GEF-8 PROJECT IDENTIFICATION FORM (PIF)

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General Project Information

Project Title	
Championing Local Adaptation for Productive Ecosystems and Enhanced Resilience (CLAP for Resilience)	
Region	GEF Project ID
Malawi	11436
Country(ies)	Type of Project
Malawi	FSP
GEF Agency(ies):	GEF Agency ID
UNDP	9673
Executing Partner	Executing Partner Type
Ministry of Natural resources and Climate Change	Government
GEF Focal Area (s)	Submission Date
Climate Change	10/18/2023
Project Sector (CCM Only)	
Climate Change Adaptation Sector	
Taxonomy	
Gender Equality, Gender Mainstreaming, Beneficiaries, Gender-sensitive indicators, Women groups, Sex-disaggregated indicators, Gender results areas, Capacity Development, Awareness Raising, Access and control over natural resources, Participation and leadership, Access to benefits and services, Capacity, Knowledge and Research, Enabling Activities, Knowledge Generation, Learning, Indicators to measure change, Adaptive management, Focal Areas, Climate Change, Climate Change Adaptation, Ecosystem-based Adaptation, Climate information, Innovation, Community-based adaptation, Livelihoods, Climate resilience, Least Developed Countries, Private sector, Influencing models, Demonstrate innovative approache, Strengthen institutional capacity and decision-making, Deploy innovative financial instruments, Stakeholders, Civil Society, Community Based Organization, Type of Engagement, Consultation, Participation, Information Dissemination, Private Sector, Financial intermediaries and market facilitators, Local Communities	
Type of Trust Fund	Project Duration (Months)
LDCF	72
GEF Project Grant: (a)	GEF Project Non-Grant: (b)
8,932,420.00	0.00
Agency Fee(s) Grant: (c)	Agency Fee(s) Non-Grant (d)
848,580.00	0.00
Total GEF Financing: (a+b+c+d)	Total Co-financing
9,781,000.00	55,400,000.00
PPG Amount: (e)	PPG Agency Fee(s): (f)

200,000.00	19,000.00
PPG total amount: (e+f)	Total GEF Resources: (a+b+c+d+e+f)
219,000.00	10,000,000.00
Project Tags	
CBIT: No NGI: No SGP: No Innovation: No	

Project Summary

Provide a brief summary description of the project, including: (i) what is the problem and issues to be addressed? (ii) what are the project objectives, and if the project is intended to be transformative, how will this be achieved? iii), how will this be achieved (approach to deliver on objectives), and (iv) what are the GEBs and/or adaptation benefits, and other key expected results. The purpose of the summary is to provide a short, coherent summary for readers. The explanation and justification of the project should be in section B "project description".(max. 250 words, approximately 1/2 page)

General Note to Reviewer: All revisions made to the PIF are highlighted in Yellow, while existing text that addresses queries raised and referred to in the responses is highlighted in blue to guide the reviewer on where the information is located.

The Bua River landscape in the Central Region of Malawi is inhabited by communities who are among the most vulnerable to climate change impacts[1][1]. The local economy and livelihoods rely on climate sensitive natural resources for food, fodder and fuel, including rain-fed agriculture, forests, wetlands and rivers. High population growth and high population density, low levels of literacy, lack of adequate infrastructure and an under-developed private sector limit the options for livelihood diversification needed to adapt to climate change. Climate change has led to increases in temperature and frequency of dry spells and drought, increased rainfall variability including reduction of rainy days coupled with an increased frequency of heavy storms. This has reduced agricultural production, increased poverty and food-insecurity. Communities are increasingly reliant on natural habitats for livelihood. Charcoal production, sales of wood are an important source of income and over-fishing is common, leading to accelerated deforestation, environmental degradation and deterioration of the unique ecosystems. The goods and services from these ecosystems on which these communities depend during times of stress have thereby been affected, creating a downward spiral which is exacerbated by climate change.

This project will increase adaptive capacities and reduce vulnerabilities of communities to climate change impacts through integrated watershed management that combines sustainable agriculture and other land use practices and brings in the private sector investments across the value chain to sustain climate resilient livelihoods while reversing environmental degradation and restoring ecosystem services that are key for adapting to climate change**.** Building on earlier investments, the project strategy will combine nature- and ecosystem-based approaches that build on traditional and indigenous knowledge to enhance long-term resilience to climate shocks and variability. Agro-ecological interventions and value chain development will enhance the adaptive capacities of communities within the Bua watershed. The project will facilitate investments from the private sector, increase access to finance and support climate-resilient value chain development thereby broadening the economic base of the communities and reducing maladaptive coping strategies.

Expected adaptation benefits from the project are: i) reduced vulnerability and increased resilience of agricultural livelihoods through farmer field school training, enhanced use of climate information by end users

leading to adoption of climate resilient agricultural practices including use of drought resilient varieties; ii) greater availability of biomass for fuel and fodder during drought, reduced flooding, reduced erosion and land degradation, sustained dry-season stream flows and reduced sedimentation of streams and rivers through integrated catchment restoration, reforestation and management of communal grazing lands; iii) increased awareness of climate change impacts among communities and increased technical capacities among line and extension departments and community based organisations leading to better management and governance of natural resources including forests, wetland and riparian zones; and iv) climate-resilient business and agricultural value chain development through training , mentorship and improved access to microfinance, insurance and social protection.

Innovative technologies such as remote sensing, geographical information systems and use of integrated climate information services will support climate-informed integrated planning, and policy coherence in management and monitoring of the ecosystem. Linkages for sustained private sector financing of local conservation and environmental protection efforts will be explored. Local institutions and government agencies will be strengthened to improve management and conservation of natural systems and their sustainable use. Extension services and line departments will be supported in the delivery of appropriate technologies to the target communities in climate resilient agriculture, fisheries and nature-based solutions for reforestation and habitat restoration. These will be combined with effective use of climate information and early warning systems by communities at risk.

Project activities are aligned with the GEF8 adaptation priorities. It contributes to strengthening innovation and private sector engagement (priority area 2) through i) technology transfer, innovation and deployment; ii) creating enabling conditions for private sector action; and iii) incubating and accelerating micro, small, and medium enterprises. Its activities will also contribute towards fostering partnership for inclusion and whole-of-society approach, wherein the project will i) focus on institutional strengthening and capacity building efforts at all levels; and ii) build partnerships with local organizations and systems to address social equity.

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[1] World Bank Group, 'Malawi Country Climate and Development Report'.

Indicative Project Overview

Project Objective

To increase adaptive capacities and reduce vulnerabilities of communities to climate change impacts through integrated watershed-based approaches that partner with the private sector to rejuvenate agriculture and enhance investments in climate resilient livelihoods.

Project Components

Component 1: Strengthening capacities to support gender responsive grassroots interventions for climate change adaptation and governance of resources for long term resilience

Component Type	Trust Fund
Technical Assistance	LDCF
GEF Project Financing ($)	Co-financing ($)
600,000.00	3,721,276.00
Outcome:	

Strengthened technical capacities, policy implementation and governance in district and community based organizations for gender responsive climate change adaptation and resilience.

Output:

1.1 Grassroots institutions strengthened for participatory and gender responsive implementation of policies and actions for climate change adaptation and management of natural resources

1.2. Grassroots institutions trained and equipped with skills to restore, monitor, manage and sustainably use climate sensitive natural resources and habitats in a gender equitable manner

1.3. Training provided to Government line departments working with communities to identify, evaluate and introduce climate resilient, financially viable, gender responsive and sustainable livelihoods in their work.

Component 2: Supporting adoption of climate smart, nature based solutions for climate resilient agriculture and ecosystems

Component Type	Trust Fund
Investment	LDCF
GEF Project Financing ($)	Co-financing ($)
4,423,675.00	27,436,193.00

Outcome:

Restored and climate resilient natural and production landscapes in the upper catchment of the Bua watershed.

Output:

2.1. Protection and restoration work in the catchments and tributaries of Bua River and adjacent riparian areas and wetlands implemented for enhanced ecosystem services.

2.2. Improved agricultural practices, including soil and water conservation and agroforestry in production landscapes.

Component 3: Strengthening private sector engagement for scaling up viable climate resilient value chains and livelihoods

Component Type	Trust Fund
Investment	LDCF
GEF Project Financing ($)	Co-financing ($)
2,722,260.00	16,883,801.00

Outcome:

Enhanced public and private sector investment to strengthen market linkages and value chains

Output:

3.1. Establishment of a private sector engagement facility with new funding windows opened under the UNDP Growth Accelerator Platform.

3.2. Partnerships established between private sector (MSMEs, cooperatives) partners, communities and other stakeholders, with specific attention to women owned and operated businesses.

3.3. Partnerships with larger commercial agriculture, agro-processing, and ecotourism corporations for climate resilient livelihoods

3.4. Technical assistance provided to the Malawi National Climate Change Fund (NCCF) to integrate and implement the private sector engagement facility.

Component 4: Participatory planning and knowledge management for sustainability

Component Type	Trust Fund
Technical Assistance	LDCF
GEF Project Financing ($)	Co-financing ($)
505,922.00	3,137,792.00

Outcome:

Effective and gender inclusive planning, knowledge sharing and adaptive learning for sustained resilience to climate change.

Output:

4.1. Comprehensive muti-disciplinary baselines established in sub-watersheds including participatory, gender inclusive work-plans with detailed technical designs

4.2. Platforms and multi-channel communications for knowledge sharing, , uptake of lessons, awareness and behavioural change established involving both men and women

4.3. Plans developed for long term, self-reliant, technical, institutional and financial sustainability

M&E

Component Type	Trust Fund
Technical Assistance	LDCF
GEF Project Financing ($)	Co-financing ($)
255,210.00	1,582,845.00

Outcome:

Output:

Component Balances

Project Components	GEF Project Financing ($)	Co-financing ($)
Component 1: Strengthening capacities to support gender responsive grassroots interventions for climate change adaptation and governance of resources for long term resilience	600,000.00	3,721,276.00

Component 2: Supporting adoption of climate smart, nature based solutions for climate resilient agriculture and ecosystems	4,423,675.00	27,436,193.00
Component 3: Strengthening private sector engagement for scaling up viable climate resilient value chains and livelihoods	2,722,260.00	16,883,801.00
Component 4: Participatory planning and knowledge management for sustainability	505,922.00	3,137,792.00
M&E	255,210.00	1,582,845.00
Subtotal	**8,507,067.00**	**52,761,907.00**
Project Management Cost	425,353.00	2,638,093.00
Total Project Cost ($)	**8,932,420.00**	**55,400,000.00**

Please provide justification

A. PROJECT RATIONALE

Briefly describe the current situation: the global environmental problems and/or climate vulnerabilities that the project will address, the key elements of the system, and underlying drivers of environmental change in the project context, such as population growth, economic development, climate change, sociocultural and political factors, including conflicts, or technological changes. Describe the objective of the project, and the justification for it. (Approximately 3-5 pages) see guidance here

Country Context

Climate change-related impacts such as droughts, floods and tropical cyclones undermine development and reduce the availability of natural resources. Several developing countries are disproportionally affected by the resulting increase in food and nutrition insecurity.

Private sector investments into climate change adaptation and resilience are currently quite limited – both globally and in Malawi – and effective implementation of climate change adaptation and resilient livelihood enhancement of affected communities requires de-risking private sector investments together with public investments. Climate change further accentuates existing risks, particularly for vulnerable groups such as the rural and urban poor, small-scale farmers and internally displaced persons. Women and girls are disproportionately affected due to unequal access to productive assets, such as land and water, and under-representation in decision-making.

The Southern Africa region is among the most vulnerable regions in the world to climate change impacts and climate-related hazards [1][2]. The number of droughts in the region has doubled in the past 20 years, while the number of floods has more than tripled[2][3]. Climate models project the region to experience increased temperature, changes in rainfall patterns, an increase in the intensity of cyclones and increased frequency and intensity of El Niño Southern Oscillation (ENSO) episodes. The region has faced increased destructiveness and energy associated with tropical cyclones over the Indian Ocean in the past 30 years[3][4], and a warming trend, with temperatures increasing at 0.4°C per decade since 1961[4][5]. Climate-related and extreme weather events in this region are increasingly affecting the lives and livelihoods of the most vulnerable by impacting human health, economic growth, education, water supplies, food security and critical infrastructure.

Malawi, located in south-eastern Africa, faces increasing challenges owing to climate shocks, depleting natural resources, increased severity and frequency of weather-related hazards combined with a lack of preparedness among communities with limited capacity to cope and adapt. Impacts of climate change cost Malawi at least 5% of its gross domestic product (GDP) each year.[5][6] Productivity of several sectors of the economy directly or indirectly dependent on the agricultural sector have been affected. High levels of poverty, high rates of population growth, poor infrastructure and lack of appropriate skills and technology uptake further reduce the capacity of the population and environment to withstand and recover from increasingly frequent climate shocks.

A landlocked country Malawi is among the most densely populated countries in Africa with a population of over 17.5 million and annual growth rate of 2.9% in 2018.[6][7] A predominantly rural (84.4%)[7][8] and youthful population highlights the need for sustained growth and creation of adequate employment opportunities in a diversified economy. Despite increasing urbanisation and industrial development, agriculture continues to be the main drivers of the economy. Malawi's human development index is low at 0.512 and it is ranked 169 among 191 countries on development.[8][9] The country's annual GDP growth (post-pandemic recovery) is slow, at 0.9% for fiscal year 2022, with nearly 71% of the country's population continuing to live in poverty[9][10]. Given the low tax base and susceptibility to domestic supply and international demand shocks, foreign aid has constituted a considerable portion of government expenditure. Renewable natural resources, including the agricultural sector, support approximately 80% of livelihoods and contribute 30% to GDP and 80% of export revenues of Malawi.[10][11] Thus, the Malawian economy is highly vulnerable to external shocks, particularly those from climate change.[11][12]

The National Forest Landscape Restoration Strategy (2017) reported an average annual deforestation rate of 0.5% from 2000 to 2015. In 2021, 14.7kha of natural forest was lost, equivalent to 5.21Mt of CO_2 emissions.[12][13] With 98.8% of households using solid fuels (firewood, charcoal, and crop residue) as the main fuel for cooking,[13][14] the overwhelming dependence of the population on biomass for their energy needs is a major driver of forest degradation. The project is aligned with the mandate of the National Adaptation Planning Framework[14][15]. It will contribute to: i) improving community resilience to climate change through enhanced agricultural production, infrastructure development and disaster risk management; ii) enhancing sustainable utilization of natural resources especially forest, water, fisheries and wildlife resources; iii) improving environmental management especially soil and land management; and iv) enhancing conservation and/ or restoration of biodiversity and ecosystems.

Thus, issues of resilience and adaptive capacity of communities to climate shocks, food security and biodiversity will increasingly play a key role in the sustainable growth of the economy and prosperity of the population of Malawi. Further details on the economy and demographics of Malawi in relation to climate change impacts are presented in Appendix 1.

Baseline/Observed and Projected Climate Change in Malawi

Malawi is among the most climate vulnerable countries in the world. In the past few decades, Malawi has experienced several climate-induced disasters with increasing frequency and intensity leading to loss of lives and livelihood and affecting the economy. It is estimated that climate change can reduce Malawi's GDP by 3% to 9% by 2030, 6% to 20% per cent by 2040 and 8% to 16% by 2050 if the country maintains its current

development trajectory. Extreme weather events can raise the country's poverty rate by 8% and drive additional four million people into poverty by 2040.[15][16]

The ND-GAIN index ranks Malawi at 163[16][17] with a high level of vulnerability (0.548) but low level of readiness (0.288), placing it in the top left quadrant of the ND-GAIN Matrix. Countries in this quadrant have a need for investment and innovation to improve readiness and a great urgency for adaptation action. Malawi has a decreasing score in some of the critical vulnerability indicators:

- Vulnerability (0.548): The country's exposure, sensitivity and ability to adapt to the negative impact of climate change.
- Ecosystem services (0.515): Vulnerability of natural capital, the ecological resources that humans rely upon to support lives and livelihoods.
- Food (0.614): Vulnerability to climate change, in terms of food production, food demand, nutrition and rural population. Malawi has the lowest score in terms of agricultural capacity (0.994)
- Health (0.718): Vulnerability of public health, in terms of the spread of communicable diseases and provision of health services.

Malawi has experienced i) reduced average annual precipitation; ii) increased average annual temperatures of 0.9°C since 1960; iii) delays in the onset of the rainfall season; iv) a decrease in the length of the rainfall season, and; v) a longer dry season. The number of days exceeding 35°C is likely to increase across all time frames and scenarios (high confidence), with a median simulated increase of 64 days by the end of the century under RCP 8.5. Annual rainfall is likely to decrease under both RCP4.5 and RCP8.5, with a steady increase in consecutive dry days modelled until 2081–2100 (low confidence). By 2041-2060 median decreases in rainfall are consistently negative during winter and spring (May to October). There has been an increase in both annual as well as monthly temperatures (mean, min and max) with a decadal increasing trend of 0.16° C over the past two decades and as high as 0.78° C in November. There has also been an increasing trend in precipitation, of 50.58 mm per decade (72.9% significance) [17][18].

