This may result in loss of microorganism and animal below ground diversity, insects and other pollinators, and other species important for agricultural production systems. The baseline study carried out during the project design indicated that indigenous crop varieties are cultivated on less than 10% of crop land in the targeted catchments. The main challenges with landraces, as expressed by the farmers, are: low yields, most varieties are late maturing and as such need adequate rainfall for a longer period making them less adaptive to unpredictable weather including dry spells and droughts; more susceptible to emerging pests and diseases; some varieties have long stalks (maize); and some require longer drying periods (pigeon peas). Maize is the staple crop grown by all households in the project target areas followed by pigeon pea, rice, groundnut and cassava. Most farmers have adopted the improved varieties (hybrid and OPV maize), which are increasingly more available and accessible on the market. The farmers report that hybrid varieties are advantageous in maturing earlier and needing less rain and can therefore withstand dry spells while indigenous varieties are advantageous in resisting pests and diseases, needing fewer inputs, producing a better taste and in attracting a higher market demand and price.

7. **Root causes:** Six million smallholder farmers contribute more than 70% to agricultural GDP. Malawi's economic performance is therefore dependant on how the smallholder farmers perform. Land holdings are shrinking and becoming more fragmented. Marginal areas have been brought under cultivation, and fallowing has been replaced by continuous cropping using conventional tillage practices of ridging. Recurrent drought and declining terms of trade have magnified these problems. The current account deficit of nearly 13% of GDP is financed by donor grants and development credits, with little foreign direct investment.

8. The country's population was approximately ten million in 1998, growing to 13 million ten years later (2008 population census), and estimated to be 17 million today[10]. Population growth is almost three percent per annum, contributing to one of the lowest per capita GDPs in the world. The third Integrated Household Survey (IHS3, 2011) estimates that 51% of the population lives below poverty line with 25% being ultra-poor. Recent poverty estimates show a worsening of an already dire situation with over 74% of the population living below the poverty line and about 30% living in absolute poverty. Over 90% of the poor live in rural areas and many are dependent on subsistence farming on customary land, cultivating small and fragmented landholdings that have dwindled to an average of 0.9 ha in 2013.

[10] This estimate is based on a baseline of 13 million in the year 2008 and a population growth rate of 2.8%

9. Forests are being cleared for housing and agriculture primarily driven by population growth and for fuel wood and charcoal production. Although the estimated annual supply of all biomass is 42.4 million cubic meters of solid wood equivalent which is estimated to be 2.7 times the demand (15.8 million cubic meters), the spatial distribution is uneven. Surpluses are found in the Northern regions but shortages are reported in Central and Southern regions, and the costs of transportation are too high to fix this problem. Future projections for further increases in deforestation and land degradation are startling. With the population increases expected, if more is not done to increase agricultural productivity then an estimated 740,000 hectares of forest and woodland (representing 37% of the 2008 forested area) will need to be cleared to provide farmland to meet the expected food requirements, which will further place pressure on wood fuel availability in Central and Southern regions of the country. The Malawi Biomass Energy Strategy indicates that at current trends, 82% of the population is projected to remain reliant on biomass energy in 2020. One study estimates that demand and supply will exceed 100 million tonnes per year by 2030 while the sustainable biomass supply should be no more than ten million tonnes per year.

10. The challenge today is to find sustainable ways to increase the productivity of smallholder farmers at a rate faster than the population growth. The government response over the years has been input subsidies, which have helped to increase smallholder crop yields but at the cost of long term soil fertility and farmer dependence on the subsidies to continue with their meagre livelihoods. Farmers are vulnerable to changes in the size and scope of the input subsidy programme. Without the subsidy, access to fertiliser and improved seeds is beyond the reach of most farmers. Chemical fertilisers also have an environmental cost. GoM estimated in 1994 that the cost associated with replacing soil nutrients in the form of organic fertilisers was equivalent to USD 300 million annually.

11. **Barriers:** Though there are documented success stories in the area of natural resource management, the main issue is one of continuity of the initiatives over the longer-term and the institutional support and resources to scale up farmer's adoption. One of the main barriers is government under-staffing (departmental vacancy rates of 70% are not uncommon) and weak policy and institutional coordination. More detailed barrier analysis is presented below.

II Baseline and proposed alternative

12. The 'Enhancing the Resilience of Agro-ecological Systems Project' (ERASP) will primarily build on the Programme for Rural Irrigation Development (PRIDE), which is the co-financing baseline investment. In addition it will make programmatic links with the Sustainable Agriculture Production Programme (SAPP) another IFAD funded intervention, which is supporting rain-fed agriculture and research and extension services for the adaptation and adoption of Good Agricultural Practices including in particular conservation agriculture. PRIDE aims to transform smallholder farming within an intervention area covering about 15 medium-sized irrigation schemes prioritized in Malawi's National Irrigation Master Plan and Investment Framework (2015) in the northern and southern regions. The selected areas include some 5,200 hectares of irrigated land, and 12,300 hectares of rain-fed land. An estimated 19,500 smallholder households, representing a population of approximately 975,000 will be targeted by PRIDE.

13. Two risks in the wider landscape may impact medium to long -term sustainability of the PRIDE investments. The first is the level of sedimentation washed down from the upper catchments, which has been shown to raise maintenance costs and over time lead to flooding. The second is securing sufficient surface water to feed the irrigation system, considering also the impacts of climate change on rainfall in Malawi. The mitigation of these two risks requires effective land and water management in the wider catchment area. In addition, 70% of the hectares covered by PRIDE are rain-fed areas, which used to benefit from surface waters that experienced lower flows such that many streams are now dry for longer periods of the year. This means that rain-fed farming has lost an important source of resilience and

instead is now largely dependent on seasonal rainfall which falls in shorter periods with heavier bursts, interrupted by dry spells. This combined with the effects of catchment degradation and the loss of key ecosystem functions such as flood regulation, water infiltration and recharging of the aquifer, and maintenance of soil integrity means that floods as well as dry-spells and droughts are regular occurrences, undermining food security and growth. Furthermore, reductions in rainfall infiltration are already affecting groundwater resources and communities are reporting a drying up of boreholes across the country.

14. The solution proposed by this project is an integrated agricultural and natural resources-based development strategy in the catchment areas which provide the water source for the PRIDE investments. Project investments are organized into four components: (i) Multi-stakeholder institutional framework for integrated catchment area management; (ii) Scaling up catchment level, sustainable land management practices; (iii) Monitoring and assessment of ecosystem services, resilience and food security; and (iv) Project coordination (through the PRIDE Coordination Office). The project components and their baselines, outputs and activities as well their contribution to GEF strategic Outcomes are presented below.

15. ERASP applies an ecosystem-based approach to improving food security, which is complementary with the infrastructure-based approach undertaken in PRIDE. ERASP will promote interverntions in three districts (two in Karonga, two in Machinga and one in Phalombe) covering an estimated 35,000 hectares and involving 25,680 farmers. The added value of ERASP to PRIDE lies in three areas. The first is that ERASP focuses on a more comprehensive landscape planning process for the sub-catchments, including PRIDE sites, while PRIDE focuses on the institutional architecture as it relates to the functioning of the irrigation schemes. The second is that ERASP adds an agro-ecological approach to improving food security, which will complement PRIDE's livelihood and marketing approach. In this, ERASP has developed a comprehensive strategy to reduce land degradation, as one of the pathways to improve food security, through biomass energy efficiency, biomass energy production and forest land and water conservation measures. The third is that while PRIDE has a major focus on irrigation, high value crops, value addition and marketing, ERASP will raise agricultural yields on rain-fed farming systems through climate-smart and conservation agriculture techniques, supported by credit provision through village lending and saving clubs (SAPP support). A map of the project area is included as Annex E.

16. A description of the components baseline, proposed alternative and the complementary baseline investment is described below.

Component 1: Multi-stakeholder institutional framework for integrated catchment area management

17.**Baseline situation:** Under the 2013 Water Resources Act, the drainage system of the country has been divided into 17 Water Resource Areas (WRAs), each representing a river basin, and these are further sub-divided into 78 Water Resource Units (WRUs). Catchment Management Committees (CMCs) are also mandated by the 2013 Water Resources Act, under the authority of the National Water Resources Authority, though have yet to become operational anywhere in the country.

18. The institutional framework with regard to water manamgent planning and irrigation spans a range of fields and poses significant coordination challenges. A holistic approach to irrigation development would call for the participation of many government institutions covering agriculture, land, water, infrastructure, environment, climate change adaptation among others. Due to financial and human resource limitations most of the relevant institutions in Malawi struggle to fulfil their mandates. This is exacerbated by frequent organisational and management changes, lack of coordination between institutions, poorly defined lines of responsibility, and in some areas, deficiencies in the legal and regulatory framework. Diffusion of responsibility for irrigation development among several institutions needs to be addressed. The Water Sector-Wide Approach (WaSWAp) was created to improve coordination among and between institutions in the irrigation sub-sector, but this is not yet fully institutionalised. ERASP will work to address the

challenges associated to the lack of operational and strong instiutions, by establishing the VRNRMCs structures within three WRUs in the administrative Districts of Karonga, Phalombe and Machinga. The Village Nautral Resources Management Commitees (VRNRMCs) are legally supported by the 1997 Forestry Act.

19. Malawi has well-developed decentralised structures comprising District decision-making structures, Area Development Committees and Village Development Committees which will enable implementation of this component. Despite the structures being in place, the gap in natural resource management is considerable in Malawi. On paper in Malawi there is strong support for the community-based management approach. Community-based management of forests in order to promote sustainable utilisation of biomass energy is one of the operational principles in the 2003 Energy Policy. It is a central theme in the 2009 Malawi Biomass Energy Strategy. In addition there are guidelines that provide a methodology for implementing the process. But the main challenge in the implementation of the approach. The literature reports a weak understanding of how these participatory processes work to reduce poverty whilst improving forest management, and there are inadequate technical and financial resources for implementation. Forestry management is widely seen as being analogous of tree planting. Benefit sharing mechanisms are still unclear, though there are some examples of community development funds being opened and used[11]. Alongside new institutional requirements such as the VNRMCs, there are many other village level institutions endorsed by different Ministries and policies. In some cases there is more than one VNRMC in a single village with little coordination between them. The lack of coordination is also evidence between village and district level institutions, resulting in duplication of effort and conflict. The pressure to see quick results often generates rushed processes that fail adequately to consult or reach consensus among the different stakeholder groups at village level.

20. **Proposed alternative:** ERASP will support the implementation of the institutional architecture set up under the Water Resources Act (which has yet to be implemented anywhere in the country) in five sub-catchments and will implement a workable and sustainable natural resource management model that will deliver food security as well as generate GEBs. ERASP will support the Focal Areas on Land Degradation-1 (program 1 and 2), Land Degradation-3 (program 4), Land Degradation-4 (program 5), Biodiversity-4 (program 5), Climate Change Mitigation-2 (program 4).

21. Component 1 is the planning foundation for the entire project. This Component will develop five sub-catchment management plans. Component 1 aims to build capacity and joint ownership among different government and non-government stakeholders and community members (representing up- mid- and down-stream resources users) on the issue of catchment management following a shared vision of how communities wish to see their catchment developed. The planning process will include participatory land-use mapping of current use, users and degradation hotspots and drivers, negotiation and agreement on a land-use plan and development of by-laws for access and user rights for land and water resources, as well as a set of measures to rehabilitate the catchment. Component 3 on the monitoring and assessment frameworks will contribute to generating an evidence base on land degradation, vegetation cover and biodiversity trends, which will inform on the effectiveness of the planning and management process through the sub-CMCs and Catchment Area Management Plans (CAMPs) and their future iterations of the catchment management plans.

22. **Baseline investment:** PRIDE sub-component 1.1 will be the baseline investment for ERASP Component 1. PRIDE will engage in approximately 15 scheme cluster areas, including some 5,200 hectares of irrigated land, and 12,300 hectares of rain-fed land. An estimated 19,500 smallholder households, representing a population of approximately 975,000 will be targeted. The sub-component 1.1 includes the following: i) a Community Planning and Investment Agreement (CPIA) process will be initiated in scheme cluster areas, which includes free prior and informed consent

[11] IIED Forest Learning Governance Group (n.d)

(FPIC) procedures and precedes any investment decision ii) setting up a multi-disciplinary CPIA team in each district to guide the preparation activities, comprising of concerned government agencies at District level and specialized service providers where required iii) establishment of Water User Associations iv) establishment of land and water agreements iv) negotiating the irrigation scheme lay-out and the beneficiary contribution to scheme development with the design consultant mobilised by PRIDE v) The WUA will form a construction supervision committee of which the responsibilities need to be discussed; and which role needs to be reflected in the construction contract. This baseline investment component is complementary to ERASP because communities will already be mobilised and ready for implementation, which will help to get ERASP started without any delays.
The Outcome and outputs under this component are as follows.

Outcome	Outputs
1. At least 5 sub Catchment Management Committees (sub-CMC) in place as an effective NRM planning and coordination mechanism	1.1 1050 people (of which 50% are women and 15% are youth) trained in catchment area management and climate change risk reduction through community awareness campaign and training plan, and sub-CMCs established; 1.2 At least 5 CAMPs developed and approved by sub-CMCs; 1.3 66 VNRMCs established/strengthened and implementing CAMP priority actions (>1050 participants of which 50% women, 15% youth, and 30% women in leadership positions).

23. The activities pertaining to each of these outputs are presented below.

Output 1.1: Sub-catchment management committees (sub-CMC) established. Activities will include:

- developing a mobilisation strategy that will consider how best to structure the sub-CMCs in order to provide a motivated and balanced representation that allows for equitable participation of all constituencies in catchment management;
- agreeing the Terms of Reference for this component with the sub-CMCs and convene the meetings;

Output 1.2: Catchment area management plans (CAMP) developed. Activities will include:

- map out the catchment area,
- identify the State and non-State stakeholders and resources users and engage all stakeholders;
- draft the vision, aims and objectives and establish the sub-CMC and VNRMCs, which will support catchment management at the village level.
- develop inventories of natural resources and projections for their status, use the research findings to input to the CAMP.

Output 1.3: Catchment area management plans developed and approved by CMCs. Activities will include:

- Develop and/or strengthen village land-use and resources management plans in line with the CAMPs and on the basis of self-recognised problems and challenges in land, water, grassland and forest resource use.
- Conflicting land uses will be recognised and solutions found.
- Support the legal registration of the VNRMCs, under provision of the 1997 Forestry Act.
- Village catchment plans will be integrated into the District Development Planning process.
- Production of public awareness materials in the local language.

Component 2. Scaling up catchment level, sustainable land management practices

24. **Baseline situation:** The Extension Planning Areas where the project is expected to be located are extremely poor. The baseline situation study carried out for the design of this project revealed that average land holdings are about a hectare, with Machinga having the smallest landholding (0.69 ha). Less than 40% of households own basic assets such as mattress, furniture and radios, although just over about half own livestock, bicycles and cell phones. Sixty percent of those that did not own radios, bicycle and cell phones were women. Average household annual income was equivalent to USD 244 (USD 213 for women and USD 281 for men), meaning a daily income of USD 0.67 per household. This is far below the international poverty line of USD 1.90 per person per day. Twenty five percent of respondents were illiterate and two thirds of these were female. People were educated mostly to primary school level.

25. The main source of food and income for over 65% of the households is agriculture followed by non-farm labour income (less than 12%) and business (less than eight percent). Some households in Karonga and Machinga depend on charity, following natural disasters that have struck the area. Communities are food insecure almost every year. In years of bad rains this is about eight months and in years of good rains it is about three months. Female headed households are more food insecure than male headed ones. Nutritional security is also low. Access to different food groups is a challenge to many households. Grains, vegetable and fruits are eaten almost every day while legumes (and fish in Karonga) are eaten a few times per week. Some foods like eggs, oils, and meat are rarely eaten. In general, there are very few households who eat all the six food groups in a day.

26. The factors that affect crop productivity are poor rainfall distribution, floods, dry spells, lack of money to buy inorganic fertilisers, low soil fertility, pests and seed constraints. Nearly all farmers use conventional tillage methods, though most respondents have adopted inorganic fertiliser, crop residue and intercropping with legumes to increase soil and crop productivity. Most farmers have adopted improved varieties, with landraces are grown at small scale. Regarding livestock, farmers face different challenges in raising livestock that include the lack of feed, diseases and pests. On average between 10 to 20% of household income is spent on firewood, with some households spending up to 40%. Distances walked for firewood can be up to four km in Phalombe District. Deforestation was the reason cited for drying up of wells, flooding and soil erosion. Also noted were increased cases of diseases such as malaria and cholera due to unsafe water especially during floods, increasing the time and care burden as well as medical bills. Catchment conservation done by between 48% (Phalombe) to 73% (Machinga) of household for firewood mainly (50% of household). Timber and non-timber forest products were other benefits of catchment conservation (fish, fruits, honey and mushrooms).

27. Although credible SLM practices have been developed in Malawi, adoption rates are still low and dis-adoption after project support has ended are high. Adoption barriers have been shown to be due to a range of factors, the most important being weak access by women to extension services, the quality of the demonstration plots, the frequency of support by extension workers and lack of equipment and capital. Other barriers for adoption are reported as being high up-front learning costs due to higher management skills required, limited yield benefits in the short-term (but greater resilience in the medium term), high opportunity costs of labor (particularly for weeding in the short-term), the lack of appropriate farm equipment to reduce labor inputs, and the opportunity cost of crop residues (animals, fuel, etc.). Continued qualified extension and research support will be important to overcome the critical threshold of self-adoption and building farmer's experimental learning and adaptive management skills combined with short and medium term planning and decision support for farmer's technology choices taking into account the impacts of increased climate variability.

28. External shocks complicating the issue of making agriculture profitable are climatic hazards, the critical ones being floods, droughts and dry spells, strong winds, hailstorms, pest infestations and disease epidemics. Climate change projections for Malawi indicate mean temperature increases of between 2 and 3 °C by 2050, with longer and more

intense heatwaves, and changing rainfall variability and intensities. The problem is that seasonal forecasts are issued for general drought conditions, rather than being tailored to the area of interest and in most cases the forecasts do not accurately predict the situation on the ground, rendering them untrustworthy and unreliable. In addition there is limited capacity and guidance on how to interpret these forecasts for agricultural planning. The five year strategic plan of the Department of Climate Change and Meteorological Services (2011-2016) indicates that the Department does not have sufficient monitoring and prediction systems for weather and climate and that the monitoring network is also not sufficient. Other challenges are the acute shortage of trained staff for timely observing and forecasting of weather and climate variability.

29. With regards to the fuel wood and energy, the charcoal industry is one of the largest industries in Malawi. No official estimates are available but a 2007 report estimates that six million bags are produced annually amounting to 231 tonnes, produced by 46,500 mostly individual, small-scale producers. These producers have little negotiating power and are regularly exploited by intermediaries and who capture just a small fraction of the final value of the product. Charcoal is potentially a renewable, zero carbon forest product but its current method of production is unsustainable due to a mix of political, social and economic factors. There is a large domestic market, particularly in urban centres and future projections are for the consumption to grow. Fifty thousand hectares of indigenous forests are estimated to be cut down annually for charcoal production. Under the 1997 Forest Act, charcoal can be produced only under licence. Supporting charcoal production regulations have been prepared and are expected to be under Parliamentary review in 2016. These include various minimum standards such as origination from sustainable wood sources. Looking at the demand side, efficient cookstoves have the potential to greatly reduce household demand, but affordability of these stoves remains one adoption barrier according to the baseline study carried out for this project. Other case studies in Malawi have shown that the main adoption barrier is the lack of demonstration and knowledge of the benefit of the stoves.

30. **Proposed alternative:** Component 2 aims to implement the actions prioritised in the CAMPs and in village level plans developed under Component 1 with emphasis on scaling-up the adoption of catchment conservation and SLM practices at the wider catchment level. The interventions will focus on landscape level catchment conservation and management to reduce GHG emissions, land degradation prevalence, and flood risk and increase the availability of surface water during dry periods as well as improving agronomic practices in farmers' fields that will result in sustainable intensification of agricultural production benefitting at least 16,600 farmers. Given the biophysical and farming system differences between the targeted catchments in the level of the importance of different drivers for catchment degradation, the catchment level CAMPs and village level plans will determine the shape of each of the intervention strategies and the degree of emphasis placed on the various activities. Given the limited budget, the CAMP and village level plans should be prioritised to fit the budget. The project will work on the assumption that bringing tangible economic benefits to communities will provide the incentive for the sustainable management of the natural resources in their surroundings – a key principle of community-based natural resource management.

31. **Baseline investment:** ERASP will protect five of the PRIDE irrigation schemes, covering 13,065 hectares. One of the key strategies that emerged is to invest in water storage. With increasingly erratic rainfall patterns as a result of climate change and utilisation of dry season river flows reaching its maximum, water storage has become a necessity for further agricultural development in Malawi. Water storage will have a positive effect on the regulation of water flows and as such, combined with improved catchment management, reduce the chance of river floods. The agricultural and market linkages component will be a key plank in increasing the returns from agriculture and forest-based products. This includes activities such as establishing farmer business schools, producer groups, value chain and market studies and a value chain start-up facility. In addition, PRIDE will invest in good agricultural practices and efficient cookstoves in the immediate area surrounding the irrigation command area, potentially providing economies of scale in the

implementation of these activities in ERASP. This baseline investment component is complementary to ERASP, which will secure the water source for the irrigation investment as well as improving outcomes for communitites in the wider watershed. PRIDE will provide the marketing and value-addition activities which will benefit the ERASP communities. More broadly, by demonstrating the value of an ecosystem-based approach to realising the benefits from an infrastructure investment, the expectation is that this will provide for strong messaging for ecosystem-based approaches to policy-makers.

32. The Outcome and outputs under this component are as follows.

Outcome 2 Agro-biodiversity and SLM practices up-scaled for catchment conservation and increased sustainability of farming system productivity and improved resilience to droughts and floods Indicators: - 16,600 Farmers experiencing having sufficient water for crop and livestock production needs - Flood risk index reduced from high to medium - Land degradation prevalence reduced from 46-60% to less than 40% - 0.03 million tons CO_2eq emission avoided and 1.74 million tons CO_2eq sequestered - Average stream flows feeding irrigation schemes maintained or increased - Reduction in sedimentation affecting irrigation schemes
Outputs
2.1. Reforestation and natural regeneration of vegetation cover (with native species with honey, fodder and other production potentials) in 565 ha in woodlots and along river banks and in upper catchment areas;
2.2 11,320 households with efficient cook stoves introduced/scaled up to reduce wood demand and avoid deforestation;
2.3 5 efficient charcoal kilns and sustainable supporting woodlots established in the 5 sub-catchments;
2.4 At least 5 alternative energy projects (biogas, solar energy, etc.) approved for funding by the challenge fund and made operational;
2.5 Honey and other NTFP small business established/expanded for 856 households as an incentive for forest conservation;
2.6 Improved soil and water management practices scaled up adopted by 16,600 farmers in 12,500 ha in sub-catchments terraces and contour ridges/bunds, (climate-smart agriculture and conservation agriculture, integrated soil fertility management (ISFM); integrated pest management (IPM); integrated agroforestry and livestock systems securing nutrient recycling);
2.7 Drought tolerance, pest resistance and other beneficial characteristics from indigenous crop/ animal varieties incorporated in diverse crop and livestock systems in 2000 hectares to increase resilience to climate variability and increase availability of nutritious food in local food systems;
2.8 Meteorological forecasts reaching 10,600 farmers and integrated into farming planning and decision making (drought tolerant and short cycled varieties, crop diversification, planting date, land preparation, pest management).

33. The activities pertaining to each of these outputs are presented below.

Output 2.1 Measures implemented in hotspot areas to recover river flows, prevent soil erosion and avoid flooding. Activities will include:

- codification of current methods of delivering hotspot analysis (developed during an earlier IFAD and World Bank funded programme, IRLADP) and development of a shared understanding of these methods.
- reforestation and/or assisted regeneration of vegetation cover in hotspot areas such as river banks, gullies and the upper catchment;
- run-off control measures to prevent flooding increase infiltration and recharge of the aquifer and stop the loss of top soil, through terraces, ridges or bunds along the contours of the slope.
- Communities will be trained and supported in the establishment of community nurseries and the development of sustainable forest management plans.

Output 2.2 Energy efficiency cook stoves. Biomass (defined as firewood, charcoal, crop residues and animal dung) accounts for about 90% of energy supply, mostly in the form of wood fuel for cooking in rural areas. Fuel wood consumption can be decreased by 34 to 61% by using efficient cook stoves depending on the model, emissions of carbon monoxide and particulate matter can be reduced with up to 75%, leading to, cost and time saving and health benefits to the household. The impact in the project areas could be significant. An estimate of the hectares that could be saved with the adoption of improved cook stoves for the target population is some 130 hectares annually, based on a two kilograms per household daily saving on fuel wood, a target population of 11,320 households, and taking a conversion rate based on research carried out in a forest reserve in Malawi. This benefit is larger than estimated current deforestation rates in the three catchments under consideration. Activities will include:

- review the experience on cook stove initiatives in Malawi with a view to recommending a proven business model that has a good likelihood of success both for securing high uptake rates and promoting local enterprise development.
- promote the manufacture, installation and maintenance of the cook stoves through an established and proven service provider and methodology (to be contracted). The aim will be to bring down the price of cook stoves to overcome the affordability barrier and insure local availability.
- generate demand for the efficient cook stoves, in order to create a self-sustaining market. ERASP will promote the uptake through the catchment management planning process outlined in Component 1 (which includes an extensive process of visioning, consultation, land-use planning and evidence-based assessments) and facilitated through the village savings and lending clubs supported through SAPP. This activity will be implemented with the cook stove activities under PRIDE.

Output 2.3 Sustainable charcoal production. The charcoal industry is one of the largest industries in Malawi and is set to grow exponentially in Malawi. It could be a zero carbon, renewable resource if it were grown sustainably, but the current situation can be characterised as highly unsustainable. The project will aim to demonstrate how charcoal could be turned from an unsustainaible livelihood activity with negative ecosystem impacts into a livelihood activity that builds economic power while also investing in natural capital. Activities will include:

- Based on demand from the villages and in line with their catchment management plans, ERASP will support charcoal producers to organize in group and build high efficiency charcoal kiln together with establishment of sustainable woodlots that can eventually feed the charcoal kiln.
- Facilitate licensing of sustainable charcoal groups in order to kick start a cleaner charcoal supply line to urban centres.

Output 2.4 Wood lots. A total of 2,565 communally managed forest areas have been established throughout the country. The three targeted districts: Karonga, Machinga and Phalombe have 41, 21 and 112 village forest areas (VFAs) respectively. The project will support communities set up or expand woodlots as necessary for fuel wood and construction needs. Activities will include:

- support the VNRMCs in assessing their fire wood and wood for construction needs (considering savings from the introduction of efficient cooking stoves – activity 2.2), the status and capacities of the existing wood lots and formulate management plans for VFAs. The plans will include assisted reforestation with fast growing species and eventual expansion of woodlots in strategic areas for water conservation when possible and supported by adjustments in local bylaws for access and use of wood lots resources.
- The project will support women's equal involvement in management, planning and decision making around the woodlots.

Output 2.5 Other NTFPs:. Together with the returns from woodlots and agro-forestry, this activity is intended to raise the returns from trees and forest to communities and thus can be seen as compensation for environmental services.

NTFPs could be, for example, honey production mushrooms, fodder, fruits and traditional medicines. Activities will include:

- small village producer groups will be trained in business management, processing and linkages to market.
- establishment of local input supply of, for example, beehives will also be supported together with addressing other local barriers for expanding the production and its added value.
- connect to PRIDE support for value addition and market links.