Climate related disasters have severely affected livelihoods, particularly of rural communities, leading to challenges in terms of food and water security, water quality and energy resources. From 1979 to 2008, 2,596 people perished due to natural disasters, and nearly another 21.7 million people were adversely affected. Floods and droughts are the leading cause of chronic food security, which is endemic in many parts of the country.[18][19]

A series of cyclones have caused extensive damage in Malawi in the recent past.[19][20] Heavy rain in early 2019 led to severe floods which were compounded when Cyclone Idai hit later in March; directly affecting 975,000 people and leaving over 125,000 homeless,[20][21] 60 people dead and over 650 injured[21][22]. Cyclone

Freddy that devastated Malawi in early March 2023, brought an unprecedented amount of rainfall which was accompanied by strong winds. This resulted in heavy flash flooding and landslides over the southern and eastern regions. Widespread damage included critical disruption of transport networks, energy provision, health care systems, and production systems. The agriculture sector was affected the most (a total of 2,514,913 people) with fields and natural assets being damaged resulting in high levels of food insecurity and inability to sustain livelihoods. A total of 681 lives were lost with 659,278 people displaced and 882,989 households with houses partially or completely damaged.[22][23] According to FEWS NET,[23][24] in the aftermath of cyclone Freddy Tropical Cyclone Freddy, Crisis (IPC Phase 3) is likely to persist in southern Malawi. In recent decades, the impacts of climate change have been intensified by the El Niño Southern Oscillation Cycle (ENSO).

Communities in Malawi are facing increased vulnerability to climate-related risks.[24][25] These risks are projected to increase with increases in extreme weather and climate events, such as the recently witnessed cyclone and consequent floods, mudflows and landslides.[25][26] Increased temperatures and variable rainfall patterns are expected to increase incidents, intensities and duration of droughts. Climate-related risks are likely to affect development across all sectors, but particularly health, food and water security and will disproportionately impact the most vulnerable communities who have the greatest reliance on climate sensitive agriculture and natural resources.[26][27] Urban areas of Malawi are also likely to face increased impacts of climate change affecting public infrastructure and private property. Informal settlements, where most of the population is located, are particularly at risk. This is jeopardizing Malawi's urban growth center-focused growth strategy[27][28].

Farmers are confronted with delayed onset and shortening of the rainy season (November to December), which has truncated the growing season. The reduction of dry season stream/river flows and drying of wells has contributed to the decrease in water available for irrigation and domestic use. Temperatures and number of days of hot winds in the rainy season have increased and communities reported an increased frequency of dry spells and moderate increases in drought.[28][29]

The latest IPCC report [29][30] projects an increase in these trends, more specifically, increases in i) heavy precipitation and pluvial flooding; ii) aridity, agricultural and ecological droughts; iii) meteorological droughts from 1.5 global warming levels with higher confidence at higher global warming levels; iv) fire weather conditions; mean wind speed; average tropical cyclone wind speeds and associated heavy precipitation and of the proportion of category 4-5 tropical cyclones. A summary of the near-, medium- and long-term projections for the Eastern Southern Africa region from the IPCC interactive atlas [30][31] is presented in the table below.

Scenario	Near Term (2021-2040)	Medium Term (2041-2060)	Long Term (2081-2100)
Mean temperature, change in degree C			
SSP2-4.5	1.6	2.1	3
SSP5-8.5	1.7	2.6	4.9
Total precipitation, change in percentage.			
SSP2-4.5	-2.3	-4.3	-3.6
SSP5-8.5	-3.3	-3.3	-3.8

Recognising the vulnerability of its population and ecosystems to the impacts of climate change, the GoM developed the National Climate Change Management Policy (NCCMP) in 2016[31][32] which acknowledges the importance of a healthy ecosystem to build a robust economy and thereby resilient communities. Furthermore, Malawi's Vision 2063[32][33] which aims to "transform Malawi into a wealthy and self-reliant industrialized 'upper middle-income country' by the year 2063", is committed to the overall goals of environmental sustainability, inclusive growth and long-term development.

Past investments by LDCF and other climate funds

There have been significant investments to mainstream climate change in policies, strengthening and up-scaling of climate information and early warnings and support to communities to build resilience of their livelihoods and ecosystems to climate change. A summary of how the components and outputs of the CLAP project builds on these projects is provided on pg. 13 and pg.27, with additional details of projects provided in Appendix 3 on pg. 47 (please see PIF document uploaded to Roadmap section of the GEF portal).

To ensure transformational impact and value addition beyond these earlier investments, the CLAP project will strengthen implementation of policies at the district and village committee level, building on programmes of the government which have mainstreamed climate change into existing policies and programmes of the government[1]. It will scale up the participatory use of climate information services[2] into project areas, ensuring that the approach is mainstreamed into extension services. The project will also replicate scale up successes from projects supporting climate resilient livelihoods and livelihood diversification by engaging the private sector for financial viability and value addition in agriculture and fisheries, including aquaculture[3]. The project will expand on-ground interventions by extending the area under restoration with adjacent and overlapping projects and consequently increasing the impact of restoration[4] , and finally, it will leverage experiences and lessons from other initiatives seeking to build climate resilience of communities depending on natural resources by replicating community based natural resource management and nature-based restoration approaches[5].

[1] Building on the Climate Resilience Initiative in Malawi, The Implementing Adaptation Planning Programme, the National Climate Resilience Programme and the Climate Smart Enhanced Public Works programme.

[2] The PICSA approach was introduced by the GCF funded M-CLIMES project and has been shown to be a highly effective method for farmers to adapt to climate variability.

[3] GEF LDCF supported TRANSFORM project and the Malawi-climate resilient and sustainable capture fisheries, aquaculture development and watershed management project,

[4] The GEF supported project on Effective Management of Mchinji Ecosystems for Restoration of upper Bua River Catchment Project will be implemented in protected areas adjacent to the CLAP project and the catchments under the GCF supported regional initiative: Nature based Solutions for Agropastoral Resilience to Climate Change in Catchments, may also overlap with the CLAP project.

[5] GEF supported projects: transforming landscapes and livelihoods: A cross-sector approach to accelerate restoration of Malawi's Miombo and Mopane woodlands for sustainable forest and biodiversity management and Enhancing Sustainability of Protected Area Systems and Stabilizing Agro-production in Adjoining Areas through Improved IAS Management.

Site Context

The Bua River ecosystem, comprising a catchment of 10,636 km^2, spans six districts in the Central Region of Malawi. Originating on the western border of Malawi in Mchinji district, the river flows north-easterly and empties into Lake Malawi. It has five major tributaries and numerous minor ones.[1] The landscape comprising natural, semi-natural and degraded ecosystems consists of forest, wetland, river, and agricultural land resources that are under threat owing to over-extraction. The region includes the critically endangered Dry Miombo woodlands, and endangered wetland systems.[2]

Built-up areas comprise around 1% of the Bua River ecosystem, 71% of the catchment is classified under agriculture[3]. The primary land use is thus agriculture with a high dependence on rain and along with livestock and fisheries, forms the economic mainstay of the population. Thus, increased variation in rainfall pattern and distribution results in reduced production and productivity leading to increased food insecurity and vulnerability of the population. Between 86%-97% of the population is rural, between 43%–46% is below 14 years in age and about 40% is economically active falling in the 20–64 age group[4].

Economic activities like beekeeping and fisheries exist, but lack a formalized structure for access to markets and finance. Markets structures in the area are weak due to limited formalized interventions to build community capacities, lack of mobilization of smallholder communities into cooperatives, high transaction costs, poor road transport, and limited access to finance. In addition, the communities also lack access to agricultural/disaster risk insurance, and social protection measures.

The prevalent demographic distribution and agriculture-based economy presents both challenges and opportunities in terms of climate vulnerabilities experienced by the population and potential strategies in improving resilience through promoting nature-based solutions.

The upper catchment of the Bua river – where this project is proposed, has faced a number of climate change related challenges. These are reported both in literature and were corroborated during consultations with stakeholders, including communities and their representatives. Principal among these are changes in rainfall patterns. Increased variability in the amount of rain and number of rainy days with a decrease in rainfall and delayed onset of the rainy season in the upper catchment[35]. An increased frequency of thunderstorms has resulted in floods during the wet season, and dry spells and droughts are also more frequent[35].

This has contributed to the decline in productivity and income from agriculture, livestock, fisheries and from timber and non-timber forest produce. This is contributing to increasing poverty levels and the loss of

livelihoods and income, particularly among rural communities which is driving maladaptive coping practices such as sales of charcoal and timber and conversion of natural habitats to agriculture.

A vicious cycle of further environmental degradation leading to increased vulnerability to the impacts of climate change and declining productivity has resulted, trapping communities into a spiral of poverty and increased vulnerability to climate change.

Downscaled data from the CMIP-6 predicts increasing trends in temperatures and a decrease in rainfall in the upper catchment of Bua (maps in Appendix 4). This, coupled with the increased variability in rainfall with more dry days and shorter growing periods, is likely to increase water stress due to higher transpiration and water demand by plants, including crops. This is likely to affect yields and reduce pasture quality and biomass availability for fuel and other uses[5].

Climate change driven hazards, impacts and vulnerability:

On agriculture

Increasing temperatures, increasing incidents of extreme heat and drought are likely to reduce the productivity of and reduce the yield of maize which accounts for up to 80% of cultivated land [6]. 95% of farmers in Malawi cultivate to meet subsistence needs and shortened growing seasons, increased variability in rainfall, increased temperatures at the start of the rainy season are likely to further reduce, particularly during the long term[7]. There is also an increasing risk of farmers choosing inappropriate varieties of maize, further increasing the risk of crop failure[8]. Significant declines in agricultural output and increased prices of most food commodities are expected, with droughts estimated to increase poverty levels by 1.3 percentage points, and generate losses of on average 4.6% for maize. Increased rainfall variability is also expected to increase risks of above normal rain and flooding as well as more dry days which is likely to reduce the area suitable for agricultural production[9].

Climate change lowers livestock productivity, through the effects on fertility, disease prevalence and forage availability[10]. Climate related impacts on cattle production have led to increased incidents of diseases, heat stress, drying up of water sources and associated water availability and reduction in supply of fodder[11]. A number of animal diseases, both avian and cattle are believed to be related to climate change[12]. On the other hand, livestock are less vulnerable to climate impacts than crops and there livestock, particularly small livestock such as poultry are a critical buffer against poverty[13].

On forests and rangelands

Forests and rangelands are critical both to sustainable livelihoods and ecosystems in are extremely vulnerable to project changes in climate change, together with other stressors with which climate change interacts. In Malawi, extended droughts are the major climatic hazard for the forest sector, which leads to land degradation, a loss of soil fertility, and forest fires[14]. Droughts have also led to drying up and deterioration of rangelands and reduction of water bodies on which grazing livestock depend[15]. Studies predict that wet moimbo forests, which are found in the upper catchment of these sites, are set to decline by up to 28.6% in 2050 and 41.6% in 2070 on account of projected drier climate. Climate change, specifically erratic and high temperatures are associated with reduced availability of firewood, thatch grasses, fruits and food, vegetables, mushrooms, and medicinal plants from moimbo woodlands in Mchinji, on which local livelihoods are highly dependent[16].

On land degradation

Increased intensity and frequency of extreme rain events is contributing to severe erosion and gully formation in the upper catchments. This is exacerbated by the desiccation and hardening of soils in the catchment which

are exposed to high temperatures and wind by forest clearance for agriculture, grazing and collection of biomass for fuel. This has over the years led to loss of soil fertility . Drought and increased temperatures have further reduced biomass production which provides for energy needs in rural communities and fodder and forage for livestock, further reducing the vegetative cover and exposing soils to erosion. Low vegetative cover in catchments has increased the 'flashyness' of streams during rainy days, causing floods, reducing ground water recharge and dry season stream flows.

On ecosystem services

Climate change has a direct negative impact on ecosystem services including biodiversity[17], hydrologic services[18] and on ecosystem goods by reducing regeneration and productivity of natural and human modified landscapes[19] "with dire consequences on food and water security, water quality, energy resources, and sustainable livelihoods of the most rural communities"[20]. Functional ecosystems play a critical role in adaptation to climate change and protecting and enhancing ecosystem services are critical to supporting climate change adaptation[21]. This loss of ecosystem goods and services is accelerated by unsustainable use of natural resources and their consequent degradation. This unsustainable use, in the project area, is a consequence of high dependence of a rapidly growing population on natural resources and the lack of local institutions to manage and govern these resources in a sustainable manner.

Increased frequency and intensity of extreme rain events has accelerated erosion and sedimentation of wetlands and rivers affecting biodiversity, including that of economically important fish species.

Aquatic and riparian areas, including wetlands are facing degradation due to the reduced flows and sedimentation as well as an increase in unsustainable fishing practices which has decimated populations of economically important fish, pushing some, such as the Malawi Salmon into the critically endangered category. This also has serious implications for water availability for domestic, livestock and agricultural purposes.

Root Causes of Vulnerability

The Malawi Fifth Integrated Household Survey (IHS5) poverty lines shows the economic well-being of the people in Mchinji to be largely populated with very poor people and 57.6% are ultra-poor. In addition to that, the poor represent 29.4% of the total population. Only 2.1% are rich and 10.9 are at the minimum level of economic well-being. For Kasungu 45.8% are ultra-poor, representing 35.4% of the population and for Nkhotakota 35.8% are ultra-poor, representing 38% of the population. A spate of natural disasters that are linked to climate change, have destroyed and damaged homes and the limited rural infrastructure for water supplies and roads. The recurring and widespread nature of these disasters has also impacted the effectiveness of investments made to date into poverty reduction efforts. Women bear the brunt of the situation having to venture further for fuel and water and to provide care for families in addition to farming and garden work. Retention of girl children in school is also impacted owing to loss of income, increased effort required for resource provisioning as also pressure for early marriage.[22] The lack of a well-developed private sector and robust value chains and low levels of tourism, leave few options for employment outside the agricultural/natural resources sectors.

High dependence on rain-fed agriculture

Approximately 48% of farmers in Malawi cultivate plots of one acre or less[23] and almost 82% of employed persons are engaged in agriculture, forestry and fishing. [24] There has been a subdivision of land holdings and fragmentation across generations which drives agricultural expansion into forest areas and dambo lands-wetland foreshores traditionally used for grazing.

Agriculture, the major land use in the Bua catchment, is a major driver of continued pressure on the landscape. The main crops in the project area are maize, soybeans, groundnuts and tobacco. Poor farming practices are contributing to reduced productivity and low agricultural incomes. The predominance of subsistence crops as opposed to commercially viable alternatives additionally contributes to continued poverty.

Farmer are facing high costs of inputs, drop or volatility in prices for crops, poor access to improved agricultural inputs and technologies and value chains that are primarily dependent on middlemen. Agro-based value chains are highly important in the region; however, these are at the primary level of production, aggregation and transport. Sale of produce is primarily by smallholder individual farmers to vendors who set up temporary camps during harvest. No post-harvest processing is done. Although farmers are aware of government-set minimum prices, they lack bargaining power regarding prices. An exception is the presence of cooperatives in Nkhotakota district which helps farmers mill rice and sell at better prices.

High dependence on climate sensitive natural resources

The vulnerability of communities to climate change impacts is exacerbated by the high dependence on climate sensitive sectors and natural resources. Natural systems are affected by climate change and altered rainfall patterns, increased temperature and extreme events can trigger erosion, sedimentation and loss of nutrients from catchments which has long term impacts on productivity. This vulnerability increases if ecosystems are subjected to unsustainable use of natural resources and land cover change, deforestation, biodiversity loss and pollution[25].

Rural communities are completely dependent on biomass for fuel, and charcoal production is a major source of income. This has contributed significantly to the loss of forest cover in Malawi, which has declined to 23.78% in 2020 from 37.1% in 1990.[26] Consequent environmental degradation (deforestation, erosion) and loss of soil fertility have increased vulnerabilities to climate change leading to impacts such as crop failure.

Increased reliance on natural resources is the primary coping strategy adopted by communities, including those in the proposed project area, during periods of stress associated with crop losses or failures. This has led to a series of environmental challenges that contribute to the vulnerability of communities such as:

1. Forest degradation through conversions of communal forests to agriculture or scrubland and over-extraction of fuel, timber and non-timber forest produce as well as construction materials for building, thatching and fencing.

2. Biodiversity loss and introduction of alien invasive species due to hunting, poaching and incursions into protected areas and community forests.

3. Land degradation through increased soil erosion caused by a combination of exposed, unprotected soils and climate induced extreme rain events which trigger sheet erosion and gully formation.

4. Erosion of river banks by floods generated by intense rains over degraded catchments resulting in flash floods and loss and submergence of agricultural lands bordering rivers..

5. Siltation and sedimentation of riverine, riparian and wetland habitats leading to decline in economically important and endangered fish species, including the Malawi Salmon.

6. Degradation of pasturelands along riverine tracts and “dambo” lands by agricultural encroachments and overuse as a consequence of poor management.

This has increased vulnerability of crop and livestock farmers as yields have declined and diseases have increased in livestock which are stressed by heat and reduced forage. Women, who bear the responsibility of fetching fuel and water are forced to travel increasing distances. Maladaptive coping strategies such as sale of wood and charcoal and use of destructive fishing methods such as fine mesh gillnets and poisons have further accelerated the cycle of environmental degradation.