Output 2.6 Alternative energy: Biogas seems to be the most promising rural energy alternative to fuel wood for cooking in Malawi. Though the technology has been present in Malawi for many years, it has not been scaled up because of the cost of the biogas units, relative to fuel wood. Community biogas units have been tested with some success, but experience on this is still nascent. With mass deployment and supporting enterprise development around its manufacture, it should be possible to reduce the costs. ERASP will explore whether it could generate some more experience with biogas that could begin to develop an input market for its establishment and raise the demand. Solar, non-traditional biomass (e.g. crop residues), hydro, wind and geothermal are potential energy resources that could enhance Malawi's energy security. The main activity to be launched for this outputs will be to:

- establish a small innovation fund to support community initiatives on alternative energies, borrowing the concept from the World Bank-supported Shire River Basin Project, which has reportedly been successful in attracting energy innovative research and implementation projects through a similar fund.

Output 2.7 Improved soil and water conservation practices in farmers' fields. The aim of this sub-component is to promote autonomous decision-making by farmers regarding adoption of SLM practices that anticipate and accommodate climate variability. Key activities will include:

- scope out the baseline of good practice for that particular locality and develop a strategy to address the key barriers for adoption and further upscaling.
- develop extension work streams that can be implemented through farmer field schools (FFS) and the lead farmer-follower farmers model.
- a District strategy for achieving high adoption rates will be developed, to address knowledge and skills as well as physical and financial access issues for the adoption of a broad range of SLM practices and increased crop and animal diversification strategies and will include elements such as strengthening of equipment provision chains and sharing arrangements among farmers to facilitate local access.
- agro-forestry in a range of formats for benefits such as fruit supply, residue supply, nitrogen fixing services, wind breaks, slow down soil erosion, and live hedges.
- integrated pest management including the use of compost and manure, mulching processes, crop rotation and intercropping.
- integrated crop livestock systems using a diversity of drought tolerant and diseases resistant varieties. The focus will be on small-stock, which has been shown to be effective in building resilience to changing patterns of climate variability. These will be promoted primarily as a source of nutritional security, especially important given very low levels of protein consumption taking advantage of nutrient recycling between trees, animal and crop production. The project will support pass-on schemes of goats and chickens building on indigenous varieties and support the cross-breeding in order to raise productivity levels and to capitalise on their resilience to diseases. The project will be using the pass-on package and scheme developed by the Department of Animal Health and Livestock Development and implemented also in the SAPP project based on indigenous chickens. The pass-on scheme will be accompanied with training in animal management and diseases control.

SAPP has agreed to support the establishment and strengthening of village saving groups to overcome cost barriers for access to farm inputs in particular in the time gap for increased yield benefits and for the additional equipment needs of

the farmers. Access to finance will also be facilitated through a new rural finance project currently under preparation by IFAD and the GOM.

Output 2.8 Agro-biodiversity: This output will be led by the MPGRC in direct collaboration with district officers and extension services and will scale up the support to small action research and indigenous crop development involving farmers in selecting and testing indigenous varieties. The objective will be to improve the productivity and shorten the maturity while at the same time take advantage of these varieties' adaptation to local environmental conditions, in particular stresses from diseases and pests, and their nutrition values. To support further incorporation of the selected indigenous varieties in agro-diverse systems, activities will be as follows:

- support training of farmers in seed multiplication and organisation of seed multiplication groups, linking up with local informal seed exchange and trading systems and establishment of community seed banks to ensure local availability of seeds backed up by copies in the national gene bank.
- community seed banks will be located on higher ground in areas of flood risk in order to promote resilience and maintain the capacity for food security following a disaster.
- community events for sharing recipes using indigenous crops and awareness on their dietary diversification and nutrition value will be supported.
- extension staff and junior researchers will be trained in participatory selection and research for sustainable use of plant genetic resources and samples of threatened indigenous crops in order to support the sustainability of these activities and the conservation and research capacity of the gene bank.

Output 2.9 Agro-met forecasts. The project will build on and extend/scale-up to the catchments covered by the project the methodology developed under the Global Framework for Climate Services (GFCS) Adaptation programme in Africa on 'training of agricultural research and extension to produce and disseminate agro-climatic advisories. The aim was to develop extension messages on the most appropriate crop and livelihood options in relation to the seasonal forecast for the area, in a participatory manner with farmers. This will be added to the training plan developed at the outset for the project. These activities will be led by the Department for Climate Change and Meteorological Services, which is responsible for the national articulation of the aspects under the GCFS.

Component 3. Monitoring and assessment of ecosystem services, resilience and food security.

34. **Baseline situation**: Monitoring of ecosystem services in Malawi is not systematic at district level and mostly based on visual perceptions. However, some capacities do exist at national level for example at the Land Resources Conservation Department (LRCD); the National Water Resource Authority; Forestry Department and the Spatial Data Centre in the Department of Surveys which hosts and manages in collaboration with the National Statistics Office and other technical ministries, the Malawi Spatial Data Portal (MASDAP)12 a web-based tool that has the potential to support GIS based monitoring systems. The LRCD has supported districts in applying the Revised Universal Soil Loss Equation to assess soil erosion and identify hotspots for intervention. Nevertheless data collection, analysis, storage and retrieval can be challenging because of: i) inadequate funding, ii) lack of training and instruments to measure key parameters and establish functional databases (for example in the use of remote sensing and GIS analysis, training on data capture and management), and iii) shortage of frontline staff . The District level structures for monitoring and reporting are present but require support to work effectively.

35. At the District level, data are primarily collected through District level staff. Reports flow from the Districts primarily to the sector headquarters after analysis and consolidation, although data are also expected to feed into the district-wide data bank. The District Monitoring and Evaluation Coordinating Committees (DMEC) that are chaired by

[12] http://www.masdap.mw/

the Director of Planning and Development or District Monitoring & Evaluation Officer aim to provide institutional coordination in monitoring and evaluation across sector departments and NGOs. The functionality of the DMEC varies across Districts. Among the key challenges affecting M&E at the District level include: under-staffing against the authorised establishment, high workload involved in carrying out the assigned duties with such small numbers, and inadequate skills for data collection and analysis. Furthermore, databases are not always existent and functional; data is generally recorded in hard copy requiring time-consuming data entry, prolonged delays in getting data from sector focal points to facilitate preparation of district reports, non-functional DMECs and limited prioritization of funding for M&E activities.

36. The present M&E structure in the Districts dates from 2005 when a UNDP-funded program created the posts of District M&E Officers, and supported the development both of District and central (Ministry) databases. The original cadre of M&E Officers has remained in post since then, and only in 2013 was recruitment resumed to fill vacancies. At the same time, the end of the UNDP program has resulted in serious deterioration of M&E capability at the Ministry of Local Government. The central database is not currently operational and the Planning Department has only six posts filled out of 20 established. As such there is little scope for support of District M&E officers.

37. **Proposed alternative**: Component 3 will improve the baseline in two ways: i) first to improve CMCs, District and national capacity to systematically measure, evaluate and document progress in improving ecosystem services and resilience and the linkages to increased food security for the target population in the catchments and as such the effectiveness of the implementation of the CAMPs (developed in component 1 and implemented in component 2). This will enable more informed decision-making on SLM, adaptation and enhanced food security in future iterations of the CAMPs; ii) second to create a standardised evidence base for catchment management to support national level upscaling of ecosystem approaches to increased resilience, local food security and global environmental benefits (GEB) including through policy adjustments and integration in the design of investment programmes. Lastly, this component will feed in critical inputs to the GEF-IAP- Fostering Sustainability and Resilience for Food Security in Sub-Saharan Africa monitoring by facilitating comparison and aggregation of overall results, highlighting common elements among different country projects approaches.

38. **Baseline investment:** This will be the knowledge management, planning and M&E component in PRIDE. The Planning, M&E Officer in the PRIDE/ ERASP PCO (financed by PRIDE) is responsible for planning, monitoring, reporting, evaluation and assessment, learning, knowledge management and communication, as well as ensuring appropriateness and efficiency of implementation related to targeting (food insecure, gender, youth, geographical). The PM&E officer of the PCO will in close collaboration with DOI and EAD establish a management information system (MIS), using dedicated software to collect data from various levels. The MIS database will be aligned to the ERASP and PRIDE Logical Frameworks Indicators, which includes IFAD Results and Impact Monitoring System (RIMS) indicators. The MIS will also include MoAIWD, Country Strategic Opportunities Programme and National M&E master plan indicators. Web-portals for easy viewing by service providers and beneficiaries can be considered, if deemed relevant. External support will be recruited for designing and establishing the databases and IT infrastructure.

39. The Outcome and outputs under this component are as follows.

Outcome	Outputs
3. The evidence-base improved for SLM and NRM decision-making and upscaling at community, district level and central government levels.	3.1 90 District and 20 national level staff and 50 youth trained in biophysical assessment tools, and information systems developed in districts
- GEB monitoring and assessment tools (Exact, LDSF, DATAR) and protocols integrated in partner	3.2 Land degradation surveillance framework (LDSF) network

district governments and institutions and information used for policy and programme design decision support - Model for participatory catchment land-use planning and management and application of SLM practices up-scaled in other catchments with PRIDE investment	designed and implemented in 3 catchments 3.3 10 stream flow monitoring stations upgraded/installed (financed by PRIDE) 3.4 Ex-Act, DATAR and MPAT monitoring tools applied in 6 sub-catchments; 3.5 6 knowledge management products produced to support upscaling and policy processes[13].

40. The activities pertaining to each of these outputs are presented below.

Output 3.1Training of Staff and community youth. Activities will include:

- District and national level staff and interested youth from the catchment areas will be trained to measure and continuously follow-up on ecosystem indicators by applying the LDSF, Ex-Act and DATAR tools.
- Training will also include data analysis and database management and how to turn the data into useful knowledge and information products to support district level planning and, creation of evidence for awareness and upscaling.
- The monitoring and assessment tools will be integrated into the monitoring and planning procedures of District offices.
- Skills development in data management and reporting will be included in the capacity and training plan to be developed.
- The connections between the data and information and the development of the District Development Plans will be strengthened.

Output 3.2 application of the ecosystem assessment tools. Most of the training under activity 3.1 will be provided as part of the actual application of the tools. Other activities will include:

- in the first project year the baseline and targets for carbon and agro biodiversity monitoring will be adjusted and the project will support the design and establishment of the LDSF sampling sites as well as data collection and analysis. This will be supported by ICRAF (LDSF), Biodiversity (DATAR) and eventual FAO (Ex-Act) as needed.
- ten stream flow monitoring stations will be upgraded and installed, financed by PRIDE.
- subsidies for transport and equipment to support the application of the tools will also be provided.

Output 3.3 Application of socioeconomic and gender monitoring tools. IFAD's MPAT will be integrated into the Project's M&A framework to assess and monitor rural livelihoods, household assets and access to quality NR, food and nutrition security and resilience in the targeted areas. MPAT will be accompanied by a set of gender-relevant survey indicators from the Women's Empowerment in Agriculture Index (WEAI) as well as the RIMS survey. The household surveys will include lines of enquiry on health issues related to floods and cooking practices as these form part of the incentive framework for catchment management among women especially.

Output 3.4 support for upscaling and policy processes. The project results will generate broader lessons about how the catchment planning and governance as well as management and conservation practices are generating improved ecosystem services and food security through specific strategies for improving farmer's adoption rates and gender equality and involvement of youth. The knowledge management section has more details.

[13] Knowledge products can be fact sheets, learning notes, policy studies, thematic studies, videos, etc.

Global environmental benefits

42. The Malawi ERASP project will contribute to targets on i) land under integrated management (19044 hectares of rehabilitated land) ii) GHG emission avoided per year (88,745 tones of CO_2eq avoided annually) and iii) conservation of genetic diversity – 2,000 hectares in total.

Innovativeness

43. Input subsidies have long been the tool of choice for the Malawi government and so there is bureaucratic inertia to moving to more progressive policies in addressing food insecurity. There have been a number of similar types of natural resource management projects in Malawi which have had success in improving livelihoods using ecosystem-based approaches but have stayed confined to the particular locality where they have been implemented. The challenge is finding ways to scale up ecosystem-based approaches to achieving food security, addressing political, financial and institutional barriers. ERASP will address this in four main ways:

44. **Piggy back ecosystem-based approaches on the hard technology platform for improved practical demonstration and advocacy** supporting investments in natural capita: Use the PRIDE investment vehicle to scale up the complementary ecosystem-based and irrigation approach to the other ten PRIDE irrigation sites, protecting over 5000 hectares of irrigated. The value of this approach in protecting the irrigation investments will be monitored and measured and the results information will be published in user-friendly materials. In this way, the complementarity of ecosystem-based approaches to infrastructure-based approaches for improving livelihoods and food security will be tested; positive results will present an important advocacy platform to secure political support for expanding ecosystem-based management.

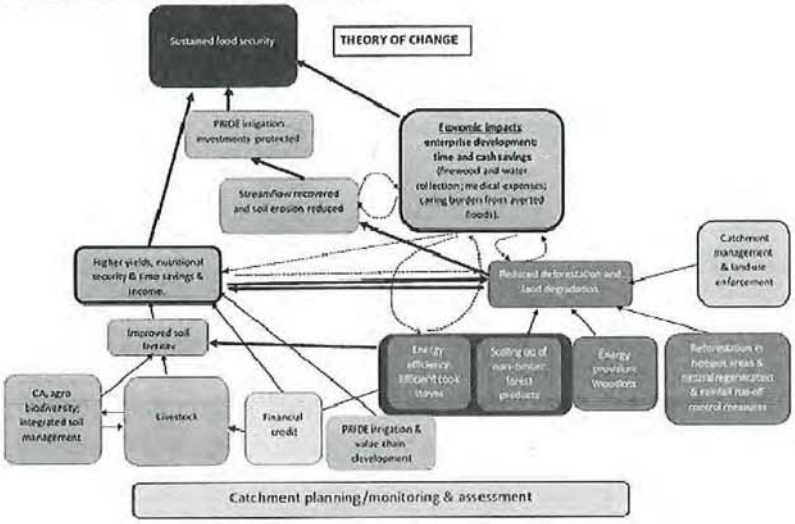
45. **Addressing poverty, institutional and market constraints in an integrated way**: The project strategy addresses agro-ecological constraints to agricultural productivity, institutional and market constraints through the blended nature of ERASP with PRIDE and SAPP, whereby the latter will support value addition, marketing and financial credit services to the ERASP target households, while ERASP will focus on providing developmental alternatives to the environmental degradation processes that take place for mere survival.

46. **An explicit theory of change that is powered a strong incentive framework**. The objective is food security that is sustained over time because the basis of it – natural capital – is protected and managed sustainably, together with market-oriented support provided under the baseline projects, which aim to increase returns to land to a level that enables people to move out of poverty. The aim would be to reverse the downward spiral of environmental degradation and negative economic impact that is the result of open access natural resource use, by providing sustainable natural resource-management solutions that confer economic benefits such as increased agricultural productivity and enterprise development. These benefit streams provide the main incentive mechanism to maintain these land management systems into the future.

47. **A strong monitoring and assessment component linked to planning processes.** This will systematically measure, evaluate and document progress in improving ecosystem services and resilience from the implementation of Component 2 outputs and the linkages to increased food security for the target population in the catchments. The various indicators will track and measure the operability of the Theory of Change. The project will create a standardised evidence base for catchment management to support national level upscaling of ecosystem approaches to increased resilience, local food

security and GEBs. The assessment tools offered under the GEF-IAP on Food Security and supported by programme partners include the Land Degradation Surveillance Framework (LDSF) supported by ICRAF, the Ex-Ante Carbon Balance tool (Ex-Act) for calculating project carbon benefits developed by FAO and widely used by IFAD and partners, and the Diversity Assessment tool for Agro-Biodiversity and Resilience (DATAR) supported by Bioversity. These tools will be complimented by the IFAD developed Multi-dimensional Poverty Assessment Tool (MPAT) and the Results and Impacts Monitoring System (RIMS) household survey tools which will also be applied by the PRIDE. The MPAT and the LDSF tool will allow for the monitoring of resilience both at household (MPAT) and ecosystem level (LDSF). Since it is well recognised that poverty is closely linked to climate change vulnerability a decrease in multidimensional poverty level will also increase households resilience. Further the MPAT with the added resilience module also looks at ha of land cultivated by the household under climate resilient management practices, availability of water and efficiency in water use, gender disaggregated participation in climate risk management groups, and infrastructure made climate resilient. The results of the MPAT household survey is also aggregated at village level. At the wider system level the ecosystem resilience will be measured through the LDSF which include land degradation prevalence, flood risk, and vegetation cover (reforestation and deforestation and other vegetation). These are all factors important for the ecosystem resilience. The information obtained through this M&A process will be used for the various products and processes planned in the Knowledge Management Strategy.

ERASP THEORY OF CHANGE[14]



Sustainability

48. Implementation of the project will be through government structures, in particular the District officers and extension network, which will be strengthened to augment the numbers on the ground as well as capacities and capabilities to support VNRMCs and farmer groups. This will ensure that there is institutional support for the project activities after the grant ends.

[14] The bold arrows depict the main outcome – objective connections. The red lines indicate the incentive framework which is expected to propel a virtuous cycle of catchment management into the future, Access to savings and loans is essential to enable the development of natural-resource based enterprises, including agricultural value chains (agro-dealers, equipment and other inputs) as well as relieving pressure on forestry resources to meet immediate needs.

49. Sustainability of the project approach will be generated through a strong incentive framework. Three main benefits streams are expected, two of which raise the returns to SLM. The first is increased agricultural productivity including value addition (to be provided under PRIDE); the second is expanded livelihood options derived from non-timber forest products, and the third is the time and cash savings derived from easier access to firewood and water, time and cash savings from reduced medical expenses due to water borne diseases in flood events as well as the averted care burden. The equitable sharing of benefits will be ensured through effective implementation of the CAMPs and the VNRMC plans. The use of recognised local level structures (Traditional Authorities and the VNRM groups) in the implementation of village-based NRM plans, which provides a pathway for scaling up, is an integral part of the project strategy. Formalising the VRNMCs into legal entities in order to boost their enforcement capacity will reinforce the benefits streams.

50. Sustainability in the adoption of SLM practices will be promoted through supporting a motivated and knowledgeable extension service through recruitment of facilitators to fill the gaps, greater technical support from the extension network and investing in work 'enablers' at the extension level to secure greater involvement in results monitoring and reporting. This is intended to improve the institutional support given to the farmer groups and *de facto* improve the quality of the demonstration plots. Sustainability of adoption rates will be promoted through working with women and men's groups separately. Participatory approaches used for the agricultural component will support farmer own priorities based on farmers' own knowledge of what works and challenges in order to ensure relevance. Sustainability will also be strengthened through agro-biodiverse farming strategies, which is intended to contribute to a stabilisation of production yields year to year, and associated means to continue sustainable livelihood strategies in future years, but with minimum levels being substantially higher than at present, due to improved varieties based on indigenous varieties (landraces). The project will implement a participatory approach based on indigenous knowledge and farmer to farmer knowledge sharing.

51. Advocacy and knowledge management are essential to scale up the ecosystem-based approach in food security strategies. There are political barriers to scaling up and moving away from reliance on input subsidies, with only weak support for sustainable land use methods. ERASP, through Component 1, will generate evidence on the state of the environment for the selected catchments. Through Component 2, extension officers will be trained and motivated to report on results from the work on increasing agricultural productivity. The project, through Component 3, will put into place an environmental monitoring framework and knowledge management system to develop the evidence base. Resources will be dedicated to producing user-friendly fact sheets and audio-visual materials to disseminate the results and policy-relevant messages.

52. SAPP will support the establishment and strengthening of village saving groups to overcome cost barriers for access to farm inputs and for the additional equipment needs of the farmers. These credit facilities may also be drawn on to buy treadle pump packages, which would further help communities to observe the buffer zones agreed in the catchment management plans developed in Outcome 1. The village and savings clubs will be a key tool in empowering groups to expand their livelihoods, during and post project grant. If run well, they have been shown to be self-sustaining. A key emphasis of this component will be financial literacy training and agreeing clear rules of engagement.

53. At the central government level, the project has a strategy to mainstream successful catchment management strategies into national policies, plans and budgets. For example, it will produce reader-friendly and eye-catching knowledge products including audio-visual material, based on the evidence generated by the project. The project will provide technical contributions through coordinating structures at the Centre, for example, the National Task Force on SLM and the GEF Projects Steering Committee. Two National workshops are planned for dissemination of project results to policy makers in order to advance policy development on land and resource use for poverty reduction.

A.2. Child Project? If this is a child project under a program, describe how the components contribute to the overall program impact.

54. ERASP contributes to the GEF IAP Fostering Sustainability and Resilience for Food Security in Sub-Saharan Africa Hub Program components. As follow:

Component 1. Institutional frameworks for influencing sustainability and resilience.

55. The project contributes to the achievements under this Hub Program Component by building capacity and ownership among different government, non-government stakeholders and community members for improved catchment management. The land use planning process, and the five sub Catchment Management Committees will support the establishment of a functioning national level multi-stakeholder frameworks for integrated NRM planning and rehabilitation of the catchments. In addition, ERASP will generate evidence on the state of the environment for the selected catchments, and contribute to establish incentives for integrated approaches at national level.

Component 2. Scaling up integrated approaches for sustainability and resilience

56. The Catchment Management Committees (sub-catchment area/WRU) and associated Plans will be operationalised as an effective NRM planning and coordination mechanism. By doing so the project is expected to contribute to the GEF IAP corporate results of maintaining ecosystem goods and services and improving the resilience of the production systems. The project is also designed to scale-up the adoption of catchment area conservation and improved agronomic practices to achieve a sustainable intensification of the agricultural production, while safeguarding the natural capital. By doing so, this child project contributes to increase the area under SLM (GEF IAP Replenishment Target).
Likewise, the introduction of cook stoves, the promotion of wood lots for charcoal production, and the use of alternative energy sources, will reduce GHG emissions, and contribute to the GEF IAP regional program's mitigation targets.

57. Furthermore, ERASP intends to raise incomes, expand livelihood options through enterprise development and increase agricultural productivity. The improved catchment management will bring positive social impacts, as for instance time and cash savings for women and children in collecting water and firewood. By doing so, this child project will contribute to achieve food security in the region.

Component 3. Monitoring and assessment of ecosystem services, global environmental benefits and resilience

58. Finally, monitoring and assessment approach will target national capacity development to measure changes in land degradation, climate resilience and maintenance of ecosystems functions. For instance, the Project will build on a Land Degradation Surveillance Framework, including appropriate tools for measurement of GEBs. This approach will enable collating information to meet Malawi's reporting obligations under the UNFCCC, UNCCD and CBD as a signatory of these, and demostrate impacts towards the GEB targets set under the GEF IAP regional program.

59. The Malawi ERASP project will contribute to the IAP targets on i) land under integrated management ii) GHG emission avoided per year and iii) conservation of genetic diversity.

Global Environmental Benefits				
Indicator	**IAP Target**	**ERASP Contribution**		**Percentage of IAP target**
Land under integrated management (ha)	10,000,000 ha	35,000		0.35%
GHG emissions avoided or reduced (tons CO_2e/year)	10-20 million tons	88,745		2% (of 10 million tons)

Conservation of genetic diversity on farm: Number of varieties on farm (number/ha)	15-25%			
Land cover (trends in NDVI)	10-20%			
Socio-economic benefits				
Indicator	**Target**			
Beneficiary households (number)	2-3 million	25,680		1%
Dietary diversity	TBD			

A.3. Stakeholders. Identify key stakeholders and elaborate on how the key stakeholders engagement is incorporated in the preparation and implementation of the project. Do they include civil society organizations (yes ☒ /no☐)? and indigenous peoples (yes ☒ /no☐)? [15]

60. **Preparation:** Two design missions were undertaken in the preparation of the project design document. The first 27 July to 7 August 2015 and the second 20 -29 January 2016. During the first mission, based on the potential PRIDE investments, which are in two clusters in the Northern and Southern regions, the design team visited sites in Rumphi (Kawaza), Karonga (Mwenilondo), Chitipa (Mafinga hills), Phalombe (Nkulambe) and Zomba (Matoponi) Districts. Informative discussions with potential PRIDE beneficiaries were held at each site. In order to learn lessons from some of the ongoing projects the Mission also visited a model village (Mwambero) under the CARLA project and a site under the SLM project (Balaka district) that both have GEF financing and are implemented by the AfDB and UNDP respectively. The field vists were led by District officers from the various Government Agencies as well as central Government staff from the Department of Irrigation, Environmental Affairs and Debt and Aid. The Mission also consulted with other development partners, including World Bank, EU, UNDP, AfDB, DfID and USAID as well as NGOs working on environmental management and climate resilience building. The Mission's findings were discussed in detail with representatives of the Ministry of Agriculture, Irrigation and Water Development and the Ministry of Natural Resources Energy and Mining, which houses the Environmental Affairs Department at a wrap-up meeting chaired by Ministry of Finance held on 7th August 2015. A stakeholder workshop was held towards the end of the mission where the main elements of the project strategy were presented and discussed. The stakeholders included Government agencies, University representatives, NGO representatives, Civil Society Network, Development Partners and staff from on-going related projects.

61. During the second mission, there was close collaboration with a Government-constituted team from Department of Irrigation (DoI) and Environmental Affairs Department (EAD). The Mission's close collaboration with DoI and EAD ensured the involvement of key ministries and agencies. Consultative discussions were held with representatives from the following: Department of Land Resources and Conservation, Department of Forestry, Department of Fisheries, Department of Animal Health and Livestock, Department of Agricultural Extension Services, Agriculture Risk Management Unit, Food Security Unit, Department of Disaster Risk Management. A two day District officials workshop was held in the first week of the mission to validate the Theory of Change and develop the results based logical framework. A stakeholder consultative workshop was held on Wednesday 27th January 2016 where the project strategy was presented. The stakeholders were the same as those that participated in the initial workshop.

[15] *As per the GEF-6 Corporate Results Framework in the GEF Programming Directions and GEF-6 Gender Core Indicators in the Gender Equality Action Plan, provide information on these specific indicators on stakeholders (including civil society organization and indigenous peoples) and gender.*

62. **Implementation**: The sub-catchment planning process will take place at two levels, the first at the higher and the second at the village level. The target is for five sub-catchment management plans and 66 village natural resource management plans. The ERASP will have a catalytic effect to reach a wider set of households and land area beyond the immediate project boundary by working through the five sub-CMCs, which can be linked to the larger-scale CMCs to be established under the Water Act, and by promoting SLM in the additional sites under PRIDE and other subsequent programmes from Government and other development partners. The project will directly target 13,000 hectares of land rehabilitation and SLM and an estimated 35,000 ha under catchment area management plans in three Districts protecting five PRIDE irrigation sites (See Map in Annex E). A simple extrapolation to the other 10 PRIDE irrigation sites could mean an additional 35,000 hectares of land under sustainable planning and management, bringing the total to 70,000 hectares directly and indirectly impacted by the project.

63. The sub-CMCs will develop CAMPS. The sub-CMCs should have representation of ministries, regional development authorities, local government; traditional authorities, NGOs, community groups and the business community within the upstream as well as midstream and downstream users. ERASP will develop a mobilisation strategy that will consider how best to structure the sub-CMC in order to provide a motivated and balanced representation that allows for equitable participation of all constituencies in catchment management, perhaps incorporating sub-committees for different constituency groups.

64. The VNRMCs will develop village land-use and resources management plans, which will align with the CAMPS. The communities will be empowered to enforce the plans by legal registration of the VNRMCs, under provision of the 1997 Forestry Act and develop methodological guidelines, terms of reference and simplified models of contracts for management plans at village level, as well as develop a public information and training plan for the communities. Registering the groups as legal entities will enable communities to develop by-laws, which enforce the CAMPs and village land-use and resources management plans. The catchment level CAMPs and village level plans will determine the shape of each of the intervention strategies. Methodologies and 'how to' guidance manual will be produced in English and the local language for every output in this Component.

65. In the implementation of Component 3, a training programme will be developed for District and national level staff and interested youth from the catchment areas to measure and continuously follow-up on ecosystem indicators by applying the LDSF, Ex-ACT and DATAR tools. Training will also include data analysis and database management and how to turn the data into useful knowledge and information products to support district level planning and, creation of evidence for awareness and upscaling. The monitoring and assessment tools will be integrated into the monitoring and planning procedures of District offices. Skills development in data management and reporting will be included in the capacity and training plan to be developed (see para 57). The connections between the data and information and the development of the District Development Plans will be strengthened.