Long term preferred solution

The long term preferred solution would require a two-pronged strategy which increases household incomes and resilience through climate resilient agriculture including private sector investment, and simultaneously addresses the underlying challenge of ecosystem degradation to ensure long term sustainability of ecosystem services that vulnerable communities depend upon. The project will deliver increased adaptive capacities of communities to impacts of climate change through community centred, climate risk informed, climate resilient agriculture and integrated watershed restoration which combines nature and ecosystem based approaches building on traditional and indigenous knowledge. Increased agricultural productivity will be achieved through widespread adoption of climate resilient practices supported by improved extension services and effective use of climate information. The solution will result in revival of ecosystem services leading to long term resilience to climate impacts through community based restoration of degraded landscapes and critical habitats. Strengthened local institutions and governance structures will ensure sustainable management of natural resources and linkages with national policies and programmes will ensure their continuity and help transform both production and natural landscapes.

The preferred solution will include strengthening agricultural value chains through building of community capacities via technical assistance and support in the adoption of climate resilient, high productivity seeds/cropping techniques and access to energy efficient technologies, building access to markets via de-risked private sector investments from MSMEs and larger commercialized corporations, and development of alternative climate resilient livelihoods such as ecotourism and sustainable briquette production from agricultural waste. Enhancing access to finance, insurance and social protection measures will also be explored as part of the preferred solution. This will be facilitated and sustained by improved governance of natural resources and implementation of policies at the local level through strengthening of community institutions and linkages with district level agencies.

The project will ensure resilience to future changes in the drivers of environmental degradation and impacts of climate change by:

1. Improving agricultural productivity and sustainability by supporting adoption of climate resilient crops for both subsistence as well as marketable produce.

2. Strengthening local institutions, including community based organisations, to better manage and govern the use of resources to prevent and reverse over-extraction and unsustainable use.

3. Addressing environmental degradation and by restoring ecosystems using a catchmen- based approach and selecting areas for restoration adjacent to intact habitats for assisted natural regeneration, the project will create conditions that restore and sustain ecosystem goods and services which are resilient to future climate change impacts by building technical capacities of local institutions by strengthening local governance and management structures and by linking restoration action with on-going government programmes on public works (see pg. 14).

4. Diversifying livelihoods and incomes to non-extractive and sustainable use of natural resources which are resilient to future climate change.

5. Integrated use of climate information thereby ensuring that decision making and planning in the future is based on climate data.

Several options to address the climate change problem in the project areas were considered, including the option in this project. Considerations were made with regards to relevance to the local context, addressing the current and future impacts of climate change, sustainability, likelihood of scaling up, adding value to previous investments, building on cross-sectoral initiatives thereby amplifying impact and capitalization of resources in other sectors and programmes, and alignment with GEF/LDCF strategic directions. This solution has been chosen against other options that are more short-term, addressing only the impacts of current climatic trends without considering future climate change. It has also been chosen against options that only address specific sites without taking into account entire systems that integrate livelihoods, ecosystem connectivity and value chains that connect climate resilient production and livelihoods on one hand and markets and investments on the other sectors (see Section C for an elaborate discussion on the suitability of this preferred solution).

Relevant Policies

Malawi has put in place a series of legislative sectoral frameworks and strategies to support climate change adaptation planning, increase the resilience of the country's vulnerable population and ecosystems and to integrate environment and climate change management in socio-economic development activities. A host of national policy documents seek to address the challenge of habitat loss and fragmentation, over exploitation of biological resources, pollution and infestation of invasive alien species. A detailed list is provided in Appendix 1.

The Government of Malawi is a signatory to several regional and international treaties demonstrating its commitment to global efforts to reduce climate change drivers. This includes the Kyoto Protocol, Paris Agreement and UNFCCC through the Nationally Determined Contributions[27]. The implementation of activities and programmes towards these efforts has been hindered by inadequate financing and insufficient leveraging of resources from the public and private sectors at national and international levels. Poor technological development and capacities to implement climate change related interventions, weak enforcement, and gaps in effective and appropriate institutional frameworks that improve coordination and integration among stakeholders are additional constraints. Addressing these challenges is critical to the success of tackling the cross-cutting issues that make up climate change management and enable Malawi to address its medium- and long-term adaptation needs.

The Nationally Determined Contributions (NDC)[28] sets out goals and commitments for the period 2015-2040 and presents concrete strategies for addressing the causes of climate change and responding to the adverse effects and impacts in line with provisions established under the Paris Agreement. The NDC builds upon the National Climate Change Management Policy (NCCMP, 2016), and several other key government policies and guiding documents including Malawi 2063, the Malawi Economic Growth Strategy (MEGS), and the Malawi Growth and Development Strategies (MGDS) III. It also aligns with Malawi's National Adaptation Plan (NAP) Framework.

The Malawi 2063 guidelines for Pillar and Enabler Coordination Groups are a critical governance mechanism to enhance the implementation and monitoring of national development plans. The provide a framework for coordinated planning and management with the aim of realizing the goals and objectives of the 10-year Implementation Plans of Malawi 2063. The project will specifically leverage the pillars of Agriculture Productivity & Commercialization Coordination Group its Technical Working Groups on Productivity, Commercialization and Irrigation and will collaborate with the identified MDAs and lead institutions. This will ensure consistency with government programmes and coordinated implementation of activities and will additionally help in private sector involvement.

The National Forest and Landscape Restoration Strategy (NFLRS)[29] provides an ecosystem-based approach to managing water resources and their catchments. It focuses on large-scale landscape restoration aiming to regain ecological functionality and enhance human well-being across deforested or degraded forest landscapes

leading to increased food, water, and livelihood security. The country's Resilience Strategy[30] underscores the need for Malawi's natural resource assets, ecosystems and services to be sustainably managed and contribute to sustainable livelihoods and achieving sustainable development goals. It recognizes the urgency in strengthening the resilience of the population and reducing their vulnerability and exposure to climate shocks. This strategy also aligns with NFLRS, National Biodiversity and Action Plan (NBSAP) and Environmental Policy[31] and acknowledges the need for multiple, complementary actions at varying scales, both geographic and institutional, in ensuring a transition toward equitable and climate-resilient growth and development.

Baseline scenario and associated baseline projects

The Government of Malawi has several baseline programs and projects that are being implemented which address the issues of poverty, land degradation, deforestation and biodiversity loss. The proposed project builds and expands on these projects and those which aim to enhance livelihoods through private sector engagement and strengthening agricultural value chains, and restore/conserve landscapes. In addition, the involved Ministries and Departments have engaged with the private sector and community- and faith-based organizations in delivering these programs.

Critical among the baseline programmes on which the project builds are summarised in the table below with a short note on the additional climate-related complementarity of the proposed project below the table. More details on each of the projects listed are provided in Appendix 3.

S/N	Donor	Project Title and Summary	Agency	Start	Period	Grant	Co-finance
1	USAID	Feed the Future Combatting hunger and improving agricultural productivity in target countries through enabling agricultural policies and investment in crops with high potential for markets	USAID	2013	15 years	US$ 35 million (2022-27)	
2	KFW, Irish Aid	Growth Accelerator Program Accelerating growth of early stage, innovative, influential and aspiring entrepreneurs with an emphasis on impact investing for sustainable enterprise growth, mentorship, training and technical assistance.	UNDP	2018	2026	US$ 5 million (2022)	
3.	GEF	Effective Management of Mchinji Ecosystems for Restoration of upper Bua River Catchment Project	UNEP	2022	4 years	921,508	6,300,000
4.	Govt. of Flanders	Climate Reilient Initiative in Malawi – Phase II	UNDP	2023	3 years	2,500,000 Euro	500,000 USD
5.	UN Multi-Partner Trust Fund	Empowerment of Women and Youths in Agriculture in Malawi	FAO, UNDP	2023	28 months	2,450,000 Euro	
6.	World Bank	Enhanced Climate Smart Public Works Programme	National Local Govt. Finance Committee	2022	2027	120,000,000	

1. Feed the Future (USAID 2013- 2028)

The proposed project will replicate the strategy of the Feed the Future programme by supporting the adoption of crops with high productivity and potential for markets such as soybean and groundnut which are also drought resilient. This will help transform the livelihoods of farmers in project areas by helping them move from low yielding, poor value and climate vulnerable crops. The proposed project will additionally support climate resilient practices under Component 2 and improve agro-based value chains for these crops under Component 3. Feed the Future is currently active in several parts of Malawi including Bua River basin districts where partnerships and collaborations will be explored.

2. UNDP Growth Accelerator Program (UNDP, 2018-2026)

The UNDP Growth Accelerator (GA) programme seeks to stimulate growth and entrepreneurship for sustainable enterprises. The programme will be tapped to support the proposed activities under Component 3 that will help strengthen market linkages for climate resilient crops and establish value chains to provide communities with sustainable and climate resilient livelihoods.

3. Effective Management of Mchinji Ecosystems for Restoration of Upper Bua River Catchment (UNEP, 2022-2026)

The four year initiative proposed between is currently at the concept station and will be implemented by the UNEP during the period 2022-2026 in the Mjinji Forest Reserve. The project will support ecological restoration, community mobilisation and strengthening of governance and community based management of both protected landscapes and communal lands. These investments will directly support the activities proposed under Components 1 and 2 of the CLAP project.

4. Climate Resilient Initiative in Malawi – II (Govt. of Flanders, 2023-2026)

The second phase of the project will sustain and scale critical adaptation interventions spearheaded by Phase-I which include building resilience through the channels of district councils and community-based approaches in the districts of Mzimba and Kasungu. Phase-II will additionally introduce Private Sector as the promoters of sustainable and scalable adaptation solutions in other districts. These activities are similar to those under Components 1, 2 and 3 of the CLAP project. The spatial and temporal overlap with the CLAP project (Kasungu district) will facilitate a wider impact of the GCF interventions, both in terms of watershed areas treated and numbers of communities benefited. A coordination mechanism will be set up to ensure synergies between the two projects and to avoid duplication of work or sites.

5. Empowerment of Women and Youths in Agriculture in Malawi (FAO/UNDP, 2023-2026)

The project is being implemented through the Ministry of Agriculture and District Councils of M'mbelwa and Kasungu. Component 1 and of the proposed CLAP project will benefit and build on the investments in strengthening local governance structures, enterprises and enterprise committees while component 3 will build on the support provided to farmer organisations and cooperatives to engage with the private sector, specifically agri-businesses.

6. Enhanced Climate Smart Public Works Programme (2022-2027)

The programme seeks to address land degradation, biodiversity loss and impacts of climate change through interventions land conservation, afforestation, natural regeneration and promotion of sustainable livelihoods. The Public Works programme is being implemented in the same districts as the proposed CLAP project, specifically targeting economically poor households. The CLAP project will extend the activities of the public works programme to the sub-watersheds under Component 2 particularly those pertaining to soil fertility and moisture retention from added organic manure which is proposed under the Public Works programme. The project will also extend livelihood support to households not targeted by the public works programme under Component 3. Coordination between the two projects will facilitate greater investments on alternative livelihoods and allow intensification of agricultural interventions and extension of restoration efforts in selected catchments. The project will also explore using the programme to support the poorest and most vulnerable households in contributing towards restoration activities.

In the past two decades, there have been substantial investments in climate mainstreaming in policies, institutional strengthening and capacity building in Malawi which have addressed institutional and capacity gaps at the national level, and at the level of district agencies and grassroots organisations wherever interventions have been implemented on the ground.

The impacts of two decades of investments from LDCF and other agencies have been significant in terms of addressing gaps in policies and establishing a mechanism for decentralised implementation of these policies and government programmes. Earlier investments have enhanced technical capacities in climate information and early warning systems as well as of extension services in climate resilient agriculture.

However, most of these projects and programmes have targeted specific areas of the country and have not been scaled up to other areas, such as proposed project sites for CLAP, which will also apply models for scaling up beyond the immediate project sites through for example private sector investments and value chain development. This has often been due to limitations on resources available.

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B. PROJECT DESCRIPTION

Project description

This section asks for a theory of change as part of a joined-up description of the project as a whole. The project description is expected to cover the key elements of good project design in an integrated way. It is also expected to meet the GEF's policy requirements on gender, stakeholders, private sector, and knowledge management and learning (see section D). This section should be a narrative that reads like a joined-up story and not independent elements that answer the guiding questions contained in the PIF guidance document. (Approximately 3-5 pages) see guidance here

Project Description

This project will increase adaptive capacities and reduce vulnerabilities of communities to climate change impacts through community centered integrated watershed based approaches. The project strategy will combine nature- and ecosystem-based approaches that build on traditional and indigenous knowledge. It will support the increased application of climate resilient practices by strengthening extension services and effective use of climate information. This will lead to increased agricultural productivity and the revival of ecosystem services for long term climate resilience, through community based restoration of degraded landscapes and critical habitats within and outside protected areas. The project will strengthen local institutions and governance mechanisms within communities and local government agencies through organisational capacity building and implementation of policies that strengthen links between the two for decentralized management of natural resources. The project will leverage the private sector to introduce and scale up adoption of modern, climate smart technologies and enhanced market linkages as well as support to climate resilient livelihood investments leveraging existing programmes and funding windows for MSMEs.

The project sites are located in three sub-catchments of the Water Resource Unit 5F which is located at the top of the watershed in the north-western part of the catchment and falls under the districts of Mchinji and

Kasungu. Project activities on private sector engagement will include these areas but will additionally include areas along the Bua river falling under the Nkhotakota district, particularly in locations near Lake Malawi and Bua river shore where cultivation of rice and groundnuts and fishing are key economic activities. Further details on the project site are provided in Annex C and Appendix 4.

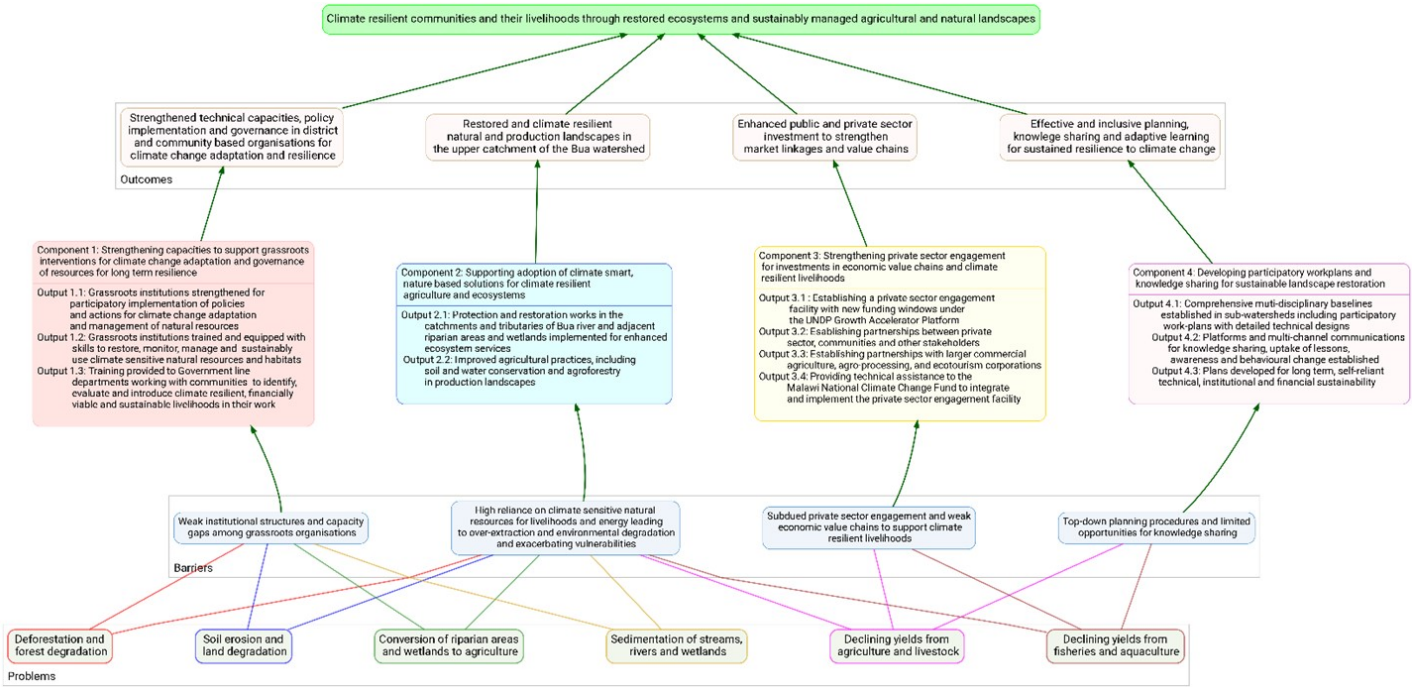
The project will build synergies, through learning and coordination at national level, with the potential Southern Africa GCF project currently under design (Nature based Solutions for Agropastoral Resilience to Climate Change in Catchments (NbS-ARC) for Southern Africa). The elements/approaches of NbS-ARC relevant to this project include: smallholder/herder and communal land use systems (agriculture, forestry and grasslands) that minimise runoff and maximise water infiltration; surface and groundwater storage capacity where possible to use during droughts and dry periods; and maximising water productivity in agriculture and pasture management, particularly through the efficient use of irrigation technology and grazing systems. Various forms of land management. Details on the practical linkages and economies of scale to be derived from this complementarity will be assessed during PPG stage, with a focus on cross-country learning.

Theory of Change

The project will enhance the adaptive capacities of communities to mitigate and reverse the impact of climate change which has led to the reduced agricultural productivity and accelerated degradation of the environment and ecosystem services.

The project will employ an integrated landscape based approach to address the problems and barriers described below in order to have a gender responsive, sustainable and transformational impact which results in diverse, climate resilient livelihoods of communities through increased productivity and climate resilience in agriculture and restored, protected and well managed natural resources and habitats. The theory of change for the project is summarized in Figure 1.

Figure 1: Diagrammatic representation of the theory of change



Problems

Increased crop failures and declining yields from agriculture

Droughts, heat waves and hot winds during the rainy season, truncated or delayed rainy season and extreme rain events have all contributed to crop failures and reduce yields, including for the primary food crop – maize, and a direct impact on food security in the region. This, coupled with a high pressure on land by the growing population has triggered multiple challenges such as clearing and conversion of forests, wetlands and riparian areas to agriculture. It has also resulted in a higher reliance on forests for timber and non-timber forest products and charcoal causing further environmental degradation, particularly erosion which is exacerbated by climate change impacts such as long dry periods and heat waves followed by extreme rain events. The expansion of agriculture into riparian areas has directly increased the vulnerability of formers to the more frequent and intense flooding caused by an increase in extreme rain events and exacerbated by denudation of forest areas and degradation of catchments.

Declining yields from livestock

Drought and heat waves has resulted in a decline in rangeland quality and water for livestock. Heat stressed and underfed livestock are more prone to disease and fetch lower market value, directly affecting one the critical coping strategies communities have for periods of economic stress. The loss of traditional grazing lands to agricultural expansion in the traditional dambo lands has led to the expansion of grazing areas to into protected forests. This has contributed to reduced recruitment, deforestation and environmental degradation. [cite]

Declining yields from fisheries

Reduced stream-flow during dry season and increased sedimentation during rainy season combined with habitat fragmentation and conversion of dambo wetlands and river banks/riparian areas to agriculture by farmers seeking moisture and fertile lands to cope with drought and adapt to climate shocks for the short term. This has contributed to a decline in water quality and habitat for fish. Destructive fishing practices have contributed to overfishing, leading to a decline in fisheries which is an important source of income and livelihoods, particularly in the Kasungu district.

Reduced productivity from forests and rangelands

Droughts and heat waves coupled with altered rainfall, including increased frequency of extreme events has suppressed the productivity and regeneration of forests and rangelands and, together with overgrazing, deforestation for agriculture and for forest produce has contributed to large scale erosion and land degradation, particularly in communal forests and rangelands, but also the borders of protected areas.

Environmental degradation and decline of ecosystem goods and services

Accelerated environmental degradation results in reduced ecosystem goods and services, particularly hydrologic services such as flood control, sustained dry-season stream flow and water quality (sediment transport). It also directly impacts the productivity of natural systems and their ability to regenerate and recover from climate change. Produce from forests and rangelands/bush are an important source of food during periods of crises[1][34] and a major source of income[2][35], albeit often through unsustainable harvesting which further exacerbates environmental degradation. Therefore environmental degradation has a direct

impact on the adaptive capacity of communities and both a problem and an underlying cause of vulnerabilities.

Environmental degradation in the project areas comprises of forest degradation and deforestation, conversion of riparian areas and wetlands (dambo) from pastures to agriculture, soil erosion and land degradation and sedimentation of streams and rivers. Climate change has accelerated environmental degradation by reducing productivity, regeneration and recover of ecosystems due to reduced moisture and increased heat stress. Increased frequency and intensity of extreme rainfall has accelerated erosion and land degradation, made worse by the loss of vegetative cover.

These problems and their underlying causes can be resolved through 1) the effective implementation of policies and governance arrangements by strengthening institutions at the grassroots and sub-national level; 2) adoption of improved and climate resilient practices in agriculture, livestock raising, sustainable fisheries and sustainable harvesting of natural resources combined with the restoration of the natural environment to rehabilitate and revive ecosystems and their functions and services for long term resilience of livelihoods; and 3) enhancing private sector engagement to ensure financial sustainability and scaling up of sustainable livelihood interventions; and 4) continuous monitoring and impact evaluation combined with effective dissemination and communication to ensure behavioural change and adaptive learning among stakeholders and implementing agencies.

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[2] Harriet Elizabeth Smith, Malcolm D Hudson, and Kate Schreckenberg, 'Livelihood Diversification: The Role of Charcoal Production in Southern Malawi', *Energy for Sustainable Development* 36 (1 February 2017): 22–36, https://doi.org/10.1016/j.esd.2016.10.001; Patrick Kambewa et al., 'Charcoal the Reality: A Study of Charcoal Consumption, Trade and Production in Malawi' (International Institute for Environment and Development, 2007), https://www.iied.org/sites/default/files/pdfs/migrate/13544IIED.pdf.

Barriers

There are a number of barriers to sustainable, climate resilient livelihoods and ecosystems, which need to be addressed while designing interventions to address these problems.

Weak institutional structures and capacity gaps among grassroots organisations

There are a number of barriers that emerge from the existing institutional structures in rural communities, capacity gaps in their organisations as well as prevalent patterns of land ownership and social organisation. This creates obstacles in promoting equitable, community centred activities and involving communities in the management of their resources or action to avoid, mitigate or adapt to climate impacts. It also has implications on private sector engagements and in targeting resources for restoration or climate resilient practices in the agricultural sector

Significant proportions of rural lands are owned by absentee landlords who lease them out to tenants for different periods of time. There is little incentive among the tenants to invest in long-term measures for land restoration and agro-forestry interventions which involve high levels of investment and long gestation periods to deliver benefits.

Prevalent biases in some rural areas are a barrier to the equitable representation women, youth and marginalised groups in local institutional structures. For women, these biases often limit ownership of assets and resources, hinder access to credit and to information and prevent these groups from participating in decision making within families and communities[1]. Youth too, have similar challenges in access to resources and representation in decision making[2]. Capacity gaps in existing organizations which provide a platform for women or other marginalized or vulnerable groups, including youth, is a barrier to their meaningful engagement in projects. It is particularly important for such organizations to have representation on the various committees in the village and, where feasible, access to financial resources through small savings and banking.

There are gaps in the enforcement of regulations on access to natural resources in the rural context of Malawi where communities often do not have any alternative sources of income and livelihood, and where local governments and institutions have limited human resources for enforcement.[3][36] Often, community-based organisations do not have the necessary institutional linkages, authority or capacities to take on the responsibility of protecting or managing their resources.

There are reports of high levels of internal conflict and elite capture of some local institutions.[4][37] Cooperatives and unions of farmers, workers, fishers and pastoral groups are also weak and those in farming are dominated by tobacco growers.[5][38]

There is a gap in available technical expertise and financial resources at the local level that are required to support communities to take measures for climate adaptation and to mitigate impacts of climate change.

For example, implementing climate smart agriculture measures to mitigate impacts of drought and increased temperature require knowledge of and access to appropriate crop, plant and forage varieties and implements. Training is needed for both farmers and extension services to enable them to effectively use climate information and forecasts for decisions such as timing of sowing and planting. There are gaps in technical knowledge on restoration measures for rangelands and forests. Financial investments and technical know how is needed to implement soil and water conservation measures necessary to arrest erosion and land degradation caused by the combination of extreme heat and exposure of soils with the increased frequency of extreme rain events. Similarly, restoration of riparian areas and wetlands which face accelerated degradation on account of both drought as well as floods and associate sedimentation require investments in reforestation and assisted natural regeneration as well as strengthened local institutions for their management and governance.

This hinders support to communities in the adoption of climate smart technologies and climate resilient agriculture and livestock production. There is insufficient capacity to support sustainable extraction of natural resources and use of appropriate technologies and management of fisheries and forestry resources. Expertise and resources are also needed in land restoration through soil and water conservation measures and soil fertility management. Value addition and marketing of produce are other areas where technical expertise is lacking. Finally, there is a need for expertise in helping build local organisations and institutions, including administration, book-keeping and accounting.

There are gaps in the integration of gender concerns, or those of vulnerable and marginalized groups, in the development of extension packages and support at the sub-national level. This can be a barrier which prevents

these groups from accessing benefits of schemes and programmes routed through government extension services and line staff.

Mechanisms to transfer capacities or assist communities in developing strategies and plans to respond to climate change, particularly in agriculture are weak or non-existent. There is a gap in the capacities of local government agencies to interpret and make contextual use of climate services to inform their extension and developmental activities.

Most livelihoods in the Bua River basin comprise rain-fed agriculture and fishing, with minimal knowledge and information available to promote their expansion or intensification. Specifically, local communities do not have the skills to develop agricultural and fishery value chains or maximise the value of their products — including post-harvest value-addition practices, such as food processing and storage.

Lack of alternative livelihood sources leading to high reliance on climate sensitive natural resources for livelihoods and energy thereby exacerbating vulnerabilities

Natural resources are the main source of livelihood for most of the population in this project area. The majority of rural families depend directly and heavily on natural resources for their livelihoods, in particular woodlands and forests, for providing fuel, enhancing soil fertility, generating cash income (for example, from charcoal), and supplying protein (for example, from fisheries). The continued high dependence on traditional biomass is affecting forest resources in the area resulting in denuded land cover and loss of carbon sinks.

Over 90% of rural energy needs are met from local biomass leading to continued and unsustainable extraction of biomass for domestic use. Biomass extraction also drives the charcoal economy and has become an important livelihood, particularly for young men. The current rates of extraction exceed regeneration, leading to large scale deforestation of communal lands and even protected forests. This barrier poses a significant risk to the project as without addressing these energy needs, the underlying causes for deforestation and land degradation cannot be addressed.

Prevalent practices in agriculture (including animal husbandry), fisheries and forestry are unsustainable and out of step with the increased population pressure, altered environmental conditions and weather patterns due to climate change. This has prompted maladaptation, over-extraction and depletion of forests, agricultural lands, wetland bodies and their boundaries, and of soils. All of this is exacerbating and accelerating environmental degradation, reducing the resource base, disrupting ecosystem services and thereby increasing vulnerabilities of communities and ecosystems to climate change.

Communities are unable to break the cycle of climate change impacts on reducing yields from agriculture and natural resources which leads to environmental degradation through increasing pressures on available natural resources. Restoration and sustainable management of natural resources, including arresting degradation of forests, land and riverine habitats is necessary to sustain livelihoods and ecosystem goods such as food and fodder, and services such as flood control and sustained dry season stream-flow, on which communities rely, particularly during periods of droughts and floods. To do so, communities require access to livelihood options and energy sources which are climate-resilient. This project will address this challenge by providing climate resilient alternative livelihoods, access to techniques and technologies for more efficient use of resources and sustainable, climate resilient practices in farming, fisheries and livestock raising and strengthening institutional structures to manage and govern the sustainable use of natural resources.

Subdued private sector engagement and weak economic value chains to support climate resilient livelihoods

Given the limited capacity of farmers/communities to engage in producing high volumes of high-quality agricultural commodities and value-adding activities (such as post-harvest processing), very few private sector

enterprises have invested in associated value chains, as they are perceived not to be profitable. They are also limited due to various factors; including : i) the high costs associated with accessing smallholders who are not organized and exercising collective bargaining power, and therefore do not generate economies of scale needed to keep prices competitive; ii) products are not value-added and do not meet quality requirements and standards necessary for access to high-value markets; and iii) limited information and information sharing between actors along the value chains on available products and markets.

Malawi's central region is particularly suited to groundnut production, with 70% grown in Mchinji, Lilongwe, Kasungu and Ntchisi districts.[6][39] Furthermore, demand for oils from groundnut and other crops is expected to increase with increasing populations and urbanisation. The region lacks linkages between private and small-scale producers which could support crop diversification, improved systems for marketing of produce and processing of raw products which would promote food security and incomes at the household level. Poor road infrastructure and high transportation costs compound these issues.

The adoption rate of enhanced agricultural and alternative livelihoods is limited due to low financial capacity among communities. Currently, communities within the target districts of the basin have limited access to commercial finance from banks and microfinance institutions. There are many factors contributing to this barrier, including the perceived low demand for financial products among Banks and MFIs, perceived high costs of providing credit to these communities in remote rural areas. Besides, Banks and MFIs do not offer tailored loan products that meet cropping/harvesting patterns and cashflows of farmers. The limited access to finance is further compounded by the low level of financial literacy among communities in the basin, which constrains their income generation potential and prevents them from effectively engaging in the development of sustainable, climate-resilient livelihoods.

Top-down planning procedures and limited opportunities for knowledge sharing

A mix of capacity gaps and top down procedures for planning is a barrier to community cantered design and planning of activities and their sustained implementation. The use of available innovative and cost effective technologies which aid participatory planning and monitoring is hindered by capacity gaps and limited resources in local institutions. Top down procedures limit the involvement of stakeholders in the process of data gathering and analysis for monitoring and impact evaluation. This limits opportunities for identifying local and self-reliant solutions to problems or learning and evolving from past experiences.
Communities and local government institutions lack formal platforms which would allow the sharing of experiences, traditional and indigenous knowledge and practices and serve as mechanisms for cross learning and collaboration. This prevents innovative ideas and lessons from other projects and areas to be scaled up an replicated. It hinders stakeholders from leveraging available opportunities in linking with private sector and markets as well as adoption of available and alternative technologies and livelihoods. Finally, the lack of a mechanism to share lessons and experiences form other initiatives and projects prevents the scaling up of successful interventions and leveraging existing programmes of the government and other development agencies.

A problem tree diagram summarizing the challenges and their root causes is presented in Figure 2.

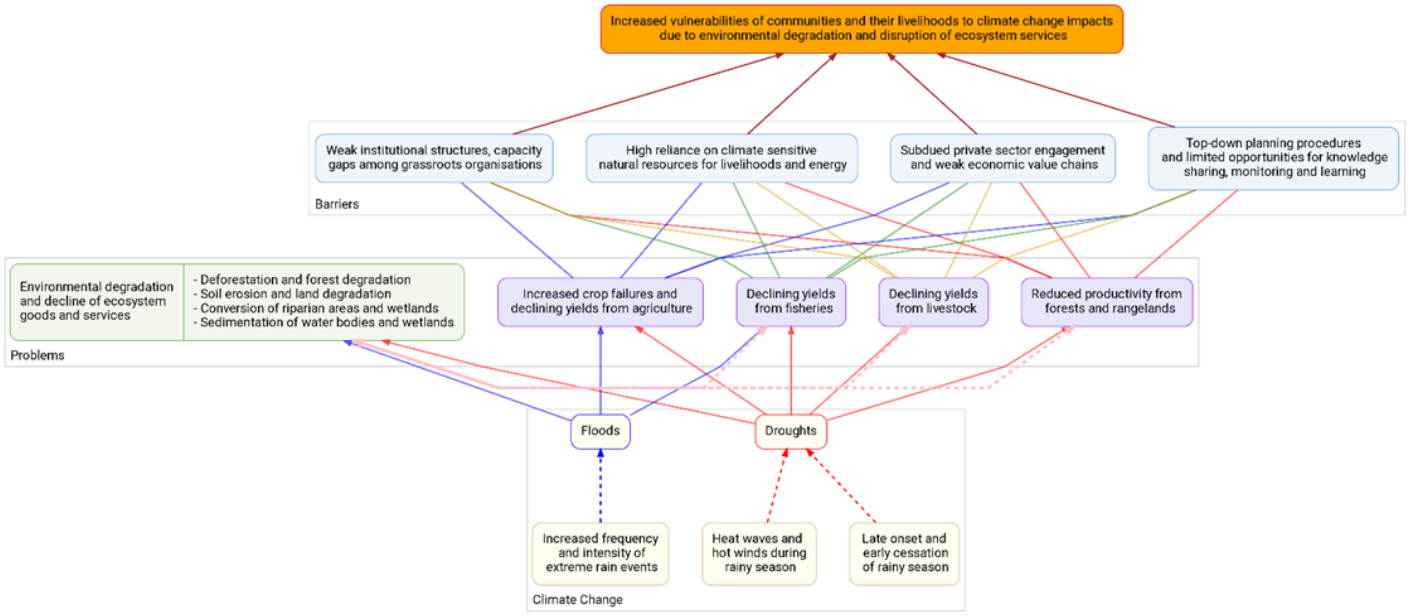

Figure 2: Problem tree

Components and Activities

These barriers and problems will be addressed through the coordinated implementation of four components and their respective outputs and activities which build on and reinforce each other. These components will lead to the overall projects objective: **To increase adaptive capacities and reduce vulnerabilities of communities to climate change impacts** using integrated watershed based approaches that partner with private sector to rejuvenate agriculture and enhance investments in climate resilient livelihoods while reversing environmental degradation and restoring ecosystem services while enhancing their productivity and resilience to climate change**.** The components and outputs described below seek to implement these recommendations through a participatory, community centered strategy.

A watershed approach, also referred to ridge-to valley approach, is an integrated landscape restoration framework which sequences restoration of micro-catchments from the top of drainage network towards the bottom. This ensures hydrologic connectivity and cumulative impacts of nature based and assisted natural regeneration. It ensures that erosion is addressed at its source and sediment and nutrient flows into rivers and water bodies are arrested. Watershed approaches increase ground water recharge in the upper catchment, thereby increasing stream-flow during the dry seasons, while ameliorating flood generation during heavy downpours, thereby mitigating critical impacts of climate change.

The project envisages creation of committees for each of the sub-watersheds and watershed development teams to carry out the project interventions at the mini-watershed level. The PPG stage of the project will obtain details of area under communal forests (in non-agricultural lands) and riparian vegetation along streams and wetlands under each of these watershed units.