66. Implementation of the Components will be through government structures, in particular through District officers and the network of extension officers, which will be strengthened with numbers and capabilities as required. This will ensure that there is institutional support for the project activities after the grant ends. Service providers will be contracted in where specific technical advice is needed in the implementation of specific outputs such as installation of biogas units and energy efficient cook stoves.

67. The role of NGOs will be important to i. complement the agricultural extension services, where these are considered inadeguate, ii.support local/regional seed systems and supply of selected crop varieties, iii. participation in the catchment management committees of those NGOs engaged in water resources management, iv. investigation on the physical, and socio-economic causes and effects driving the forest, land, soil and water-related degradation and use

problems in the catchment, v. facilitation of community planning processes and in developing social, environmental and economic assessments. Service providers will also be contracted in where specific technical advice is needed in the implementation of specific outputs such as farmers' training on agro-biodiversity and SLM practices, provition of timely climate information for farmer's decision making, as well as installation of biogas units and energy efficient cook stoves.

A.4. Gender Equality and Women's Empowerment. Elaborate on how gender equality and women's empowerment issues are mainstreamed into the project implementation and monitoring, taking into account the differences, needs, roles and priorities of women and men. In addition, 1) did the project conduct a gender analysis during project preparation (yes ☒ /no☐)?; 2) did the project incorporate a gender responsive project results framework, including sex-disaggregated indicators (yes ☒ /no☐)?; and 3) what is the share of women and men direct beneficiaries (women 51%, men 49%)? [16]

68. Women are disadvantaged compared to men in Malawian society. Food security is a perennial issue but women and children suffer relatively more for a range of reasons. Women are disadvantaged both in conflicts over land rights as well as in access to lease options. Cultural beliefs deny women and children consumption of high nutritive value foods. Extension and training services favour men. The 2010/11 bi-annual gender audit showed that seasonal average of women membership to NASFAM Associations was only 34.4%. Women earn less than men (USD 213 annual compared to USD 281 for men) and have fewer assets. Women have a significantly heavier workload than men, less say over land and water resources and decisions regarding income generating activities. Women in all households are responsible for planting, weeding and harvesting. Women are also burdened by additional responsibilities such as collection of water, firewood (with daily distances of up to 4 kms taking up to three hours per day), fetching and preparing food, caring for the sick and other household chores. Malaria and cholera is more prevalent due to unsafe water especially during floods and the care burden falls to women. Respondents to the baseline survey also said that during the dry season most wells and rivers dry up, which means having to queue for water in boreholes and the time burden falls to women. Women and children are disproportionately affected by forest degradation as they spend more time searching for firewood with impacts on productivity, schooling, personal security and wellbeing. These responsibilities and burdens are set to disadvantage women even further with climate change impacts on erratic rainfall and floods. Recent research findings for Malawi show that increased child labour, displacement of higher value activities, malnutrition, greater susceptibility to diseases and breakdown of social cohesion including violence were reported as the negative effects of deforestation.

69. The situation diagnostic carried out for this project design phase showed differences of roles and decisions made. Women prefer crops that contribute to household food security where as men prefer crops for sale. Men decide over the sale of cattle, goats and pigs, while women can decide over chickens. Women gather firewood for household consumption where as men seem to only be involved in gathering firewood for sale and charcoal production. It was noted that due to increase in the demand for women's roles at the household, boys in all cultures have started to play certain roles that in the past were mainly for girls and women such as collecting water. Most of the women/girls roles are carried out on a daily basis and are routine activities while men's roles are mostly demanded when need arises.
ERASP has a deliberate strategy of reaching women as well as men. The total number of men and women to be reached by the project will be 15,793 and 16,381 respectively, which is about a 49/51 percentage share of the project activities. The main project gender-disaggregated targets are as follows:

- to halve food insecurity, reaching 25,680 farmers, 30% being women;

[16] Same as footnote 8 above.

- to engage women and youth in decision-making in the sub-CMC and the VNRMCs. Through the 66 planned VNRMCs, 50 % of these trained in catchment area management and climate change risk reduction will be women and 15% will be youth;
- for improved soil and water conservation: 40% of the 16,600 farmers will be women together with 25% youth; 30% of lead farmers will be women;
- for outcome 3 training on monitoring and assessment, 50 youth from communities trained, 40% of these women.

70. Other elements of a gender equity strategy are that i) women tend to recycle seeds and show interest in indigenous varieties that were once important in local food systems; hence, the agro-biodiversity activity will be particularly beneficial to them ii) the project will support women's equal involvement in management, planning and decision making around the woodlots and other NTFPs iii)women and men's groups will be organised separately in farmer field schools in order to promote high adoption rates and help both sexes move towards food security iv) the project includes an explicit strategy to improve women's decision-making capacity and empowerment as a key driver of improving agricultural productivity in the project areas. The project will train trainers to use the Gender Action Learning System (GALS) tools to roll-out the methodology to the communities. The Socio-economic monitoring tool (MPAT) to be implemented under Component 3 will be accompanied by a set of gender-relevant survey indicators from the Women's Empowerment in Agriculture Index (WEAI) as well as the IFAD set of indicators (RIMS).

71. The project intends to raise incomes, expand livelihood options and improve food security through improved agricultural productivity, natural resource-based enterprise development and time and cash savings for women and children in collecting water and firewood and averted costs from a reduced incidence of flooding. The introduction of efficient stoves will also have health benefits from reduced indoor smoke, primarily benefitting women and children. Nutrition and food preparation training will be provided from PRIDE activities. Considering that women are the target group for this activity female extension workers are required, which could be an opportunity for young women to get involved in the awareness raising also on health benefits, promotion and sale of the stoves.

A.5 Risk. Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

72. The risks to the project and a risk mitigation strategy are summarised in the table below.

Risk	Mitigation Measures	Level
SOCIAL: Lack of community participation; process becomes discredited through unmanaged conflicts	Seek the leadership of Traditional Authorities in the VNRM process. Upgrade facilitation and conflict management skills for extension workers. Build off existing village development plans. Allow enough time for community planning processes in order to develop ownership over the CAMPS.	Medium
SOCIAL: Low adoption of practices	Investments will be made in the extension network to support a motivated and knowledgeable extension service by recruiting facilitators to fill the gaps, greater technical support from the extension network and investing in work 'enablers' at the extension level to motivate for better quality demonstration sites. On the part of the farmers, participatory approaches used for the agricultural component will support farmer own priorities based on farmers' own knowledge of what works and challenges in order to ensure relevance. Adoption rates will be promoted through working with women and men's groups separately.	High

SOCIAL: Low level of benefits threaten sustainability of the initiative	The project intends to raise incomes, expand livelihood options and improve food security through three benefit streams: agricultural productivity, forest-based enterprises and cash and time savings, especially to women and children.	Low
TECHNICAL: Low quality of lead farmers in the farmer field schools.	Lead farmers will be selected, trained and regularly supervised. Investments will be made in the knowledge base, capabilities and reach of extension services in the project areas, which will support the capacity development of lead farmers.	High
INSTITUTIONAL: Limited District level capacity	There will be an emphasis on training and skills development among District planning and extension structures for delivery of the project components, a strengthening of the extension network to reach the recommended ratio of 1 extension worker per 750 farmers, as well as strengthening of coordination systems at the District level through the application of an integrated planning approach. Short term consultancies will be tendered to help develop the strategy for the overall capacity development, trainings and for targeted management pieces in the roll-out of the project components.	Medium
POLITICAL: Weak sustainability because the project approach is not led by nor nested in Malawian institutional structures.	For the project catchments, the project will implement the Water Resources Act by establishing sub-catchment committees under the National Water Authority. The project will strengthen village planning structures set up under the Decentralisation Act. The project will work through District Councils and extension structures.	Low
POLITICAL: Discontinuation of practices once the project ends	Develop tangible benefits from the catchment management planning process. Invest in human capacity (technical & leadership skills) and coordinating structures. Incentivise commitment by demonstrating results and building capacities.	Medium
ENVIRONMENTAL: project leads to greater deforestation in surrounding areas	Catchment management committees will be the mechanism used for further dialogue and awareness raising of areas surrounding the project implementation sites. Project support should be focused on bringing into discussion the District officers and community leaders from neighbouring villages, which also would help with replication of the project approach.	Medium
ENVIRONMENTAL: reforestation does not succeed because of low survival rate of seedlings	The project will use local knowledge and experiences to select whether planting or assisted regeneration will work best. Planting will be encouraged in January during the rains and only seedlings that are more than 30cms. Community protection of the planted area will be required – polythene tubes and fencing for seedling protection are included in the budget; ownership for enforcement and management of the protected areas will be secured through the village land-use maps, formalisation of village groups and developing by-laws.	Low
ENVIRONMENTAL: Extreme floods and droughts wipe out project gains	The project is aimed at reducing these risks through its work on catchment management, with impacts in river flow regulation; soil and water conservation and decision-making that takes seasonal and shorter-range forecasts into consideration. But in the short-term, during project implementation, these risks could indeed be	Medium

	experienced. The impact will be reduced by increasing the capacity of households to bounce back from the loss through i) micro-credit facilities established in baseline projects ii) ensuring that community seed banks and storage facilities are placed on higher ground iii) knowledge and skills transfer that will enable getting sustainable production models re-started.	

73. Risks of delay in the start-up phase of the project will be minimized. An indicative list of activities to be undertaken in the first six months is provided in the table below. These activities can be taken forward by the PRIDE/ERASP Environmental Specialist, who will already be place (as PRIDE is due to start-up earlier). This inception phase work plan sets up the substantive work to be carried out in Components 1 to 3.

		Government mobilisation	Months				
#	Activity	1	2	3	4	5	6
1	Recruit regional environmental experts		P				
2	Recruit extension/facilitators		P				
3	Organisational, capacity and training needs assessment		P				
4	Procure working equipment for extension workers		P				
5	Develop training schedule for District and EPA trainings						
6	Develop workplan and process for catchment management.		P				
7	Baseline studies (LDCF, MPAT, Ex-Act, Agro-biodiversity)						

A.6. Institutional Arrangement and Coordination. Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

74. The Ministry of Agriculture, Irrigation and Water Development will be the Executing Agency, as it is for the PRIDE investment. The Ministry will be the main accountable entity for the project results. The implementation will be by the PRIDE/ERASP Programme Coordination Office (PCO) comprised by dedicated and highly qualified personnel either from government or recruited from the labour market. The PCO, funded through PRIDE, will include a Programme Coordinator, and Specialists in the following areas: Procurement; Financial Management; Institutions, Environment; Gender and Targeting; Irrigation; Agriculture & Value Chains; Planning, Monitoring and Evaluation. The latter will be charged with Knowledge Management (KM) as well. However, ERASP will recruit a consultant on a periodic basis to provide focused support in KM to ensure policy briefs and other products are adequately developed, packaged and disseminated. Given the spread to the northern and southern regions, there will be two Programme facilitation offices, staffed by coordinators.

75. ERASP will be managed by the PRIDE/ERASP environmental specialist. ERASP will finance two additional positions, which are regional environmental experts, who will be located in the northern and southern programme facilitation offices. These experts will coordinate the catchment and environmental management activities in the regional clusters and provide support for monitoring and assessment. An Environment Officer from EAD will be attached to the Environmental Specialist as part of capacity building for the Department.

76. Given the focus on environmental management, the PRIDE/ERASP Programme Coordinator will report directly to the Director of Environmental Affairs Department on ERASP as well as the Director of DOI. There shall be one holding account for both projects but two separate operating accounts for each of the projects. The Director of Environmental Affairs shall be the principal signatory to the independent ERASP operating account.

77. The PCO will ensure that adequate services are mobilised for the day to day implementation of activities. A two pronged approach will be followed including enabling relevant District and Extension planning area staff such as agriculture, land resources and environmental officers to enhance service delivery to the target communities and engaging service providers for capacity development where necessary. ERASP will seek partnership arrangements with different stakeholders for provision of goods and services. For example, the District officers and extension network, will be strengthened to augment the numbers on the ground as well as capacities and capabilities to support VNRMCs and farmer groups. This will ensure that there is institutional support for the project activities after the grant ends.

78. The District officers will play a crucial role in the upscaling of the agro-biodiversity and SLM practices and ensuring austainability of project outcomes through provision of technical support to farmers, collection of information on changes and benefits achieved at local and catchment levels as well as documentation of GEB. Again, ERASP involve the District officers in the dialogue and awareness raising of areas surrounding the project implementation sites, which would help with replication of the project approach. The Water Resources Officers will also have an important role, as they will coordinate the sub-catchment committees, and convene District officials in their regular coordination structures to discuss the planning work of the sub-CMC. As detailed under PRIDE, the community level entry point for ERASP will be the traditional authorities and with the VNRMCs. The VNRMCs will play a key role during the planning and implementation phases. The VNRMC plans will be aligned to the catchment plans developed by the sub-CMCs.

79. Coordintaion will be ensured with ongoing GEF Projects through the common Steering Committee that is chaired by Enviromental Affairs. Synergies will be promoted with UNDP, who coordinates the Climate Change Working Group that meets at least twice every quarter and is involved in policy level work on mainstreaming climate change in national and district level planning using GEF financing. Collaboration will also be sought with the DfID, Norway and Irish Aid financed Enhancing Community Resilience Programme, which is implemented in the 11 districts most prone to natural disasters and climatic hazards. Synergies will be established in common districts and similar activities will not be implemented in the same villages. The synergies will be achieved through joint planning for the ERASP with coordinators and implementing partners of similar projects being invited to sessions. In addition exchange visits will be undertaken for beneficiaries to exchange lessons, experiences and share knowledge with other project beneficiaries. Similarly, partnerships will be sought with in the two BMZ programmes in Malawi, Food and Nutrition Security Programme and the Green Innovation centres for agriculture and food sector. The approaches being taken in the two programmes such as the nutrition focus and value chain linkages are both being emphasised in both PRIDE/ERASP. Entry points will be identified and information shared to the target beneficiaries to access the services for applicable value chains. The linkages will be facilitated through PRIDE/ERASP. Lessons learnt from the CARLA and the SLM GEF financed projects implemented by AfDB and UNDP respectively as well as the FAO implemented Economic and Policy Innovations for Climate Smart Agriculture project informed the approach of the ERASP. The lessons included the need to build capacities at the local level and providing incentives for a shift towards long term perspective and benefit sharing for multiple watershed users. This is being adopted through the Catchment Management Committtees that will be set up for the north under ERASP, based on the model being applied by the Shire River Basin Management Programme. The need for streghthening the Commmunity based natural resources committees is a lesson from CARLA and SLMP that informed the capacity building activities for these groups that has been included in ERASP.