Component 1: Strengthening capacities to support gender responsive grassroots interventions for climate change adaptation and governance of resources for long term resilience

Outcome 1: Strengthened technical capacities, policy implementation and governance in district and community based organisations for gender responsive climate change adaptation and resilience

Results of activities implemented under this component will strengthen institutional capacities to design, plan, implement and manage interventions for climate resilient agriculture, livestock, fisheries and forestry and the restoration of catchments. These will precede activities under the other components and will lay the ground for their successful implementation. Its three outputs will identify capacity gaps in institutions with a mandate to support communities and institutions at the community level. Potential for gender responsive interventions and for inclusion of vulnerable groups, particularly youth, and marginalised communities will be part of the assessments.

The climate change data and analysis, including the analysis of land-cover change, will inform the design of awareness and sensitization modules which explain the historical trends and future climate scenarios and their likely impact on agriculture, livestock, productivity of the landscape and likely challenges due to the confluence of climatic conditions and environmental degradation. Potential impacts on communal forests and grazing lands, protected areas and the riparian areas, wetlands and rivers will be described to ensure relevant stakeholders are aware of the challenges that lie before them and the urgent need to restore and sustainably manage these protect and human-use landscapes in order to support adaptation and to sustain livelihoods.

The data will also help design of modules specifically addressing 1) adaptation to climate change impacts on agriculture – particularly drought conditions and the use of climate information and climate smart agriculture in conjunction with agro-forestry; 2) impacts of extreme rain events and floods on wetlands, riparian and riverine ecosystems and on fisheries due to erosion and sedimentation – focusing on restoration of aquatic, wetland and riparian areas and adoption of sustainable fishing practices; 3) livestock and rangelands – focusing on adaptation and restoration measures to offset the impact of droughts and erosion from extreme rain events through soil and water conservation and re-vegetation of communal areas using catchment-based approaches; and 4) impacts of climate change on forests and biodiversity – focusing on assisted natural regeneration of both forests and wetlands and the sustainable management of forests for sustained extraction of non-timber forest products.

Activities under the component will result in raised awareness and sensitisation of stakeholders to the critical issue of ecological degradation and the need and potential for community based restoration and management of natural resources. They will revitalize grassroots organizations and will strengthen the linkages government agencies to ensure effectively and efficiently implement project interventions and those mandated by the government. Implementation of government policies at the grassroots will be strengthened by identifying and addressing gaps in policy implementation and weakness in institutions and governance arrangements. The knowledge management platforms under Component 4 will be used for policy advocacy where critical gaps are discussed with relevant stakeholders and concrete measures are proposed to address them.

Interventions under the component will be designed to be gender responsive and to address needs of the vulnerable and marginalized groups, whose representation in committees and participation in planning and design of interventions will be ensured. Gender responsive and inclusive strategies will be adopted to ensure the differential needs of women, youth, vulnerable and marginalized groups are taken into account during the design of the extension and support interventions. Gender sensitization and gender responsive programming will be included in the capacity building and institutional strengthening activities of the project, including those targeted at government staff in the extension and line departments. Separate groups for women and youth will be formed wherever feasible, so they may participate and contribute to the village level plans and equitably benefit from the project by contributing to the design of gender responsive and inclusive project interventions.

Output 1.1: Grassroots institutions strengthened for participatory and gender responsive implementation of policies and actions for climate change adaptation and management of natural resources

This output seeks to strengthen existing community based institutions, through which project interventions will be routed. These include Village Natural Resource Management Committees (VNRMCs) and sub-committees of the Village Development Committees (VDCs). Committees will be established at the district and sub-watersheds and watershed development teams will be set up at the mini-watersheds with a minimum of 40% of representation of women, to provide a mechanism for coordinated interventions. A fee structure will be instituted which ensures resource users contribute to the VNRMCs in lieu of harvesting resources from communal areas (more details are provided in Appendix 4).

Consultative dialogues with relevant stakeholders will be held to raise awareness about the challenges posed by climate change and the interaction between climate change and environmental degradation and its impacts on livelihoods. The consultations will help identify critical gaps in the implementation of mandated policies and procedures at the level of individual institutions, particularly those at the district, area and village level. Grassroots agencies will be supported in enacting by-laws, provisions and procedures for management and restoration of natural and production landscapes. Community based organisations and their representatives will be identified and clear procedures and communication protocols will be put in place to formalise and strengthen institutional coordination.

This process will be used to clarify mandates and jurisdictions of committees, groups, clubs and associations of different stakeholders at the grassroots level. Formal linkages between district level agencies and the watershed committees and teams will also be established, with relevant technical staff from the district serving on the sub-watershed committees and providing technical support to the watershed development teams. Equitable representation of women, youth, vulnerable and marginalised groups will be ensured through their representation in these institutions.

Organisational capacities and procedures in administration and financial management will be enhanced by registering CBOs with relevant district authorities, formalising responsibilities and training to office bearers and opening bank accounts of CBOs. The output will largely focus on district agencies, traditional authorities, area and village natural resource management committees (VNRMCs), farmer groups, women and youth groups in protection and management of protected and community forest areas, wetlands, riparian areas and water bodies.

Output 1.2: Grassroots institutions trained and equipped with skills to restore, monitor, manage and sustainably use climate sensitive natural resources and habitats in a gender equitable manner

Technical capacities of local institutions will be strengthened through this output by hands on training and capacity building. The focus will be on integrated management of land for climate resilient production and ecosystem function in catchments and sub-catchments. Much of this training will be done by government extension agencies and line departments supported through Output 1.3. Community based catchment area management committees will be trained in soil and water conservation measures for both farmland as well as community and forest areas. Training will cover restoration of degraded land, riparian and wetland vegetation, scrublands, pasturelands and forests. It will include nursery raising, assisted natural regeneration and protection and after-care of areas which have been restored. Provision of relevant materials and inputs for forestry, agriculture, fisheries and small livestock and poultry will be done under Component 2 to incentivise the adoption of these practices.

Farmer groups and associations will be strengthened and provided support using participatory hand on approaches, such as farmer field schools wherein lead farmers, which will include at least 30% of women, will be targeted for a series of training programmes covering climate resilient agriculture including use of climate information and low cost technologies for irrigation. Lead farmers will demonstrate these practices on their fields to support and encourage their adoption among the “follower farmers”.

The output will support fisher groups and agencies such as the Fisheries Department staff in co-management through enforcement of by-laws on sustainable gear and extraction, spatial and seasonal restrictions to facilitate breeding of important species. It will additionally support cleaning, storage, transportation and processing of catch, specifically involving women vendors and participants in the value chain, linking up with activities under Component 2 and 3.

Technical capacity of communities, CBOs, farmers, buyers and private sector enterprises will be enhanced, to identify and prepare climate-resilient business plans and project packages that are financially viable, for support from the private sector engagement facility established under Component 3. Technical and business training programs will be introduced and communities, including at least 40% of women, will be supported with business identification and the development of sustainable livelihood opportunities. This will include training and capacity building on agricultural and fisheries value chains, sustainable briquette supply chains and eco-tourism value chains, linked to private sector engagement strategy and activities as described under Component 3. Support in management of climate-resilient businesses, tailored specifically to the communities and SMEs in target communities will also be provided

Output 1.3: Training provided to Government line departments working with communities to identify, evaluate and introduce climate resilient, financially viable, gender responsive and sustainable livelihoods in their work

Limited technical capacities and lack of resources in line and extension agencies are a critical barrier which this output will address through technical training and making resources available for implementing restoration and management measures and extension activities. It will focus on both natural and production systems, the latter including agriculture, livestock and fisheries.

The output will invest in building capacities of line department and extension agencies through training programmes and strengthening outreach by facilitating logistics, establishing farmer field schools and supporting these agencies in provision of relevant materials and inputs for forestry, agriculture, fisheries and small livestock and poultry.

Capacities will be strengthened in the department of forestry and water resources on better monitoring, management, surveillance and enforcement of regulations in protected forest, riparian areas and buffers of water bodies including wetlands. It will provide technical training and make available resources for mapping and surveillance using GIS and mobile ICT based devices including training to department staff and volunteers on and provision of suitable field wear, implements for clearing digging and planting, GPS units, binoculars, cameras and low-cost drones. District level agencies will also be provided training in methods in participatory planning and forest and surveying, and on techniques for restoring degraded lands and habitats, be they forests, riparian areas, or wetlands.

Gaps in dissemination and capacities to effectively use climate information and early warning systems will be identified and addressed through targeted training of focal persons in the district local government and lead farmers in the use of Participatory Information on Climate Service in Agriculture (PISCA).

The department of agricultural extension services will be supported in the integration of Participatory Integrated Climate Services for Agriculture (PICSA) with agricultural extension through a farmer field approach using a lead/follower farmer model for scaling up[1]. Training will be provided to relevant department staff at the district level and to lead farmers to implement farmer-field based extension programmes localised to site specific conditions, crops and priorities. In addition, integration of digital solutions to provide farm and climate advisory services, such as the SmartFarm platform will be explored during the PPG process.

Gender sensitization and gender responsive programming will be included in the capacity building and institutional strengthening activities that target government staff in extension and line departments. Gender responsive and inclusive strategies will be adopted to ensure the differential needs of women, youth, vulnerable and marginalized groups are taken into account during the design of extension and support interventions.

Technical assistance will be provided to agricultural extension workers and local communities of farmers on sustainable farming techniques, climate smart agriculture, agro forestry, improved and high productivity seeds and on lending/providing risk insurance for climate resilient agricultural value chains. Farmer groups and associations will be supported in the identification of varieties of seeds that are traditionally known to be resilient to drought conditions. Training will be provided in the testing of these varieties and those available in the market, and for their propagation in farmer fields for future climate impacts.

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[1] The PICSA approach has been successfully implemented through two the M-CLIMES project supported by the GCF in Malawi. This approach is also being successfully implemented in Zimbabwe under another GCF supported project.

Component 2: Supporting adoption of climate smart and nature-based solutions for climate resilient agriculture and ecosystems

Outcome 2: Restored and climate resilient natural and production landscapes in the upper catchment of the Bua watershed

About half of the resources of the project will be committed to activities under this component. It is concerned with the physical interventions at the grassroots level which are expected to provide long term climate resilience to local communities through agro ecological transformation of the natural and production landscapes in the selected sub-watersheds. The interventions prioritised here are based on the in-depth assessments done during the design of the BRERMP and have been ground validated during the PIF preparation (details in Appendix 4). Site specific engagements and observations will be made during the PPG phase to further inform and fine tune the proposed interventions described under its three outputs. These interventions will go hand in hand with those proposed under Component 3 which seeks to establish sustainable financial models, links to value chains and provide opportunities for entrepreneurs and private sector engagement.

Plans for each sub-watershed will be drawn up through activities described under Output 4.1 which will serve as a blueprint for physical interventions. These will be implemented through village natural resource committees and farmer groups via farmer field schools. Activities under the component will also support the adoption of sustainable, climate resilient agriculture and reverse the depletion and over-extraction of forest resources and other riparian systems by improving local governance and management and incentivising restoration of both privately held and communal areas. The national small holder farmer association and district agricultural extension and fisheries staff will lead the training of farmers.

A multi-pronged approach will be used to address the challenge of biomass extraction for energy. The project will collaborate with existing initiatives to strengthen enforcement of government policies which prohibit and limit the transport of charcoal by non-registered entities. Investments will be made in adoption of innovative technologies, such as briquettes from crop residue by engaging with private sector entities. Significant investments will also be made in biomass production to meet energy requirements. This includes

woodlots, border plantations, agro-forestry, and will explore energy crops, particularly during the fallow season.

Women and girls play a major role in the collection of biomass for fuel. Many youth are engaged in charcoal production and sales of wood. Both these groups will therefore be involved directly in the activities that seek to improve access and quality of fuel for domestic use. This includes activities to increase biomass production for fuel such as woodlots and multiuse agroforestry species. These groups will be engaged in production of briquettes from available crop residue and manufacture and adoption of efficient stoves for their use in cooking.

Output 2.1: Protection and restoration works in the catchments and tributaries of Bua river and adjacent riparian areas and wetlands implemented for enhanced ecosystem services

This output will implement nature based solutions to enhance and assist natural regeneration of degraded areas on which communities depend. Re-forestation and re-introduction of indigenous species of trees, shrubs, grasses and herbaceous plants will be done and existing riparian areas and boundaries around wetlands will be protected from degradation.

Protected areas and buffers around critical habitats will be the primary focus for restoration activities. These areas will be demarcated using live markers and pillars, in consultation with local communities. Their proximity to protected habitats network will greatly improve the efficacy of assisted natural regeneration due to existing seed banks and root stock. Consultations with communities will ensure traditional knowledge, customs and practices are considered and where possible, leveraged to ensure protection of culturally important species and advice on species selection.

Soil and water conservation activities will be implemented to arrest erosion. These will combine vegetative measures and construction - depending on the severity of erosion. The village natural resource committees and sub-committees of other resource users will be engaged in these exercises. These local institutions will be encouraged to formulate and adopt by-laws that protect these eco-sensitive areas and allow habitats to recover and thereby restore ecosystem services on which communities depend. Incentives will be provided to farmers and land owners adjacent to the areas earmarked for restoration which build on and enhance the inter-dependence of communities on healthy and productive ecosystems. For example, farmers who participate in the restoration of riparian areas and boundaries of wetlands could be provided mobile solar powered pumps and targeted for receiving inputs, implements, equipment for micro-irrigation and training on cultivation of high value and climate resilient crops.

A multi-pronged approach will be used to address the challenge of high dependence on biomass for energy in rural communities and the consequent degradation of natural resources. Activities under this output will primarily target women and youth and will be undertaken to : i) increase production of high energy biomass through woodlots, grasses and cover crops and multi-purpose trees on communal lands, field boundaries and homesteads, for use for communities both for domestic and commercial/livelihood options; ii) improve efficiencies in the use of biomass through appropriate technologies such as improved cook-stoves and stoves based on briquettes or other biomass derived efficient and clean fuels; iii) increase production of sustainable biomass derived fuel products such as briquettes, bio-gas, bio-diesel and the like from available crop residue and harvesting of energy plantations an crops grown for the purpose; iv) involve the private sector, both in the production of biomass based efficient and clean fuels, and in the manufacture and distribution/sale of stoves for the widespread adoption of such fuels; and finally v) strengthen protection of forests and enforcement of restrictions on production and transportation of charcoal by unlicensed operators. The simultaneous interventions promoting alternative livelihoods such as ecotourism, and sources of biomass under Component 3 will play a key role in reducing pressure on these natural systems and are a critical strategic element of the project.

Output 2.2: Improved agricultural practices, soil and water conservation and agroforestry in production landscapes

The project sites selected have a high productivity potential in agriculture. This creates opportunities for increased productivity and income through adoption of improved land management and cropping practices among farmers and sustainable fisheries, both capture and aquaculture based. It also provides opportunities to enhance the productivity and revenue from goat rearing, piggery and poultry which are presently raised in backyards. Local institutions and groups of farmers, particularly women who are primarily engaged in cropping and livestock raising, and fishers will be the conduit for interventions which will include introduction of irrigation technologies, improved cultural practices on croplands which emphasises soil and moisture conservation; iii) land preparation; iv) post-harvest storage, packaging and processing technologies; manufacture of inputs, particularly feed for aquaculture, livestock and poultry; and vii) improved access to high quality and low-cost inputs through cooperative bargaining. Improved seeds of high yielding and climate resilient varieties, and irrigation equipment will be provided to groups to incentivise adoption of climate resilient agriculture. These will be routed through farmer field schools and cooperatives who will oversee and maintain records on the adoption of the specific interventions by their members and track impacts on yield. Specific attention will be given to commercialisation of these activities and ensuring at least 50% of the beneficiaries are women. These will leveragethe emerging private sector industry in the processing of oil seeds and soy and the linkage of farmer groups with the relevant companies to ensure a ready market and access to extension services and seeds for these crops, as described under Component 3 below.

Groups of farmers will also be incentivised to take up on field measures on cultivated areas prone to erosion and degradation. Field bunding, border planting of mut-use and fruit trees, contour trenching and terracing will be undertaken on a cost sharing basis, with farmers contributing local materials and labour. Incentives will be in the form of training in soil and water conservation techniques, farming implements and seedlings of fruit and multi-use species of trees which will be distributed through farmer field schools and the lead/following farmer approach. Farming packages will be provided as part of the training on climate resilient agriculture and will include seeds, implements and irrigation equipment. The technical training will be done by agricultural and fisheries extension workers and by companies who are promoting the use of high yielding seeds. Linkages to private suppliers of the relevant equipment and inputs will be established. A minimum of 40% of the trainees in these programmes will be women.

Agroforestry and horticulture will be taken up as per the participatory plans developed under component 4, among the communities and will be routed through local committees and sub committees as well as through any schools operating within the project area. High value horticultural crops and multi-use species will be promoted. These activities will be linked to component 3 which will support commercialisation and market development thereby ensuring access to markets and agricultural supply chains that are necessary for inputs, implements and access to markets.

Component 3: Strengthening private sector engagement for investments in economic value chains and climate resilient livelihoods

Outcome 3: Enhanced public and private sector investment to strengthen market linkages and value chains

Component 3 of the proposed project will unlock financing for climate resilient investments and private sector engagement in the project area. This Component will design and operationalize sustainable, and climate resilient livelihood improvement focused and private sector driven innovative business and engagement models under UNDP's existing Growth Accelerator (GA 2.0) program. Specifically, funding windows will be launched for private sector engagement and investment under GA 2.0 program for this project's activities under component 3, that would offer technical assistance, capacity building and co-investments for Micro, Small and Medium

Enterprises (MSMEs) and community cooperatives to partner with communities in this project's target districts of Mchinji and Kasungu and develop profitable value chains and investments.