Additional Information not well elaborated at PIF Stage:

A.7 *Benefits.* Describe the socioeconomic benefits to be delivered by the project at the national and local levels. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

80. The primary benefits are expressed primarily through the project goal and objective targets. The headline targets are that through catchment management and SLM practices, the project aims to reduce food insecurity from an average of four to five months in the five catchments to less than two months, a 20% reduction in child malnutrition, with a total outreach of 32,100 and yield increases above 20% from rain-fed crop and livestock production achieved by 25,680 farmers (30% being women).

81. Benefits will be accrued to five of the baseline PRIDE irrigation investments in the three project Districts (Karonga, Phalombe and Machinga). Average stream flows are projected to increase from baseline levels, and sedimentation flows affecting the irrigation schemes are expected to be reduced by 40%.

82. Regarding Global Environmental Benefits, the land degradation prevalence is expected to fall by about 40% from rates as high as 60% prevalence, and the contribution to the control of global greenhouse gas emissions is expected to be 1.77 million tonnes of CO_2eq. Other environmental benefits are expected to be a reduction in flood risk index from high to medium.

83. Other benefits accruing to the project communities include:

- Reducing the deforestation rate to half of current levels to an average of 3 hectares annually;
- 565 hectares of reforested land;
- 11,320 households using energy efficient cookstoves;
- 5 producer groups and 5 efficient charcoal kilns established linked to sustainable woodlots;
- 5 alternative energy projects;
- 856 households establishing non-timber forest-based enterprises, generating around USD 30,000 annually;
- 1,000 households benefiting from improved small stock;
- A tripling of hectares given over to agro-biodiverse systems.

84. More broadly, the project intends to raise incomes, expand livelihood options and improve food security through three benefit streams, which will be the main incentive mechanism to maintain the sustainable land management systems into the future. Higher returns to land management are expected through the blended nature of ERASP with PRIDE. Higher agricultural productivity will be one benefit stream. Enterprise development based on natural resources will be another. Other positive social impacts from improved catchment management are reported regarding time and cash savings for women and children in collecting water and firewood and averted costs from a reduced incidence of flooding. Spin-off benefits could include retention of children in school.

85. Resilience to climate change will be brought about both in the work undertaken with farmers in the farmer field schools to develop farming strategies that anticipate and accommodate climate variability and in the strategy to increase agro-biodiversity. In addition, catchment rehabilitation and management is expected to prevent potential floods and ameliorate the effects of dry periods through improved flow regulation of rivers and based rehabilitation such as contour

bunds to slow down surface run-off and siting of trees as protection mechanisms against floods and mudslides on hilly areas.

86. The activities on sustainable charcoal and alternative energy are designed with a view to start up legal or new areas of market demand. Charcoal production is one of Malawi's biggest industries and has the potential to become a zero carbon, renewable energy. The intention is for this project to set up sustainable charcoal groups that will become licensed and so kick start a cleaner charcoal supply line to urban centres. Likewise, ERASP will explore whether it could generate some more experience with biogas and other renewable energies that could begin to develop market demand and supply.

87. Communities will be empowered by the project through a concerted effort on training and capacity development, development of information and knowledge products, including training manuals, in the local language as well as in English, formalising VNRMCs into legal entities for enforcement capacity and the value addition, marketing and credit support provided by the baseline projects. The extension service will be empowered through professional enhancements such as working facilities (mobility, power and computing capabilities), cadre support through additional recruitments of facilitators and trainings.

88. ERASP has a deliberate emphasis on gender equity in the achievement of results and its implementation strategy therefore provides for separate interactions with men and women as well as setting gender-disaggregated targets for project activities, see Section A.4 for more details.

A.8 *Knowledge Management.* Elaborate on the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives (e.g. participate in trainings, conferences, stakeholder exchanges, virtual networks, project twinning) and plans for the project to assess and document in a user-friendly form (e.g. lessons learned briefs, engaging websites, guidebooks based on experience) and share these experiences and expertise (e.g. participate in community of practices, organize seminars, trainings and conferences) with relevant stakeholders.

89. Knowledge management will be a process by which value is generated from project knowledge based assets. One of the main purposes of knowledge creation and sharing will be to support policy making by building a comprehensive body of evidence, lessons learned, and good practices. The project has a number of knowledge management strategies to strengthen project implementation and to keep a shared understanding and commitment to the project strategy.

90. The PM&EA officer supported by a part time knowledge management officer, the Environmental Specialist and the Regional Environmental Experts and district officers will ensure that stories are collected on a regular basis, providing factual information on changes and benefits achieved at local and catchment levels as well as documenting GEBs and upscaling to other catchments. Such testimonies are especially relevant for documenting programme attribution to higher level impacts. Photo archives will be kept as part of structuring qualitative information. To ensure an effective flow of information. The PM&EA Officer will develop simple and user-friendly tools for data collection, entry, processing and analysis. Standard forms and formats will be made available to ensure consistency in the way data is recorded, which will also be supported by the application of the LDSF, DATAR, Ex-ACT and MPAT tools assessing local and global environmental and poverty reducing benefits.

91. Policy influence will be achieved by the data and evidence generated through the environmental monitoring of the project interventions, such as river flow, decreased sedimentation and reduced soil erosion. This information will be used to make the case to politicians and District and Central Government about the nature, feasibility and effectiveness

of catchment planning. Conservation and community based ecosystem and natural resource management will be illustrated as the foundation for productive agricultural practices, sustainable wood fuel supply (an essential plank of the country's energy mix), expanded livelihood options and the positive social and economic spin-offs on women and children especially. Information will be produced that is eye-catching, reader-friendly, supplemented with audio-visual knowledge products. The project's geographical coverage represents catchments in the north as well as in the south with different agro-ecological zones, social organisation (patrilineal system in the North and matrilineal systems in the South) and tribes with different attitudes towards livelihood practices. The project findings will reflect what these differences mean for catchment management and the uptake of different technologies and practices, which could inform policy development.

92. Two national workshops will be held to showcase findings to senior policy makers and external partners. The first workshop will be held in Year 3 to disseminate the findings and progress on the catchment planning process. An additional aim will be to start the dialogue on the land-use trade-offs, strategies for increasing livelihood returns to land management and where policies could be harmonised with respect to promoting these landscape planning approaches, as well as the data that the project will generate to inform these debates. The second national workshop will be held in Year 7 (the last year of the project) to disseminate the project results. A financial plan to scale up the project approach, inclusive of evaluation findings of the project implementation experience, will be developed in preparation for the second national workshop in order to attract internal and external financing for the approach. A schedule for policy harmonisation regarding land use could also be agreed. Collaboration with the World Bank-supported Shire River Basin Project will be undertaken where possible to strengthen the policy messages and dissemination to senior policy makers.

93. Public awareness materials will be produced in the local language to raise awareness of the catchment management approach and to inform non-project communities and neighbouring Districts adopting similar strategies and approaches. These public awareness materials will include the diagnostic data and information that will be generated in the catchment planning process (Component 1). Methodologies and 'how to' guidance manual will be produced in English and the local language for every output in Component 2. Fact sheets conveying methods, tools, results and case studies will be produced, along with human interest stories and audio-visual products. The emphasis will be on reporting on as much quantitative information as possible. Technical knowledge products will draw on and contextualise IFAD knowledge products where appropriate.

94. An annual learning exchange will be organised between district officials involved in the project as well as others in adjacent District on integrated catchment planning approaches. This approach will also help to replicate the project methods.

95. Together with the other 11 country projects under the GEF-IAP-FS, ERASP will contribute to the collective impact and learning of the program. The intention is to inform approaches towards win-win solutions between food production and maintaining ecosystem services in face of increasing climate variability. Each country project has committed to participating in the peer-to-peer applied management opportunities, which are an integral part and distinct feature of this program, and which will be cost shared with the cross-cutting coordination and applied knowledge management and capacity building ''hub'' project. Malawi will both participate in and host a regional knowledge exchange visit. Communities of practice will be set up on specific themes of interest and value to multiple GEF-IAP-FS countries, which will be defined during the program implementation.

96. In turn ERASP will benefit from participation in this program by accessing through the activities delivered by the hub project good practice from the other participating countries through peer learning, current thinking on food security policy as well as access to technical expertise on a cost sharing basis where there is interest from multiple project

countries. ERASP will also benefit from the capacity building activities and the tools that will be developed under the hub project. The program will generate knowledge management products and have an advocacy function, which draws upon and creates visibility for the anticipated success stories from the country projects at the level of sub-regional and regional bodies within the context of food security debates and policy making. This program involves multiple GEF Agencies but IFAD is the Lead Agency. The program will be coordinated via a substantive cross cutting project worth $10.4m and with a full time task manager.

B. Description of the consistency of the project with:
B.1 *Consistency with National Priorities.* Describe the consistency of the project with national strategies and plans or reports and assessements under relevant conventions such as NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.:

97. The outcomes prioritised in this proposal will support policies and strategies in Malawi, as well as contributing to targets and goals of the multilateral environmental Conventions. The project will contribute to the four strategic objectives in the 10-year national Strategic Plan and Framework (2008 –2018) of the Convention to Combat Desertification UNCCD, namely i) improving the living conditions of affected populations (livelihood diversification, reduced land degradation and vulnerability to drought); ii) improving the condition of affected ecosystems (reduce land degradation and increase land productivity) iii) generating GEBs through increasing biodiversity and carbon stocks and iv) mobilise resources to support implementation of the Convention through developing enabling policy environments. The project will contribute also to its five operational objectives of advocacy, awareness raising and education; creation of policy frameworks, increase knowledge and strengthening knowledge sharing systems; capacity building; and accessing financing and technologies. ERASP is also line with the Malawi National Action Programme for the UNCCD (2001) in addressing the different forms of environmental degradation that enhance land degradation (inappropriate farming, high pressure on natural resources), while tackling poverty and food security as a central objective.

98. The project will contribute to the Aichi Biodiversity goals and targets (2011 –2020) under the Convention on Biological Diversity, specifically to four of the five strategical goals (and related targets) which are i) reducing the direct pressure on biodiversity and promoting the sustainable use ii) improving the status of biodiversity by safeguarding ecosystems, species and genetic diversity iii) enhancing the benefits from biodiversity and ecosystem function and iv) enhancing implementation through participatory planning, knowledge management and capacity building. In line with the Malawi National Biodiversity Strategy and Action Plan (2015-2025), and its draft Agrobiodiversity Strategy, the project recognises the importance of documenting traditional knowledge used for agro-biodiversity conservation, as well as the key role played by the Malawi Plant and Genetic Resource Center under the Ministry of Agriculture and Food Security as a custodian of plant genetic resources, particularly those that are used for food and agriculture.

99. The project is aligned with the 2015 Paris agreement under the Framework Convention on Climate Change in the areas of greenhouse gas mitigation, and adaptation to climate change through the work to reduce vulnerability to floods and droughts, as well as the work to develop information and knowledge management systems and links to policy makers for scaling up of successful approaches. The project also contributes to the implementation of the recently published National Climate Change Investment Plan (2015), which prioritises sustainable land use practices such as: (a) development and promotion of adoption of soil and water conservation structures, (b) increasing access to land and improving the ease and speed of land titling, (c) reducing degradation in priority areas with SLM practices generating climate change adaptation and mitigation benefits, (d) promoting improved crop productivity and diversification of crops, (e) promoting increased livestock productivity and production focusing on increasing the number and quality of

various livestock by ensuring animal health and controlling diseases. Besides, ERASP addresses the top seven adaptation priorites identified in the Malawi's National Adaptation Programmes of Action (NAPA, 2006): (a) Sustaining life and livelihoods for the most vulnerable communities, (b) Enhancing food security and developing community based storage systems for seed and food, (c) Improving crop production through the use of appropriate technologies, (d) Increasing resilience of food production systems to erratic rains, (e) Targeting afforestation and reforestation programmes to control siltation and the provision of fuel wood, (f) Improving energy access and security in rural areas, (g) Improving nutrition among rural communities.

100. ERASP is fully aligned with the Malawi Growth and Development Strategy II (2011-2016), the overarching medium term strategy to achieve the country's long term development objectives. Agriculture is a key strand of the first theme in it – Sustainable Economic Growth - with specific objectives to increase agricultural output and diversification and reduce land degradation. Natural resource management is another strand of Theme 1 which aims to increase forest cover and increase the livelihood returns of forestry to people, and advocates for improved land use planning. Climate change, environment and natural resources are key priority areas that cut across the six priority themes.

101. ERASP is fully aligned with the Agricultural Sector Wide Approach (ASWA) and the 2010 Agricultural Policy. The project will support the implementation of the National Water Resources Act passed in 2013, which establishes Catchment Management Committees for catchment conservation and management and the 1997 Forestry Act which established Village Natural Resource Management Committees (VNRMCS).

102. The project will directly contribute to seven of the 17 Sustainable Development Goals, namely SDG1: eradicating poverty, SDG2: ending hunger and malnutrition, achieving food security and promoting sustainable agriculture, SDG 5: achieving gender equality, SDG 6: ensuring availability and sustainable management of water and sanitation for all, SDG 13: taking urgent action to combat climate change and its impacts, SDG 15: protecting, restoring and promoting the sustainable use of terrestrial ecosystem, forests, combat desertification, reverse land degradation an halt biodiversity loss and SDG 16: promoting peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

C. DESCRIBE THE BUDGETED M &E PLAN:

103. Planning of project activities will be an on-going and participatory process coordinated by the PCO with support from the regional environmental experts with Annual Work Plan and Budget (AWPBs) forming the backbone of the planning. The AWPB, together with the Logical Framework's results-based indicators, will be the basis for monitoring project progress. Monitoring starts at the lowest level of the AWPB and the Logical Framework and will capture all four levels of results (activities, outputs, outcomes and impact at development objective and goal level) on a continuous basis. Findings from PM&EA will be enriched with feedback that comes from on-going generation of lessons learned, best practices, beneficiary and stakeholder stories also defined as learning and KM.