In addition, the project will also work with larger private sector companies on building commercial agricultural/food processing value chains and eco-tourism ventures in the project's target districts of Mchinji, Kasungu and Nkhotakota. Essentially, this component of the project will focus on i) climate resilient agricultural value chain development for staple food grains and high value products ii) sustainable biomass briquette production from waste agricultural biomass iii) sustainable business practices of production and marketing of non-timber forest products (NTFP). iv) sustainable ecotourism ventures, and v) access to microfinance, insurance and social protection to further catalyse climate-resilient business development. Based on primary research via stakeholder consultations and field visits and secondary research, interventions under this component will be focused on;

Agriculture and food processing value chains: Variety of crops are grown in the target districts: staple crop production (**rice**), high-value agricultural crop production (**groundnuts, soyabean, sunflower, macadamia**), horticulture (**mangoes, tomatoes, Irish potatoes**), agro-forestry based products (**moringa**) and Non-timber Forestry Products (**honey**) all of which will be promoted under Output 2.2. Focus on agriculture will not just provide climate resilient livelihood and income to local communities, but also opportunities for private sector investments. This component will also aim to collaborate with ongoing programs by other donors such as USAID's 'Feed the future' project and Bua river ecosystem restoration project of World Bank.

Fisheries: Pond fisheries and river fisheries both are existing practices in the target districts. Tilipia and other local fish varieties are consumed by local communities and can also be marketed. The focus of interventions under this component would be on investments into freshwater fisheries, processing (fish drying and smoking), value chain and cold chain development of multispecies fisheries (focus only on local varieties of fish). The component will also explore the possibility and assess viability of shrimp and prawn farming in the target areas.

Ecotourism: Kasungu, Mchinji and Nkhotakota are geographically well endowed with national parks and reserve forests. Kasungu National Park is the second largest national park in Malawi with more than 112 mammals, 370 birds, 47 reptiles, 34 amphibians, and 31 fish species as part of its ecosystem. Implementation of ecotourism interventions via private sector investments can lead to increased economic value of the ecosystem that protected areas provide to local communities, thereby offering alternative livelihoods and increasing their incentive to protect these natural ecosystems. Various activities like hiking, bird watching, safari, river rafting, will be setup together with private sector partners in the mountain ranges and forest ecosystems, while employing local communities in the delivery of ecotourism services. Local communities can also earn livelihoods through home stays (hospitality and lodging whereby visitors share a residence with a local family), and providing immersion experience in local cultures, etc.

Sustainable Biomass Briquette Production: Firewood and charcoal are an important part for Malawian rural households as they lack access to modern and cleaner sources of energy for cooking and heating. Dependence on firewood is a major cause of deforestation in the Bua river ecosystem, while burning of agricultural waste biomass (as a practice to clear the land for next sowing season) is a key source of air pollution and fire hazard in the target districts which also leads to land degradation. Production and marketing of sustainable biomass briquettes can provide high energy dense, low emission alternative fuel source for these communities, while reducing their dependence on firewood and the need to burn waste agricultural biomass. Currently, there is limited formalized private sector investment in the biomass briquette production value chain in the target districts, and this component aims to address that issue along with training and sensitisation of communities in the production and use of energy-saving cooking stoves.

Output 3.1: A private sector engagement facility established with new funding windows under the UNDP Growth Accelerator Platform.

This output will focus on establishing a private sector engagement facility to catalyse private sector investments in climate resilient livelihood and enterprises. Private sector engagement facility will be set up under the existing challenge fund mechanism of UNDP Malawi's Growth Accelerator program (GA 2.0) for MSMEs (Figure 3). The fund will be used for strengthening resilience of existing **climate resilient agriculture and fisheries value chain, sustainable briquette production, eco-tourism value chain, access to finance, insurance** and **social protection measures**. GEF/LDCF resources will be deployed only for provision of TA, training and capacity building for private sector and community engagement as described in this section, with capital grants (with matching resources invested by private sector partners) being provided from UNDP co-finance. The activities mentioned below will provide technical assistance for the design and operationalisation of the private sector engagement facility under GA 2.0 program. The program's service provider (fund manager – already engaged via a competitive tendering process) will be engaged as a Responsible Party (RP) by the project for launching challenge fund windows, selection of private sector (MSMEs, cooperatives) partners, disbursement of capital grants, portfolio management and monitoring and evaluation activities.

A competitive process of 4 challenge fund windows of call for proposals for selection of private sector entities for partnership will be launched under the existing GA 2.0 for this project, which will aim to receive applications from the private sector requesting for TA, access to markets and funding to develop and implement business models in the 2 target districts with an aim to co-invest in and build profitable business ventures that also have the potential to improve climate resilient livelihoods of rural communities. These challenge fund windows will primarily be for-profit entities, with an aim to engage a significant number of Micro, Small and Medium sized Enterprises (MSMEs), Banks, Microfinance Institutions (MFIs), and insurance companies under this output. Private sector enterprises that will be selected for support under this output will be subject to Environmental and Social (E&S) safeguard criteria and also periodic E&S audits to ensure compliance with UNDP SES policy, and this feature is already embedded in UNDP GA 2.0 program's methodology. This output will engage in community mobilisation and setting up a formal ecosystem for MSME's and communities.

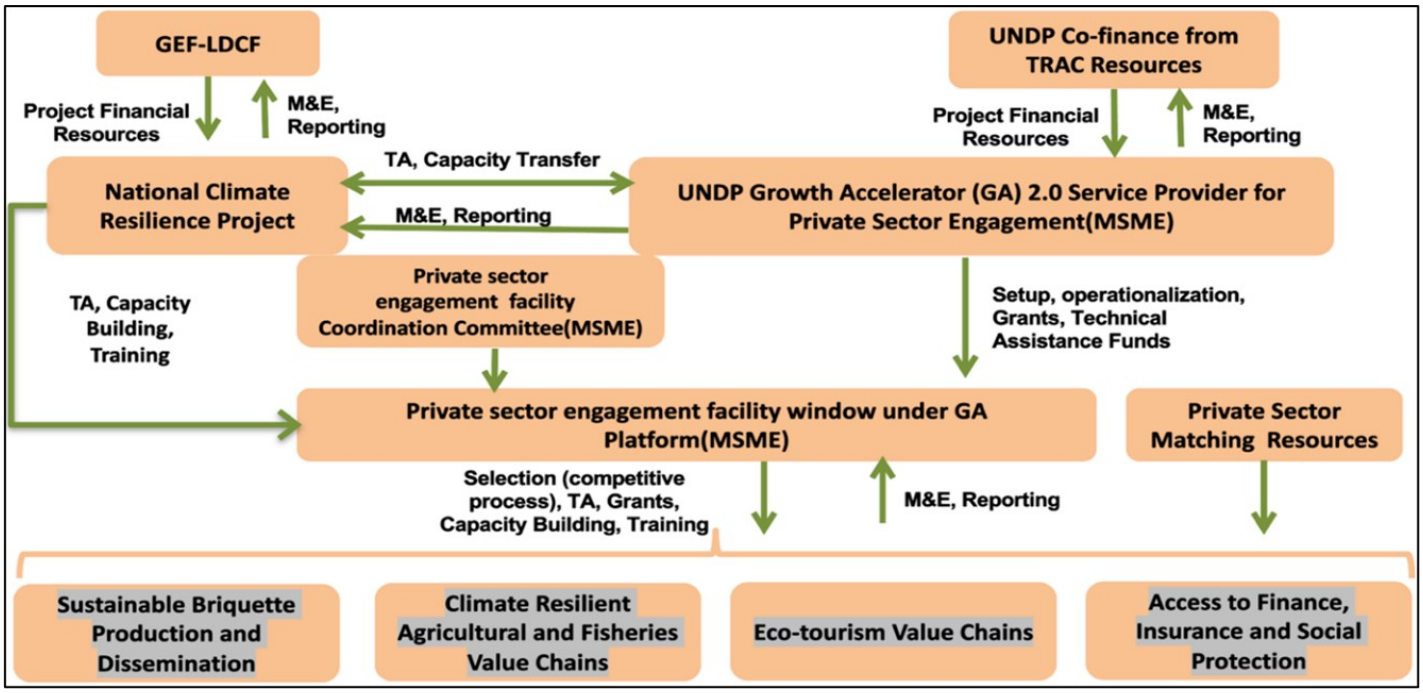


Figure 3: Proposed growth accelerator engagement model

Engagement with government is critical to ensure enabling policy and regulatory environment for private sector investments into value chain productivity enhancement activities as proposed under this component. Government partners (relevant ministries) will be part of the project's coordination committee for private

sector engagement (as shown in the private sector engagement model under Output 3.1), and they will also be engaged via design and investments of blended finance instruments via local financial institutions and NCCF.

Technology and business model innovations will be at the core of private sector (MSMEs, cooperatives, larger commodity off-takers/corporations) selection criteria for support from project resources, since innovation as a criteria has been built into UNDP Growth Accelerator's existing evaluation and selection criteria.

The project will also build on the experience of ongoing GEF7 Transform project by using learnings/best practices, and identifying innovative private sector enterprises that were more successful in enhancing value chain productivity in Lake Chilwa basin, which could then be replicated in Bua river basin as well.

Output 3.2: Partnerships established between private sector, communities and other stakeholders with specific attention to women owned and operated businesses

As a part of output 3.2, TA and capacity building to communities and private sector entities (MSMEs, cooperatives) via private sector engagement facilities will be provided on sustainable briquette production, climate-resilient agricultural and fisheries value chain development (which includes high-value agricultural products, staple grains, fisheries and aquaculture which will be supported under Outptu 2.2), ecotourism and access to finance. This partnership will be established between communities/farmers on the one side with 50% beneficiaries being women (community mobilization etc.) and extension services, CBOs, buyers and private sector enterprises (MSMEs and cooperatives) selected via the GA 2.0 challenge fund windows (as described in Output 3.1 above). The focus will also be on the development of a market information hub and the introduction of technologies that will increase access to and strengthen high value markets. Support to be provided to selected private sector enterprises selected via GA 2.0 challenge fund modality are: (i) Technical Assistance (TA), training, capacity building, business development sup-port, community mobilization/ engagement support (from GEF/LDCF budget), (ii) Additional (optional) TA on generic business acceleration support and training (from GA 2.0 budget), (iii) Co-investment (as grants from co-finance from UNDP TRAC resources), (iv) Matching funds from private sector enterprises, (v)provision of start-up inputs (such as beekeeping equipment) to community members, and (vi) development of partnerships of community members with local suppliers and value chain service providers (through technical advisory services).

The focus will be on collaboration with different existing cooperatives to increase the productivity of agriculture and allied activities, as well as provision of equipment for drip irrigation, beekeeping, solar water pumping, solar dryers for fish etc. Communities will also be provided with storage facilities via community mobilization and farmers cooperatives, while also training them on collective marketing of their produce for a fair price.The provision of equipment/energy efficient technologies from project resources will be only for pilot/demonstration purposes and an access to finance mechanism (via microfinance etc.) will be developed via private sector engagement and access to finance interventions described below.

This output will also work closely with Malawi Seed Industry Development Project (MSIDP), the Legume Development Trust (LDT) of the African Institute of Corporate Citizenship on training and marketing of oil production.

Output 3.3: Partnerships established with larger commercial agriculture, agro-processing, and ecotourism corporations for climate resilient livelihoods

The project will also play the role of a neutral broker between communities and larger companies in the project's target districts, directly supporting the commercialisation and financial viability of interventions proposed under Component 2. The project will identify larger private sector entities which are already established in processing of agricultural products and ecotourism businesses. These larger commercial corporations will not be provided with capital grants from UNDP co-finance, but only technical assistance for community mobilization and to enable them to build relationships with smallholder/local communities in the project's target districts.

Partnerships with larger corporations will also provide smallholder farmers with access to high productivity seeds, farming techniques and technologies and the development of a systemic ecosystem of access to markets (via guaranteed purchase of agricultural outputs and processed products) and access to finance for smallholder farmers (Figure 4). A few domestic corporations that operate in the agricultural value chains in Bua river ecosystem, such as **Madalitso Food production (rice, groundnuts, maize, soybeans) Malawi Mangoes (mangoes and other fruits)**, and **Nutrifoods and beverages (moringa and other health foods)** which operate near the selected project locations. Similarly, larger international organisations such as **Pyxus International** work with groundnut, soyabean, macadamia farmers and setup large groundnut oil processing units in Lilongwe and other areas. These companies have an existing setup to process food and sell it domestically and/or export these commodities. Collaboration between smallholder farmers and these corporations will enable access to climate resilient seeds, technologies, and ready access to markets and finance, thereby building sustainable agricultural value chains that are resilient and adaptive to climate change.

Similar engagement interventions will be implemented between larger tourism operators/companies in Malawi (such as members of Malawi Tourism Council), and local communities for setting up of newer ecotourism activities and infrastructure in the project's target districts, thereby enabling newer economic activities and alternative livelihoods to communities. Private sector enterprises that will be selected for support under this output will be subject to Environmental and Social (E&S) safeguard criteria and also periodic E&S audits to ensure compliance with UNDP SES policy.

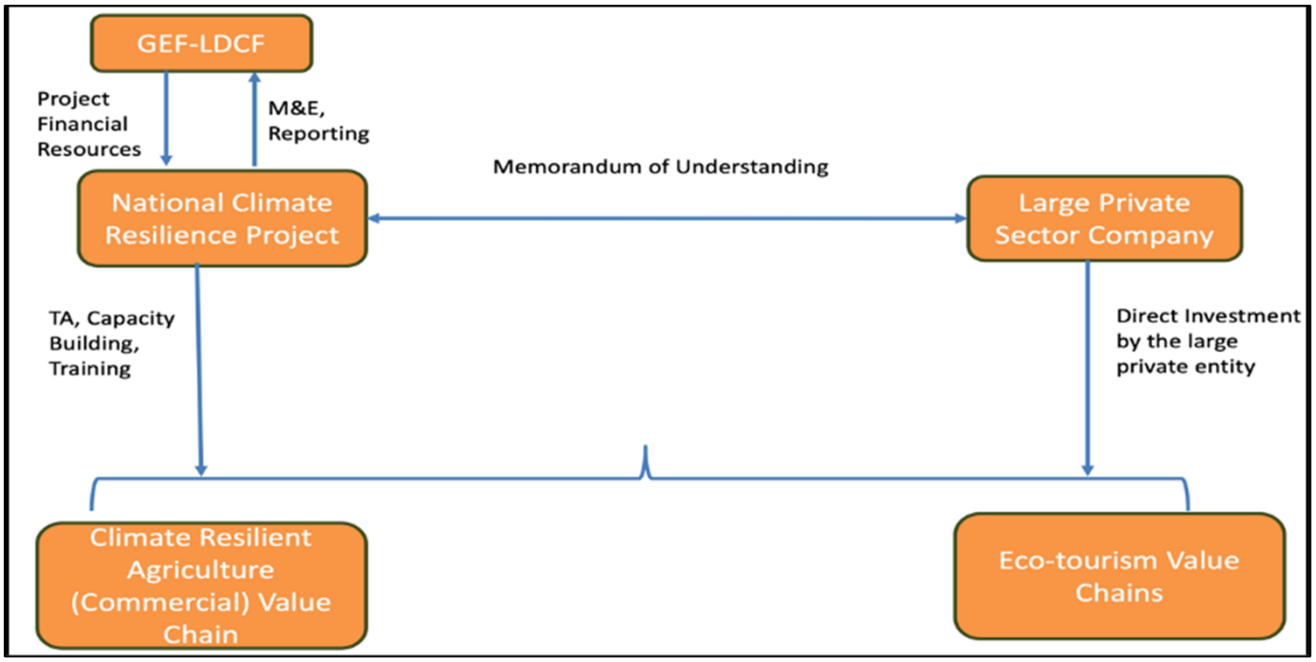


Figure 4: Large company private sector investment flow chart

Output 3.4: Technical assistance provided to the Malawi National Climate Change Fund (NCCF) to integrate and implement the private sector engagement facility

A National Climate Change Fund (NCCF) has been established, with support from UNDP Malawi, under the Ministry of Environment, Government of Malawi. The aim of NCCF is to mobilize capital for both climate change mitigation and adaptation investments in Malawi, from both domestic and international sources. A domestic carbon levy has been imposed on certain industry sectors and proceeds of this levy is being negotiated as one of the domestic sources of capital for NCCF. Key thematic areas of investments for NCCF are climate change adaptation, climate change mitigation, training, capacity building, private sector incentives and investments (such as PPP model) and so on.

Learnings from this project's Component 3 will be applied to NCCF and will be scaled-up to national level in a manner that ensures that private sector engagement and livelihood activities implemented under this project will sustained. The project will provide technical assistance to NCCF to setup a mechanism and process to absorb assets and activities implemented under this Component 3 (Outputs 3.1, 3.2, 3.3 described above) into NCCF towards the end of this project, and setup systems, processes and capitalization for national-level scale-up of these investments and activities.

In addition, towards the end of implementation duration, the project will engage with UNDP Growth Accelerator program to explore the possibility of designing blended finance instruments (credit guarantees, first loss guarantees) in partnership with local financial institutions to finance scale-up of MSMEs and other private sector enterprises supported under Output 3.2 and Output 3.3 of this project.

Component 4: Participatory planning and knowledge management for sustainability

Outcome 4: Effective and gender inclusive planning, knowledge sharing and adaptive learning for sustained resilience to climate change

Knowledge management are a critical part of the project. The project will generate detailed and spatially explicit data using people centred participatory approaches. It will employ innovative technologies such as participatory GIS using low cost drones and geo-referenced, high-resolution aerial photographs to help communities visualise and mark out critical information such as tenure ownership, access and state of the resource. These will be combined with participatory survey methods, citizen sensing, focal group discussion and key informant interviews to gather socio-economic data.

Detailed surveys covering aspects of engineering for construction related interventions, site assessment and assessments of environmental conditions and ecological status will be conducted. This information will be analysed and using the BRERMP, will be used to create detailed plans, budgets and work-schedules for the project. Gender mainstreaming and inclusion of priorities of youth, vulnerable groups and any marginalised groups will be ensured at all stages of the assessments. All the data collected will be appended to the existing data repository of the BRERMP, and if needed, submitted to existing data services such as those hosted by the FAO and OCHA.

The knowledge management strategy further entails participation in existing multi-stakeholder and knowledge sharing platforms at different levels. Additional platforms will be created, particularly at the level of the sub-watersheds. These platforms will be used to learn from other initiatives and establish partnerships and collaborations where possible. Lessons from the project will be showcased during sharing events to encourage cross learning and transparency. This sharing of ideas and lessons will take place at the national, regional and in international venues. The project will facilitate participation from among the stakeholders in these events and will collaborate with technical experts and agencies to conduct independent evaluations of project impacts.

The extensive data gathered during the planning phase of the project will serve as a robust and quantitative baseline against which project impacts will be measured. A scientifically rigorous framework will be developed to use this baseline to conduct regular multi-disciplinary impact analysis covering socio-economic, bio-physical and ecological impacts of project interventions.

Output 4.1: Comprehensive multi-disciplinary baselines established in sub-watersheds including participatory, gender-inclusive work-plans with detailed technical designs

Detailed restoration plans will be developed by the VNRMC of each of the 28 villages falling under the four sub-watersheds selected for project interventions. These plans will be designed for each of the micro and

mini-watershed that subdivide the selected sub-watersheds (details in Appendix 4). The plans will be based on a multidisciplinary approach comprising of a bio-physical and ecological assessment of the status of the catchment and the likely impacts of climate change based on an assessment of downscaled climate datasets and projections and historical trends in indices such as primary production, drought severity and vegetation for the proposed sites[1]. This will be coupled with a socio-economic survey and market analysis. This information is critical as it will inform the strategy to restore critical goods and services that support climate change adaptation[2], food and water security, water quality, energy resources, and sustainable livelihoods of the most rural communities in Malawi[3] as well as critical biodiversity[4] and hydrologic services[5] including flood control and sustained stream flow.

Consulting and engagements with community member will be held to document and incorporate relevant indigenous knowledge, cultural and traditional practices in restoration and management strategies. The assessments will include extensive mapping using GPS systems and topographical survey methods. Remotely sensed data and drone based surveys will also be employed where appropriate. Other innovative survey tools and digital ICT based technologies such as phone/tablet based forms and schedules will be employed. Participatory methods will be used extensively to capture data from focal groups and key informers. Women and vulnerable groups such as elderly, youth and people with disabilities will be consulted. A livelihood analysis will be done to develop a clear set of adaptation needs, priorities and actions for most important livelihoods in each micro-watershed. This will be accompanied by a market analysis which explores the potential to exploit and enhance value chains to improve economic returns from existing products.

The output will result in the generation of ground-up participatory zonation maps and work-plans by local institutions, facilitated by relevant extension and line department staff. Technical surveys, designs of infrastructure such as gabions and check dams and diversions will further develop the community based work-plans, incorporating necessary environmental and social safeguards. The participatory exercises and engineering surveys will employ modern spatial technologies including drones, both to facilitate the participatory mapping, but perhaps more importantly, to extract hydrologic boundaries and drainage lines using photogrammetry.

Habitat assessments and surveys of bio-diversity and critical environmental conditions will be conducted for each of the identified micro-watersheds. The surveys will build a baseline database on i) land use and land cover using remotely sensed images from satellites, and if possible drones; ii) species composition - particularly of plants and fish; iii) water quality using hand held sensors to measure physiochemical variables; and iv) soil texture and quality using representative samples from crop fields. This database will add to the information collected under the BRERMP.

Output 4.2: Platforms and multi-channel communications for knowledge sharing, uptake of lessons, awareness and behavioural change established, involving both men and women

This output will facilitate knowledge sharing at multiple levels and dissemination of lessons to effect behavioural change, ensure awareness and sensitisation on the project and its activities among communities. The outputs will capture indigenous knowledge, lessons and experiences from other relevant projects and initiatives. It will additionally provide a platform for the project to share its own experiences and participate in relevant fora.

The component will support the dissemination and communication of policies, best practices and lessons from the project. It will ensure cross-learning between project sites through exchange visits and excursions of the local institutions and groups. The output will use multiple channels for communication to reach all stakeholders including women and those who are illiterate or semi-literate. This will include community radio stations, mobile phones, social media and private broadcasting through radio and television. A dedicated

website will be created for the project to share updated information about its activities and important lessons and experiences. The site will build on the website created for the TRANSFORM project.

Consultative workshops will be held before the start of the wet season at the district headquarters ahead of the critical project interventions. These workshops will be attended by office bearers from the sub-watershed committees, local NGOs and relevant district authorities. The workshops will include presentations of the watershed development plans for the year by each committee and discussion on the relevant resources to be allocated for the proposed interventions. Lessons learned during the project and those from participating institutions will be shared during these workshops along with reports of work done in the previous season.

Project level workshops will be held annually at the national level. Where possible, these will be included in global environmental events celebrated in Lilongwe, such as world environment day, to increase the visibility of the project. The project teams will be encouraged to participate in other events held nationally or regionally, ensuring that sub-national stakeholders are provided an opportunity to attend these events to showcase the project and to learn from experiences of other agencies and programmes.

The project team will also be facilitated to participate in regional and global events to help share and replicate project strategies and lessons learned in other countries. These include South-South and global platforms such as Africa Solutions Platform, the UN South-South Galaxy knowledge sharing platform, the Global Resilience Partnership, Alliance for Hydromet Development, World Adaptation

Science Programme, the Race to Resilience programme, the Africa Climate Week, the Community Based Adaptation Conference and PANORAMA.

Output 4.3: Plans developed for long term, self-reliant technical, institutional and financial sustainability

Each VNRMC will develop a comprehensive plan for long term sustainability of interventions under component 2. Each plan will be designed to leverage technical and institutional support from extension services and line departments and will build on the baseline studies conducted under output 4.1 and lessons and potential collaborations identified under output 4.2. The plans will be updated on an annual basis and will be closely linked to the institutional structures and reporting mechanisms defined under Component 1. Each plan will include a revenue model which combines resources available from on-going projects, programmes and schemes with a fee structure for user groups and in-kind contributions from communities in terms of labour and materials as described under Output 1.1.

The figures below illustrate the overall institutional set-up of the project, and the second one is an initial illustration of how different actors will be part of the project implementation to foster a whole-of-society approach (to be further elaborated during PPG).

Project Organisation Structure

Project Board/Steering Committee		
Development Partners	Project Executive	Senior Beneficiary
UNDP (RR/DRR)	Ministry of Natural Resources and Cliamte Change	Ministry of Natural Resources and Cliamte Change
		Ministry of Agriculture
		Ministry of Gender, Commnity Development and Social Welfare
		Ministry of Water and Sanitation
		Ministry of Tourism
		Ministry of Energy

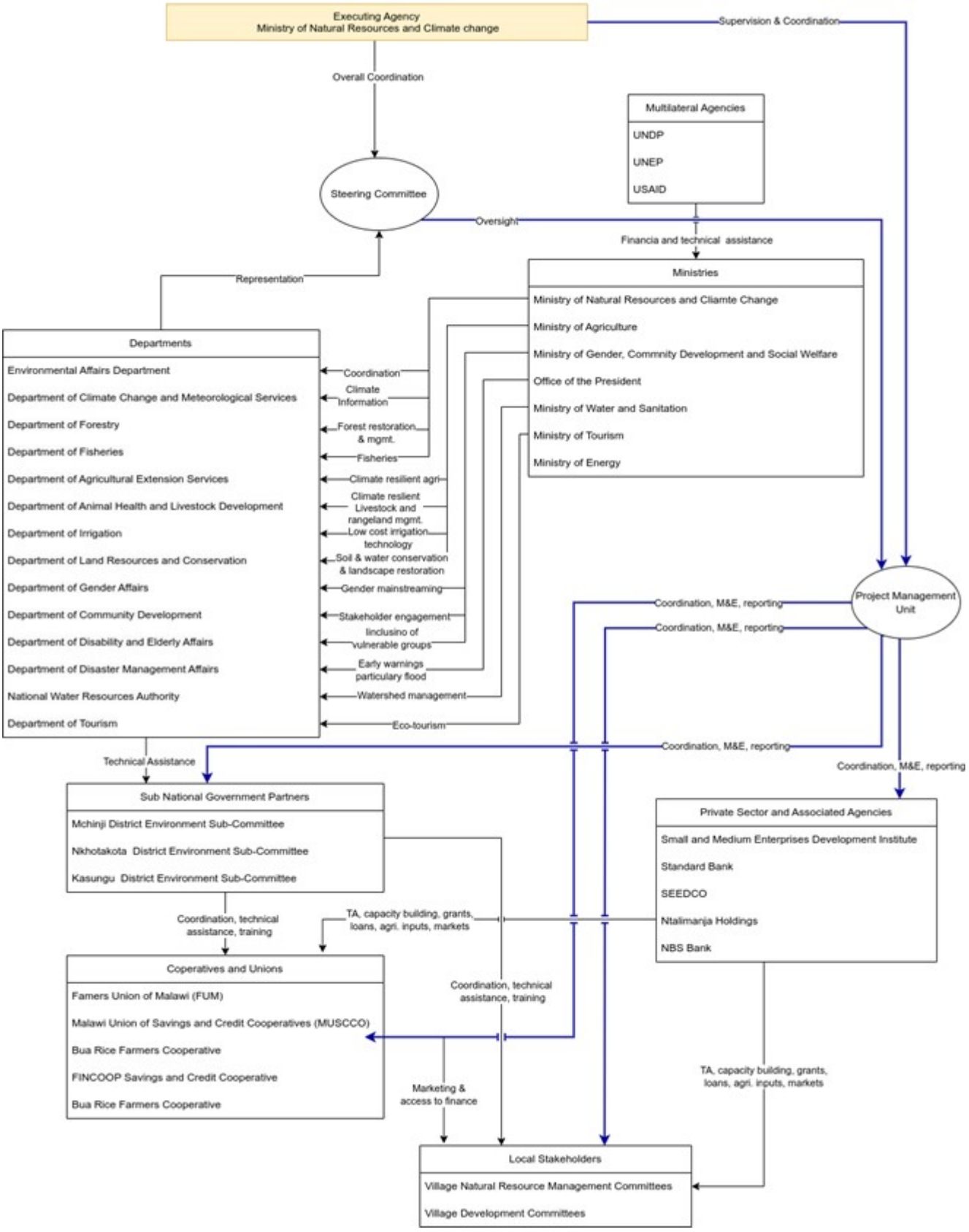
UNDP Project Assurance
Team Lead
Programme Analyst
RBM Specialist

Technical Advisory Group
Environmental Affairs Department
Department of Climate Change and Meteorological Services
Department of Forestry
Department of Fisheries
Department of Agricultural Extension Services
Department of Animal Health and Livestock Development
Department of Irrigation
Department of Land Resources and Conservation
Department of Gender Affairs
Department of Community Development
Department of Disability and Elderly Affairs
Department of Disaster Management Affairs
National Water Resources Authority
Department of Tourism

Implementing Partner
Environmental Affairs Department

Project Management Unit
Project Manager
Project Technical Officer
M&E Officer
Finance Officer
Community Engagement, Gender and Safeguards Specialist
M&E Officer

Responsible Parties
Ministry of Natural Resources and Cliamte Change
Ministry of Agriculture



[1] The following link points to the folder containing downscaled climate projections for Kasunugu: https://drive.google.com/drive/folders/1IIUwEmoRpnk2mGKVTxHJ4OUjwQJxBUIf?usp=drive_link.

The following link points to trends from the past two decades to bio-physical datasets including precipitation, primary productivity and climate vulnerability indices published by the Famine Early Warning Systesms Network (FLDAS) and TerraClimate projects. The folder also contains land cover data for 2021 and updated digital elevation models for Malawi: https://drive.google.com/drive/folders/1zR4QHKF6u9t481-0C5L2MO_KzdYkdWcZ?usp=drive_link

[2] Walter Leal Filho et al., 'The Influence of Ecosystems Services Depletion to Climate Change Adaptation Efforts in Africa', Science of The Total Environment 779 (2021): 146414, https://www.sciencedirect.com/science/article/pii/S0048969721014820.

[3] World Bank, 'World Bank Climate Change Knowledge Portal - Malwi', 2021, https://climateknowledgeportal.worldbank.org/country/malawi.

[4] Dejene W. Sintayehu, 'Impact of Climate Change on Biodiversity and Associated Key Ecosystem Services in Africa: A Systematic Review', Ecosystem Health and Sustainability 4, no. 9 (2 September 2018): 225–39, https://doi.org/10.1080/20964129.2018.1530054.

[5] Laetitia Pettinotti, Amaia de Ayala, and Elena Ojea, 'Benefits from Water Related Ecosystem Services in Africa and Climate Change', Ecological Economics 149 (2018): 294–305, https://www.sciencedirect.com/science/article/pii/S0921800917311072.

Coordination and Cooperation with Ongoing Initiatives and Project.

Does the GEF Agency expect to play an execution role on this project?

No

If so, please describe that role here. Also, please add a short explanation to describe cooperation with ongoing initiatives and projects, including potential for co-location and/or sharing of expertise/staffing

The implementing partner for shall be the Environmental Affairs Department, in the Ministry of Natural Resources and Climate Change. However, the Malawi Government, through the Environmental Affairs has indicated that it will need some execution support in some limited, specific areas to enable timely implementation of activities and access to value-for-money goods and services on the international market. For instance, the Malawi Government has recently been facing shortages in foreign exchange. During PPG stage, a detailed assessment of capacity limitations and other constraints will be assessed, including any potential need for support, and which entity is best placed to provide such execution support. These will be done in close consultation with the GEF Secretariat.

Core Indicators

Explain the methodological approach and underlying logic to justify target levels for Core and Sub-Indicators (max. 250 words, approximately 1/2 page)

META INFORMATION – LDCF

LDCF **true**	SCCF-B (Window B) on technology transfer **false**	SCCF-A (Window-A) on climate Change adaptation **false**
Is this project LDCF SCCF challenge program?		

false

This Project involves at least one small island developing State(SIDS).

false

This Project involves at least one fragile and conflict affected state.

false

This Project will provide direct adaptation benefits to the private sector.

true

This Project is explicitly related to the formulation and/or implementation of national adaptation plans (NAPs).

false

This project will collaborate with activities begin supported by other adaptation funds. If yes, please select below

Green Climate Fund	Adaptation Fund	Pilot Program for Climate Resilience (PPCR)
true	**false**	**false**

This Project has an urban focus.

false

This project will directly engage local communities in project design and implementation

true

This project will support South-South knowledge exchange

true

This Project covers the following sector(s)[the total should be 100%]: *

Agriculture	40.00%
Nature-based management	20.00%
Climate information services	5.00%
Coastal zone management	0.00%
Water resources management	10.00%
Disaster risk management	0.00%
Other infrastructure	0.00%
Tourism	5.00%
Health	0.00%
Other (Please specify comments) (Pvt. Sector engagement in scaling up and sustaining climate resilient livelihoods and adoption of technologies)	20.00%
Total	100.00%

This Project targets the following Climate change Exacerbated/introduced challenges:*

Sea level rise	Change in mean temperature	Increased climatic variability	Natural hazards
false	**true**	**true**	**true**

Land degradation	Coastal and/or Coral reef degradation	Groundwater quality/quantity
true	**false**	**false**

CORE INDICATORS – LDCF

	Total	Male	Female	% for Women
CORE INDICATOR 1				56.00%

Total number of direct beneficiaries	105,000	46,200.00	58,800.00	
CORE INDICATOR 2 (a) Area of land managed for climate resilience (ha) (b) Coastal and marine area managed for climate resilience (ha)	 108,315.00 0.00			
CORE INDICATOR 3 Number of policies/plans/ frameworks/institutions for to strengthen climate adaptation	32.00			
CORE INDICATOR 4 Number of people trained or with awareness raised	1740	870.00	870.00	50.00%
CORE INDICATOR 5 Number of private sector enterprises engaged in climate change adaptation and resilience action	6.00			

Risks to Project Preparation and Implementation

Summarize risks that might affect the project preparation and implementation phases and what are the mitigation strategies the project preparation process will undertake to address these (e.g. what alternatives may be considered during project preparation-such as in terms of consultations, role and choice of counterparts, delivery mechanisms, locations in country, flexible design elements, etc.). Identify any of the risks listed below that would call in question the viability of the project during its implementation. Please describe any possible mitigation measures needed. (The risks associated with project design and Theory of Change should be described in the "Project description" section above). The risk rating should reflect the overall risk to project outcomes considering the country setting and ambition of the project. The rating scale is: High, Substantial, Moderate, Low.