104. ERASP's and PRIDE's annual planning and implementation cycle will be aligned with GOM's main planning cycle. The fiscal year goes from July to June while budget preparation extends from January to May. Budget ceilings are issued between February and May before the budget goes to Parliament for approval in late June. The DOI and EAD provide backstopping support to districts in the initial stages. An annual water sector review report is prepared by MOAIWD within 60 days of the end of the fiscal year. This report is based on the planning for the previous year and explains, which targets have been met and those that have not been met and why. This report forms the basis for an annual joint water sector review in December that makes a performance assessment of the Ministries and the sector

during the previous year. The water sector review then feeds into the Malawi Growth and Development Strategy review mechanism.

105. The PM&EA officer supported by the regional environmental experts and district officers will ensure that stories are collected on a regular basis, providing factual information on changes and benefits achieved at local and catchment levels as well as documenting global environmental benefits and upscaling to other catchments. Such testimonies are especially relevant for documenting programme attribution to higher level impacts. Photo archives will be kept as part of structuring qualitative information. To ensure an effective flow of information, the PM&EA Officer will develop simple and user-friendly tools for data collection, data entry, data processing and analyses. Standard forms and formats will be made available to ensure consistency in the way data is recorded, which will also be supported by the application of the LDSF, DATAR, Ex-ACT and MPAT tools assessing local and global environmental and poverty reducing benefits. These tools are needed to systematically document progress at activities, outputs, outcomes, and impact level and will include:

- Standard formats for submission of financial returns on at least a monthly basis;
- A spreadsheet, database or accounting software to enter data and produce financial summary information (tables, graphs);
- Standard forms, based on the AWPB, to record progress and expenditure for each planned activity on a quarterly basis, and standard computer-based formats or templates to enter such data in a consistent manner, to facilitate consolidation;
- Standard forms to record results, in terms of activities completed and specific outputs produced, which will be the basis for physical progress summary information, and standard computer-based formats or templates to enter that data consistently; and
- Standard forms and computer-based formats or templates to enter data on ERASP resources, in particular registers of assets and contracts.

Reporting

106. Functional monitoring and MIS will provide the data needed to prepare progress reports. Results will be submitted in summary form in quarterly, half-yearly and annual reports to the Programme Sterring Commitee and IFAD. The AWPB is the starting point to monitor physical progress (actual implementation compared to planned activities) and financial progress (actual expenditure compared to budget).

107. **Progress reports**. Progress reports present a full picture of programme resources, annual and cumulative physical and financial achievements as compared to targets set in the AWPB, analysis of successful approaches and outputs, failures and constraints, and whether progress is being made towards achieving objectives. Progress related to outcomes and overall goal cannot be expected until a reasonable period after interventions and delivery of outputs has passed, however it is necessary to systematically collect data related to the outcomes and goal almost from the beginning. In the first Annual Progress Report, this may take the form of mentioning some of the key findings of baseline surveys that have been carried-out. From the second year onwards, the programme needs to start analysing whether outputs that are being produced are actually leading to outcomes and biophysical changes and benefits among the target group. The reports should highlight and justify the implementation strategy and indicate challenges encountered needed to be addressed as part of the adaptive management of the project. Specific reference should be made to recommendations by supervision missions.

108. **Project Implementation Review (PIR)**. In addition to IFAD progress report, the PCO will submit to IFAD a PIR on an annual basis. This report is a self-assessment of the GEF grant's implementation progress and likelihood of

achieving project objectives, which were set and endorsed by the GEF and approved by IFAD within the fiscal year[17]. The PIR will be submitted by IFAD to the GEF as part of the Annual Monitoring Review (AMR), the principle instrument for reporting to the GEF Secretariat on the IFAD GEF portfolio.

109. **Evaluation**. Evaluation by the PCO will ensure that activities being implemented are achieving the stipulated performance and resulting in the desired impact. A particular focus will be the assessment of the effectiveness of the programme on poverty alleviation and generation of sustainable global and local environmental benefits in terms of ecosystem services and its impact of each activity in terms of gender, and categories of households: male-headed, female-headed and youth.

110. **Baseline, mid-term and completion surveys**. These surveys are undertaken at start, middle and end of the programme implementation period and identify, verify and track outcomes and emerging impacts. A baseline survey will be undertaken to benchmark the existing situation in the catchments as part of the final design of each irrigation scheme and stream flows and sedimentation levels will be established to be able to track and monitor ERASP's effectiveness in terms of protecting the PRIDE investment and improving its life span and utility. The baseline survey will be done during the first year of implementation and will also provide information to complete the various tracking tools where values are not known at design and are to be determined at start-up. The baseline survey and follow-up surveys combine collection of basic demographic and socio-economic data with the application of MPAT, LDSF, DATAR and Ex-ACT, in order to understand and gauge the linkage between increased ecosystem services and resilience and impacts on food security and poverty reduction. The WEAI will also form part of the baseline and follow-up surveys in the catchment. The WEAI tracks changes in women's empowerment levels as a direct or indirect result of an intervention.

111. **The GEF-IAP Food Security Programme Tracking Tool (TT)** will likewise be completed at baseline, mid-term and completion allowing for the aggregation of indicators from the individual project level to the programme portfolio level and track overall portfolio performance in the GEF focal areas contributing with finance to the IAP Programme. The TT has been designed to monitoring several outcome indicators that contribute to the overall goals of the IAP Programme and demonstrate how each child country project contributes to the country and regional goals.

112. **Mid-Term Review (MTR)**. A MTR will be conducted halfway through implementation (towards end of year 3) to assess the performance and impact and its progress against the established objectives, the efficiency and effectiveness of ERASP/PRIDE management, and the validity of the ERASP/PRIDE designs. Recommendations for revisions to the activities and approach, the Logical framework targets, may be made if required.

113. **Programme Completion Report (PCR)**. At the end of the implementation period, a PCR will be compiled to provide an overview of the accomplishments of PRIDE. The PCR should inform the rationale for and orientation of a follow-on investment programme.

114. An **independent terminal evaluation (TE)** will also take place and look at impact and sustainability of results. It will be conducted by external consultants who will operate under the supervision of IFAD's Evaluation Office and IFAD staff. Technical staff working at the PCO, PM&EA Officer, and stakeholders will all be collaborating with the appointed persons for effective evaluation. The report will be submitted to IFAD and the GEF Evaluation Office no more than 12 months after project completion.

[17] A fiscal year for the GEF starts on July 1st, and ends on June 30th of the following year.

The table below provides a summary of project monitoring, evaluation, and reporting responsibilities.

M&E Activity	Responsible Parties	Timeline	Budget
Monitoring of project progress and performance	PCO (Project Manager and M&E Officer)	Continuous	
PIRs	PCO and IFAD	Annually	
Inception workshop	As above	During the first two months after the project is declared effective	Financed by PRIDE
Adjustment of biophysical and socio-economic baseline	PCO, IFAD, key Government partners and international institutions (ICRAF and Bioversity)	Baseline established in PY 1 (and in PY2 in the case of the LDSF for some catchments)	USD 125,000
Measurement of project outcome and impact indicators	As above	Mid and End of the project	USD 104,000
Measurement of project output indicators and progress and performance	PCO, District Officers, Local support institutions	Annually	USD 40,000
Perform and supervise data collection	As above	Continuous monitoring activity	
Six months and annual progress reports	Project Coordinator	Every 6 months and annually after project start up	USD 2,500
Participate in GEF IAP Regional implementation workshops	Project Coordinator and/or M&E Officer, Regional environmental experts	Every two years	~USD 40,000
Organize project supervision missions	PCO and IFAD	Every six months	Paid by GEF agency fee and the PRIDE project
Mid-term external evaluation	External consultants (oversight by IFAD)	Mid-term of project implementation	USD 30,000
Tracking Tool	PCO and international institutions (ICRAF and Bioversity International)	CEO Endorsement; at mid-term; and project completion	Part of baseline adjustment and outcome and impact indicator measurement
Final external evaluation	PCO External consultants (oversight by IFAD)	After project completion, but no more than 12 months later	USD 30,000
Project completion report	PCO External consultants (oversight by IFAD)	Before project closure	USD 10,000
Completion workshop	PCO and IFAD	At project completion	Financed by PRIDE

PART III: CERTIFICATION BY GEF PARTNER AGENCY(IES)

A. GEF Agency(ies) certification

This request has been prepared in accordance with GEF policies[18] and procedures and meets the GEF criteria for CEO endorsement under GEF-6.

Agency Coordinator, Agency Name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Margarita Astralaga, Director Environment and Climate Division Programme Management Department, IFAD	for	21/02/2017	Stephen Twomlow, Environment and Climate Division, IFAD	+39 06 5459 2681	s.twomlow@ifad.org

[18] GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency page in the project document where the framework could be found).

The Logical Framework can be found on pages XV-XVIII of the PDR.

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).

#	Issues raised by STAP/GEF Secretariat	Response and incorporation into PDR
1	Objective in Table B needs to be more clearly aligned with IAP objective	The original objective " Enhancing the provision of ecosystem services to improve productivity and resilience of agricultural systems" was reformulated as the following: "Enhance the provision of ecosystem services and improve the productivity and resilience of agricultural systems of vulnerable rural poor". This objective encompasses three sub-objectives of addressing land degradation, loss of agro-biodiversity and climate change adaptation and mitigation.
2	Indicating the 'alignment' of project outcomes with PFD outcomes seems confusing rather than helpful - the contribution of each child project towards program outcomes should be evident from Table B	Table B was revised accordingly, the contribution from each project outcome to the Hub Program is evident e.g. Agro-biodiversity and SLM practices up-scaled for catchment conservation and increased sustainability of farming system productivity and improved resilience to droughts and floods.
3	PMC more than 5 per cent of project components	As explained in the footnote 6, the PMC is slightly higher than 5%, it amounts to 6.6%, due to geographic coverage of the investments that requires higher supervision and management costs. The target area was selected based on the baseline irrigation potential of the sites.
4	Need to review agency fees in Table D - these now exceed 9 per cent	The Agency fee is 644,037 USD, which is exactly 9% of the total GEF project financing.
5	Baseline description needs to describe the baseline investments and associated sources and amounts of co-financing	The Baseline description and associated investments are clearly articulated in the GEF CEO Endorsement Document as outlined in Table C and the Project Document Report (Appendix 11).
6	Section 3 on project components needs to be restructured and clarified in line with IAP expectations	The project components were fully developed and articulated, they are now restructured and in line with IAP expectations (see para 17-40) .
7	Table B and narrative is not consistent with that of the overall program. The proposed component 1 and 2 should be consolidate in line with the IAP component 2, and the level of details on outcomes should be consolidated under "interventions for scaling-up." The child project must include creation or strengthening of an institutional framework to underpin the shift toward sustainability and resilience in the target area. This is a core of the IAP and therefore mandatory for all child projects	Consistency among Table B and the narrative is now ensured. All components are contributing to the Hub Program, ERASP aims to promote the resilience and sustainable management of ecosystems services, while safeguarding the long-term productive potential of critical food systems in response to changing human needs. It will strongly rely on multi-stakeholder institutional framework for integrated catchment area management to be established under Component 1.

#	Issues raised by Germany- March 2015	Response and incorporation into CEO Endorsement Document and PDR
1	Land tenure issues, support to ongoing land policy reform processes where possible, capacity development of local level institutions	Land tenure issues are addressed through the baseline project PRIDE. Land ownership is usually governed by customary tenure systems but there are a few households who rent land to increase crop production. Traditional authorities have a recognised leadership role in village level land and other natural resources management and are integrated into the institutional strengthening to be provided by ERASP. The village natural resource management committees will also be strengthened and have representation in the Catchment Management Committees. A process of community engagement and rights assessment has been detailed in PRIDE. The principles such as obtaining Free Prior and Informed Consent from affected communities that will be followed in PRIDE will apply to the ERASP.
2	Broad application and upscaling instead of piloting of particular technical issues adapted to physical and socio-economic conditions at target group level	ERASP focuses mainly on the upscaling of proven technologies such as reforestation and natural regeneration, improved soil and water management practices (contour bunds, conservation agriculture, integrated soil fertility management among others). The pilots are limited to alternative energy sources such as biogas and solar as these technologies are not wide spread for domestic cooking purposes and need further investment to develop locally adapted units.
3	Landscape approach to include rain fed agriculture and upland areas	ERASP focuses on a catchment approach in three districts that will further be scaled out into the five additional PRIDE districts. PRIDE interventions will initially focus on the village level management of micro-catchment of the irrigation schemes. The added value of the ERASP is to invest in the inter-village management of the wider sub-catchment area through the Catchment Management Committees and plans supported by component 1 and their implementation supported by component 2. The ERASP districts were selected based on the vulnerability to floods and droughts as well as the levels of land degradation in the sub-catchments.
4	Non-sustainable provision of wood energy and role of wood energy for food security	Fuel wood is an identified driver of deforestation and land degradation in the theory of change for ERASP. The project activities include dissemination of fuel efficient cook stoves and introduction of efficient charcoal kilns as well as establishment of community woodlots and rehabilitation of forest in particular in priority areas for conservation of water resources. The project will also support integrated agro-forestry and livestock systems to secure nutrient

5	Collaboration with BMZ programmes: - Green innovation centres - Food security and resilience	Synergies will be ensured with the approach being taken in the two BMZ programmes in Malawi, Food and Nutrition Security Programme and the Green Innovation centres for agriculture and food sector. The former targets Dedza and Salima, which are priority districts for climate change adaptation. The nutrition focus is being emphasised in both PRIDE/ERASP and the entry points of schools and support to district teams can be adopted in the ERASP/PRIDE districts. The value chain linkages under the Green Innovation Centres is also being adopted under PRIDE/ERASP. As such in value chains selected by the smallholders under PRIDE, duplication will be avoided and information on the centres provided to the farmers and the reach of the centres can be enhanced through the
6	Alignment and applicability of project monitoring system with national ones to establish / support long term monitoring of food security progress and resilience	One of the guiding principles approach in developing the ERASP M&A framework is to harmonise the it with other M&E systems and key indicators of government. The Information Management System will include Ministry of Agriculture Irrigation and Water Development and National M&E master plan indicators as well as indicators from the Environmental Affairs Department Monitoring System.
#	**Issues raised by the US March 2015**	**Response and incorporation into CEO Endorsement Document and PDR**
1	Intensified agriculture having potential negative impacts on forests and key biodiversity areas	ERASP includes measures for sustainable land management particularly in rain-fed areas around irrigation schemes that will be developed through the baseline PRIDE. A strong emphasis is also placed on catchment management to maintain the integrity of the watersheds and the provision of ecosystem services such as water for the irrigation schemes and productive landscapes. ERASP includes promotion of natural regeneration to reverse the trends of land degradation as a result of deforestation. Thus though productivity is expected to increase as a result of increased access to water and improved agricultural practices such as soil and water conservation measures, this will not be at the expense of forests and key biodiversity areas.
2	Inclusion of traditionally marginalized groups such as rural smallholder agriculturalists and shifting subsistence farmers who are most in need of extension services, training and improved livelihood strategies.	The smallholders are the main target groups in PRIDE and ERASP. Provisions have been made in ERASP to build the capacity for extension services to reach the rural areas with incentives to enhance their connectivity. Some facilitators will also fill the gap where there is a shortage of extension services with a long term plan for these to be service providers within the rural communities after the project ends.
	Issues raised by the US Feb 2017	Response and incorporation into CEO Endorsement Document and PDR

3	The project proposal does not clearly identify where the GEF investment will take place within the country. While the project proposal states that activities will begin within a small area, and then expand, the scope of these phases is not clearly stated anywhere in the document. Since this project will focus on land degradation, soil runoff, and deforestation, will the work occur primarily near Lake Malawi, or will the project activities take place throughout the country? In general, we would	The ERASP intervention areas are reflected in paragraphs 15, 18 and 81 (CEO Endorsement document). The districts are Karonga (northern Malawi), Machinga and Phalombe (southern Malawi). The estimated area where ERASP will directly intervene in these Districts is 13,000 ha located in five catchment areas covering 35, 000 ha (paragraph 15).The expansion will be from the initial three districts to cover all the eight districts (10 additional sub-catchments) covered by PRIDE, the baseline programme (paragraph 2 CEO Endorsement). The phasing of the activities will depend on the rolling out and development of the PRIDE irrigation sites. Paragraph 62 articulates the envisaged scaling-up pathway for the SLM activities. A map of the project area is included as Annex E). None of the selected sites are directly in the vicinity of Lake Malawi.
4	We would like to note the work of the International Maize and Wheat Improvement Center (Centro Internacional de Mejoramiento de Maíz y Trigo, or, CIMMYT) that has helped farmers adopt drought-tolerant maize in Malawi. We encourage the project team to coordinate with such organizations and/or efforts. It would be helpful for the project document to describe what drove the past reduction in indigenous crop variety cultivation and how the project will address those factors (section 6). We would like to know if the project will encourage farmers to replace hybrid maize that withstands dry spells with indigenous crop varieties. Will this shift have a net positive effect on crop production?	The past reduction in indigenous crop varieties (land races) cultivation was driven by the characteristics such as low yields, long maturity period and availability (Paragraph 6). Output 2.8 articulates how the ERASP will address the low yield and availability of the varieties. The project will not encourage farmers to completely replace the hybrid maize varieties as farmers have noted the advantages such as drought tolerance, higher yields and availability. However, smallholders clearly recognise the need to diversity their crop varieties for resilience and improved access to nutritious food and expressed the values attached to land races. Therefore ERASP encourage a more balanced approach in a more crop diversified farming system in general and in the use of landraces and hybrid varieties. It will provide the farmers with options to maintain and adopt new and participatory selected and improved landraces in collaboration with the Malawi Plant Genetic Resources Centre. Among the advantages will be fewer input requirements and local availability of seeds, pest and diseases resistance, fit to market preferences and higher prices, taste and family access to nutritious food, and plays an important role in the gender equity strategy as reflected in paragraphs 6 and 70 respectively. The more balanced approach in the use of improved land races is expected to have a net positive effect on crop production and resilience of the smallholders.

5	When refining the project interventions, we believe it is important that the project implementers give greater consideration to how crop growing conditions vary throughout the country. For example, the United States Agency for International Development's Feed the Future (FTF) initiative developed a new strategy to address districts in the Southern region of Malawi, as certain crops do not survive in those areas relative to other parts of FTF services zones. We also recommend that the project implementers take into account district and provincial differences in climate conditions, and adjust their strategies depending on the location. For example, the impacts of El Niño/La Niña are felt throughout the country, but the Southern Region is disproportionately affected by these climate events relative to the rest of Malawi. As a result, farmers in this region require specialized knowledge and tools to protect their crops.	This comment is well noted and the suggestions will be communicated to the project implementation teams. During the design of ERASP the team held discussion with the USAID team to exchange experiences and identify synergies. This type of learning and sharing will continue during implementation particularly scaling up proven technologies and practices as well as making use of and building on existing knowledge from other development partners. The differences in the climatic and agro-ecological conditions will be taken into account particularly through the participatory approach that the ERASP will follow including through the strengthening of the Village Natural resources Management Committees and the development of catchment area management plans, which will identify climate vulnerabilities and risks for the concrete catchment area and its cropping systems as part of the initial participatory diagnostic. Karonga is located in the northern region while Machinga and Phalombe are located in the southern regions providing opportunities for the ERASP to compare approaches and results in the different regions. The use of local level systems and district officers will ensure that targeted tools and knowledge is available for the farmers (paragraphs 64-66).
6	Section 5 states that the mitigation benefits amount to 6.4 tons CO2-eq/ha/yr, but section 59 states that the Global Environmental Benefits are 88,245 CO2-eq/yr and 35,000 ha under integrated land management, which amounts to 2.5 tons CO2-eq/ha/yr. The project document should include an explanation of this difference for clarity and accounting accuracy.	The 6.4 tons CO2 eq/ha/yr is calculated based on the direct area of intervention for ERASP, 13,000 ha. while the 88,245 CO2 eq/yr provides the total annual benefits and therefore is also related directly to the 13,000ha. the 35,000 ha is the estimated area for the 5 sub-catchments where ERASP will intervene and as such includes also ha of indirect impacts.

7	We support the plans to use existing information on the barriers to cookstove adoption, as it will maximize the impact of this measure to reduce fuel wood use (section 29). However, we believe this component of the project should be emphasized further. We recommend the project implementers give additional consideration to the barriers to biogas technology adoption in Malawi, especially since it has been available in Malawi for several years but has failed to develop a significant market share (section 33, output 2.6).	This is a very valid point and will be taken into account during implementation. During project design the barriers to biogas technology adoption were briefly explored. This informed the inclusion of the challenge fund for alternative energy targeting solar and biogas. The criteria for selecting the recipients of the funds, which will be developed at implementation can include the assessment of barriers to adoption, proposed measures to overcome them and potential for wider adoption by communities.
8	Section 72 lists risks of "Discontinuation of practices once the project ends" and "Weak sustainability because the project approach is not led by nor nested in Malawian institutional structures." To minimize this risk, it is critical that the project implementers work with the District Council governments and extension services. We strongly recommend that this project emphasize the training of women so that they are involved with and benefit from this project as much as men.	District level engagement and extension services are critical to the successful implementation and sustainability of the ERASP (paragraphs 48-51 and 66). Paragraph 69 provides the gender disaggregated targets for the ERASP. These targets have been included to ensure women benefit as much as men from the ERASP in different training activities and also as overall project beneficiaries. Gender empowerment is a critical issue and a commitment that IFAD has made at a corporate level and therefore working with the team in Malawi and supporting the Government in achieving their targets in this regard will be ensured during implementation of the ERASP.
9	Finally, we would like to request additional information on the project's scale-up strategy and the plans for project sustainability beyond the end date. We look forward to receiving answers to our questions and welcome any comments or follow-up questions the project team may have.	The scaling up pathways for the ERASP include the informed decisions at sub-catchment and catchment management committees; generating evidence on improvements in the state of the environment and reduction in multi-dimensional poverty and months with food insecurity for the selected catchments, and contribute to establish incentives for integrated approaches at national level; knowledge management strategy, which represents an advocacy platform that draws upon and creates visibility for the anticipated success stories from the country projects at the level of sub-regional and regional bodies within the context of food security debates and policy making; the use of recognised local level structures (Traditional Authorities and the VNRM groups which will be strengthened and formalised where required) in the implementation of village-based NRM plans to boost their enforcement capacity will reinforce the benefits streams (paragraphs 105,106, 151,153 ERASP PDR). The actions being taken to ensure sustainability of the ERASP interventions are articulated in paragraphs 48-53 in the CEO Endorsement document.

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS[19]

A. Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF: US$ 183,486				
Project Preparation Activities Implemented	**GEF/LDCF/SCCF Amount ($)**			
	Budgeted Amount	**Amount Spent to Date**	**Amount Committed**	**Amount Uncommitted**
Economist, Team Leader	40 000.00	35 008.68	-	4 991.32
Economist	22 000.00	17 514.57	-	4 485.43
Water Resources Engineer	30 000.00	21 318.50	6 079.52	2 601.98
Agronomist	22 000.00	20 811.87	-	1 188.13
M&E Expert	29 000.00	26 749.81	-	2 250.20
Procurement Specialist	3 500.00	1 663.20	-	1 836.80
Communication & KM	6 000.00	-	6 000.00	-
Workshop Expenses	30 986.00	27 915.54	-	3 070.46
Total	**183 486.00**	**150 982.17**	**12 079.52**	**20 424.31**

[19] If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue to 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. Agencies should also report closing of PPG to Trustee in its Quarterly Report.

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

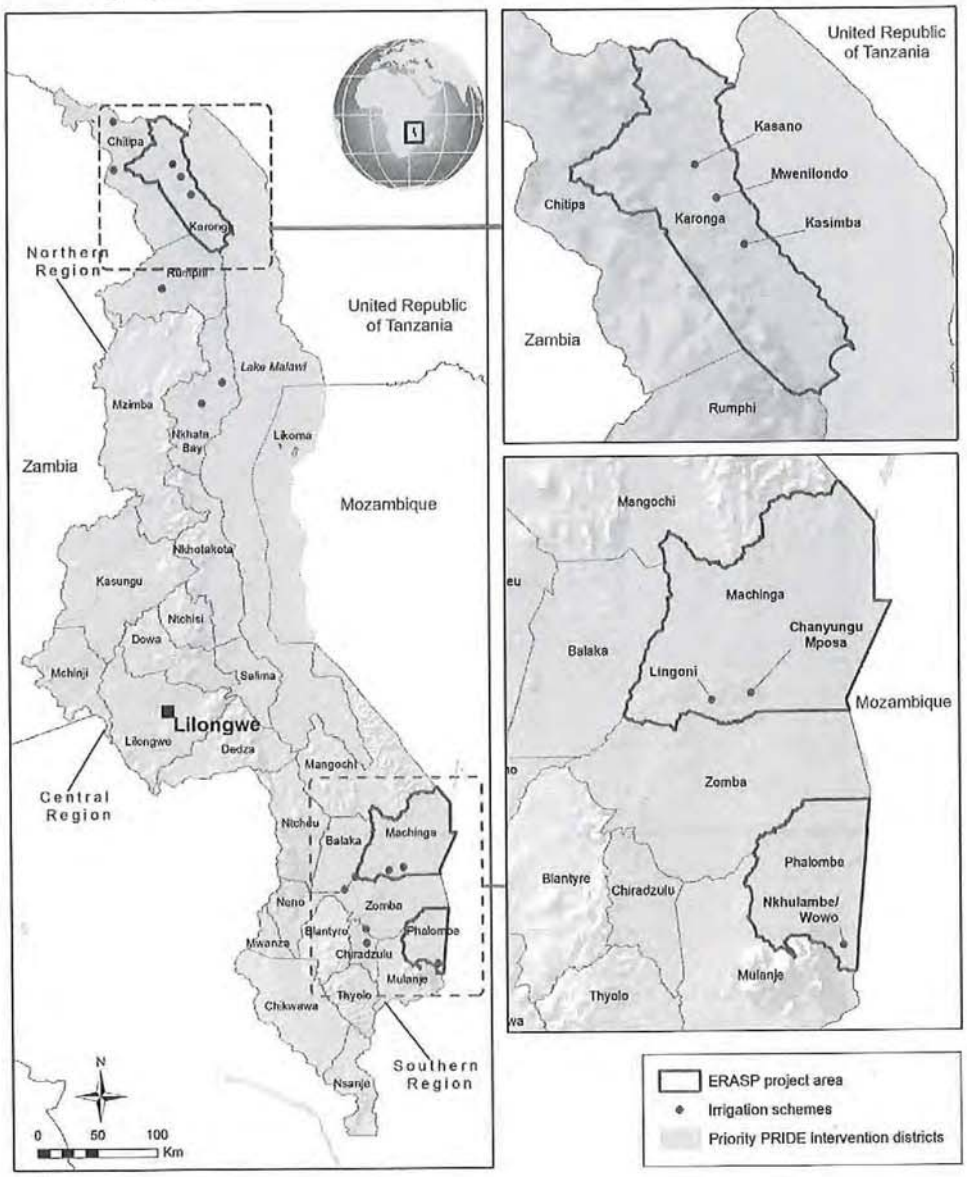
Provide a calendar of expected reflows to the GEF/LDCF/SCCF Trust Funds or to your Agency (and/or revolving fund that will be set up)

Annex E: Map of ERASP intervention sites

Malawi

Enhancing the Resilience of Agro-ecological Systems Project - ERASP (GEF-IAP)

Design report



The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.

IFAD *Map compiled by IFAD* | 16-03-2016