Risk Categories	Rating	Comments
Climate	Moderate	Some of the measures, particularly during the initial stages of the project are vulnerable to droughts, floods or extreme weather events. This includes natural regeneration and survival of plantations and afforestation and measures in riparian zones, infrastructure for soil and water conservation such as small dams or gabions or for small scale irrigation in agriculture or aquaculture ponds as well as interventions agriculture itself such as alternative varieties of crops. The PPG phase will seek to ensure the timings of interventions are in the appropriate season and take into account available forecasts and advisories. Back up measures such as arrangements for watering, protection of structures through diversions and advanced stocking of

		materials will be required to mitigate some of the impacts.
Environment and Social	Moderate	Environmental and ecological: The project area includes ecologically sensitive habitats of endangered species. Project site selection was done specifically to reduce areas which are so heavily degraded that their restoration will be unviable in the scope of this project. However, there will be some sites which are heavily degraded and lack the ecological integrity necessary for nature-based solutions (for example, natural seed banks may be depleted). Invasive alien species exist in many of the sites which complicates restoration. This may result in the project sites having varying levels of recovery as the project progresses. The project will therefore need to develop site specific restoration strategies. Social: The tenure system and weakness of local institutions are two social issues which are discussed in the section on barriers. Both these can delay the roll out of proposed project interventions as overcoming these barriers will require significant investment in community mobilization and awareness raising. It is to be noted, however, that traditional knowledge and practices are compatible with the proposed project. Gender: There are existing cultural biases which discriminate against women. These include ownership of assets, inheritance and representation in institutions. Customary roles of women make them more vulnerable to impacts of climate change by affecting availability of critical resources such as water, fuel and fodder. There is a risk of women being excluded from benefiting equally from the project or

		in the project's design failing to address gender differentiated needs of the community.
Political and Governance	Low	The governance of natural resources and enforcement of regulations which protect natural habitats is weak, particularly at the level of communities. This could jeopardize project interventions in afforestation and restoration of riparian areas and water bodies. Extensive capacity building and strengthening of local institutions will be done to overcome these risks/barriers.
Macro-economic	Low	Limited development of the private sector, particularly in the rural areas constrains the avenues for climate resilient livelihoods which are not directly dependent on natural resources. In the absence of these alternative livelihood's, there is a risk of over-exploitation and unsustainable use of resources, including in areas where project interventions are implemented.
Strategies and Policies	Low	National level policies and strategies in Malawi are often not implemented in full at the grassroots owing to constraints in capacities of sub-national agencies and their extension and field staff. The project will be reliant on these sub-national agencies and their line and extension staff as the conduit for most of the interventions. While the project will invest substantively in strengthening the implementation of these policies at the grassroots, this remains a low risk to the interventions proposed.
Technical design of project or program	Low	The programme is designed based on comprehensive engagement with government agencies at all levels during the stakeholder engagement process. Field visits to project sites were also made to ground-verify the

		project strategy and technical design. The PPG phase will build on these initial consultations and substantively increase the level of ground-verified information to ensure the robust project design.
Institutional capacity for implementation and sustainability	Low	Technical capacities in Malawi at the level of the sub-national level may be inadequate for the implementation of project and its sustainability. This is a recognized barrier, and the project strategy includes measures to strengthen these capacities and also the linkages between institutions at various levels of government and with local institutions at the community level.
Fiduciary: Financial Management and Procurement	Low	The Government of Malawi has strong mechanisms and protocols for effective financial management and procurement at the national and sub-national level. This project will therefore be implemented through a Nationally Implementation Modality. UNDP, as the accredited agency, will provide oversight over financial management and procurement by ensuring the relevant government agencies have cleared the require micro-assessments. Where necessary, UNDP will support procurement and financial oversight, based on requests for the same from the relevant government focal points.
Stakeholder Engagement	Low	Extensive stakeholder engagements were undertaken to inform the development of this PIF. The PPG phase of the project will see further and more extensive stakeholder engagements. There were no constraints faced during the engagements. Both government agencies and communities participated enthusiastically in the engagements and there were no

		restrictions on consultations with women or with marginalized groups.
Other		
Financial Risks for NGI projects		
Overall Risk Rating	Moderate	The overall risk rating for the project is moderate on account of climate and environmental and social risks.

C. ALIGNMENT WITH GEF-8 PROGRAMMING STRATEGIES AND COUNTRY/REGIONAL PRIORITIES

Describe how the proposed interventions are aligned with GEF- 8 programming strategies and country and regional priorities, including how these country strategies and plans relate to the multilateral environmental agreements.

Confirm if any country policies that might contradict with intended outcomes of the project have been identified, and how the project will address this.

For projects aiming to generate biodiversity benefits (regardless of what the source of the resources is - i.e., BD, CC or LD), please identify which of the 23 targets of the Kunming-Montreal Global Biodiversity Framework the project contributes to and explain how. (max. 500 words, approximately 1 page)

The project is closely aligned with the GEF-8 LDCF programming strategies and the country regional priorities.

Alignment with GEF-8 LDCF programming directions and strategy

The project activities align with the programming directions and strategy of the LDCF that call to *support vulnerable countries in adopting integrated approaches to tackle multiple climate hazards, implement comprehensive and innovative solutions at the nexus of land, food and water, and build long-term climate resilience at the systems level*. The trans-disciplinary interventions of the project fall under the four main themes of the LDCF: (1) Agriculture, Food Security, and Health, (2) Water, (3) Nature-Based Solutions, and (4) Early Warning and Climate Information Systems. Project activities will focus on building capacities and increasing knowledge of multiple stakeholders from the community level – men, women and youth – to those in governance and the private sector ensuring a *whole-of-society* approach.

The project seeks to *support adaptation in the context of food security and health, aligned with the concept of agroecological transformation,* through promoting diversified cropping systems and improved agricultural management techniques that will help increase productivity and by establishing robust agro-based value chains thereby supporting a resilient economy. Agriculture is a mainstay of communities in the project area and activities leading to diversified yields and assured income sources will help secure livelihoods and sustenance of rural communities and food security which have been adversely affected by climate change related alternations in rainfall patterns, increased temperatures and droughts. Project activities that are targeted to improve riverine and aquatic habitats recognize the *importance of freshwater quality and quantity* in supporting the agricultural base in the region and livelihoods dependant on fishery resources. By restoring catchment areas, the project will help ameliorate the generation of floods during extreme events and will improve ground water recharge and streamflow during the dry season which sustain both agriculture as well as ecosystems. Moreover, the watershed approach proposed in this project ensures hydrologic connectivity and cumulative impacts through *integrated water resources management interventions that mainstream climate resilience*. *Natured-based solutions, a cornerstone of the GEF's adaptation portfolio*, are focal to the strategy employed in this project toward building the resilience of local communities, conserving and protecting biodiversity and thus help in climate change mitigation.

The project has adopted an integrated, community centred approach using well established methods to tackle the multiple drivers of climate vulnerability in Malawi. This is well aligned with the GEF overall bottom-up approach and the LDCF adaptation strategy focus on agriculture, food security and health, water, climate information services, and nature-based solutions.

The project will result in sustainable use of natural resources, to sustain cropping and supporting the adoption of multiple crops including agroforestry and horticulture and oil-seeds for local markets which will open up income streams for farmers. This approach deviates from efforts that focus only on subsistence farming using traditional cropping patterns. The proposed approach also leverages available resources, particularly sustainable water harvesting for irrigation, crop residue for fuel and manure for fertilizer and uses climate information to support agricultural decisions. An alternative approach would be to target private estates and landowners for large investments in irrigation systems. However, this would not reach the bulk of the population. Further, it may further deplete available water resources for local communities and fail to reduce the pressure on natural resources which is the primary driver of environmental degradation in the country.

The strategy also differs from other approaches as it involves systematic involvement of the private sector to facilitate and sustain technology transfer, markets and value chains related to agriculture, fisheries, eco-tourism and non-timber forest produce. By strengthening the linkage between agro-industry and communal farmers, the project will maximize the benefits to rural communities. Similarly, the investment proposed in MSMEs and small businesses will facilitate livelihood diversification in sustainable resource use and climate resilient occupations. While the current TRANSFORM project for example addresses some of these aspects, it does so in a lake ecosystem and on a pilot basis, with this project applies the strategy in the upper catchment of a river, while scaling it up. The two projects will therefore create solid proof-of-concept that can be used across different landscapes and ecosystems. An alternative approach could be contractual farming for large estates or private firms, which would, as described earlier, be inequitable and would not address some of the root causes of climate vulnerability.

The project strengthens the capacity of grassroots institutions and community-based organizations in managing and maintaining their natural resources and habitats.

This is in contrast with top-down approaches which tend to exclude communities and fail to address the root causes of environmental degradation which are exacerbating the impacts of climate change on livelihoods. Engagement with communities is also necessary owing to the complex land tenure in Malawi, where large tracts of communal lands are the most degraded.

The project uses a ridge-to-valley approach for restoring degraded habitats to revive ecosystem goods and services on which rural livelihoods depend, particularly during times of stress – often caused by climate related impacts on agriculture. This approach differs from restoration efforts which often fail to account for the natural connectivity between adjacent catchments. By doing so, it ensures that benefits accruing from environmental restoration are cumulative. Furthermore, the restoration efforts will be adjacent to protected habitats which will increase the efficacy of assisted natural regeneration. Environmental restoration efforts that are disjointed are less likely to succeed as restored areas lack critical ecological flows and interactions such as dispersal and micro-climatic conditions.

The project is also well aligned with the three LDCF priority areas of scaling up finance, strengthening innovation and private sector engagement and fostering partnership for inclusion and whole-of-society approach.

Scaling Up Finance

The project is aligned with the following entry points which will help scale up finance.

Reinforcing Policy Coherence: The project adopts a whole-of-government approach spanning across different government levels and departments to ensure there are substantive levels of co-finance for its activities. It supports institutional coordination, integration of climate change across national, sub-national and local policies and will create mechanisms for greater engagement of private (Component 3), and community institutions (Component 1 and 2), and tools and frameworks (Component 4) that can enable such engagements and coherence. The project is in close alignment with the GCF supported M-CLIMES project and the proposed NBS-ARC programme.

Strengthening institutional capacity: The project has as strong emphasis on strengthening the capacity of institutions (Component 1 and 3) and facilitating institutional coordination for effective design and implementation of cross-cutting and integrated adaptation (Component 4) including for the private sector (Component 3).

Enhancing tools and metrics as enablers for adaptation impact: The project, under Component 4 will strengthening the monitoring, reporting and verification of the outputs and outcomes, and strengthen institutional capacities in documentation and reporting of these impacts and outcomes.

Strengthening Innovation and Private Sector Engagement

The project is aligned with LDCF's innovation and private sector engagement goals primarily via Component 3: Strengthening private sector engagement for investments in economic value chains and climate resilient livelihoods. The project aims to achieve climate resilient livelihoods development and enhancement for affected local communities in target districts of Bua river basin via a combination of innovation, access to markets and access to finance levers at the community level and private sector level to enhance productivity and climate resilience of agricultural and fisheries value chains, and also strengthening alternative livelihoods via eco-tourism and sustainable briquette production investments. The project aims to use the existing and proven UNDP Growth Accelerator model in Malawi to identify, provide technical (from GEF resources) and financial (from co-finance) support to innovative and locally driven private sector enterprises (primarily MSMEs and cooperatives) that could enhance overall productivity of agricultural/fisheries/ecotourism value chains and income levels of local communities, while also profitably enhancing and expanding their own supply chains and markets. Further, the most successful of these enterprises will be provided with technical support from the project's resources to access larger, non-grant finance via design and provision of blended finance instruments together with local financial institutions and National Climate Change Fund. The project also proposes to provide technical support to larger private sector enterprises/agricultural commodity off-takers by brokering partnerships between them and target communities to enhance value chain productivity.

Essentially, the project's resources will be utilized as catalytic investments to de-risk private sector investments into enhancing value chains that could ensure climate resilient livelihoods of target communities. This approach is consistent with LDCF's private sector engagement strategy that aims to support MSMEs, technology/business model innovators and strengthening institutional capacity (via Growth Accelerator model and development of blended finance instruments together with NCCF, which is a public fund setup with support from UNDP). These blended finance instruments would be available to MSMEs, cooperatives, larger agricultural off-takers to scale up their value chain productivity enhancement activities during and beyond the project's implementation period, which could then be further capitalized (via NCCF) with Green Climate Fund (GCF) financing for a nationwide scale-up. This would then be consistent with LDCF's goal to build GEF-GCF coherence and collaboration. This approach will build on what is introduced under the TRANSFORM project (also funded by the LDCF) to create a broader base for this approach to private sector investment in climate change adaptation across different landscapes and ecosystems.

Fostering Partnership for Inclusion and Whole-of-Society Approach

Focusing on Institutional Strengthening and Capacity Building Efforts at All Levels will be achieved through activities under all of its components. Under Component 1 the project will build strong partnerships between stakeholders and formalize and strengthen enabling institutional arrangements, particularly between district and village level institutions. Activities under Component 1 and Component 4 will build local understanding of climate risks and uncertainties, and generate and implement solutions to address these under activities under Component 2 and 3.

The project will help *Building Partnerships with Local Organizations and Systems to Address Social Equity*. The project is designed to be gender responsive and address the vulnerabilities of socio-economically backward and marginalized groups. The project will utilize and enhance the use of participatory processes to ensure inclusive adaptation action under Component 1 which focuses on institutional sensitization and strengthening and Component 4 which will ensure inclusive and participatory planning of all on-ground interventions.

Exploring Innovative Financing Opportunities to Support Whole-Of Society Approach

The project, through Component 1 will contribute to enhanced capacity at the local level that understand climate risk for the community and improved institutional arrangements, within and between district level agencies and CBOs. It will also incentivize locally led action by strengthening CBOs to lead the implementation of interventions of this project and of other programmes of the government. The project, under Component 3 explores innovative financing opportunities by cross-linkages with other programmes, strengthening innovation and private sector engagement and by exploring private sector philanthropy in the project area.

Component 4 contributes to the focus on *Engaging in Thought Leadership Through Global Partnerships and Fostering Enabling Environment.* Under Output 4.2, the project will ensure participation in local, regional as well as global events and platforms to strengthen coordination of projects and to form alliances with other programmes as well as to mobilise resources.

Alignment with country and regional priorities

The project is closely aligned with a number of country and regional priorities as listed below. A summary of the priorities is presented in Appendix 2.

1. Nationally Determined Contributions

   The project, through activities in Component 1 and 2 will contribute to better management and governance of protected areas and community lands and the restoration of forests, riparian areas, wetlands and communal lands will contribute to the NDCs. Activities under Component 2 and 3 and knowledge sharing through Component 4 will support the transition to renewable energy sources through efficient use of fuel by introducing technologies for manufacture of briquettes and efficient and low-emission stoves for household needs.

2. National Adaptation Programmes of Action (NAPA)

   The project under Component 2 will integrate PICSA approaches within extension services, leading to resilience to climate change impacts in the predominantly farming communities in the project area. Measures for soil and water conservation and the afforestation proposed will mitigate the generation of floods in the headwaters of the Bua catchment and also increase infiltration and sustain dry season flows

which will help mitigate droughts. Institutional capacity building of district, area and village level institutions will further contribute to the NAPA actions.

3. National Biodiversity Strategy and Action Plan (NBSAP) II 2015-2025
The project will enhance biodiversity through intensive afforestation and re-vegetation of these areas and will improve rates of natural regeneration through the soil and water conservation measures it proposes. The project interventions in natural landscapes will utilize native species and will create alternative sources of fuel to reduce the pressure on protected areas. It will also strengthen local institutions to manage and govern these natural systems, by supporting and strengthening the surveillance and governance of forests, communal lands, riverine and wetland habitats. Thus the project will contribute significantly to the NBSAP[1][40].

4. Malawi Vision 2063

The project is aligned with the aims of the Malawi vision 2063. Component 1, which supports strengthening of institutions and governance as well as their capacities, will contribute to the pillars of mindset change, effective governance, human capital development. Component 2 which will intervene to increase productivity and restoration of both natural and production landscapes will contribute to the pillar of environmental sustainability and with Component 3 which seeks sustainable private sector engagement, is expected to support human capital development.

5. National Climate Change Management Policy (NCCMP) (2016)

The project, through Component 2 contributes to the NCCMP priority areas of climate change adaptation, mitigation and capacity building. It will also contribute to technology development and transfer – focusing on agriculture and energy saving technologies under Component 2 and 3. The project will also contribute to adaptation to the adverse effects and climate variability by integrating PICSA approaches into agricultural extension. Finally the project seeks to enhance the natural resource base and to reduce environmental degradation through watershed based interventions which will increase the resilience of ecosystems to climate change.

6. National Resilience Strategy (2018)

The project is aligned with the National Resilience Strategy and, as guided by the strategy, uses as multi-sectoral and multi-stakeholder approach which focus on resilient agriculture, catchment protection and management. The project, through interventions under Component 2 and 3, will contribute to the goals of the strategy including to provide food and nutritional security through diversified and climate-smart agriculture and to plan for disaster risk reduction and contribute to flood control by restoring and reforesting catchments.

7. Malawi Growth and Development Strategy (MGDS Ill)

The project contributes to the MGDS-III objectives of sustainable agriculture and economic growth and by addressing water, climate change and environmental challenges under interventions proposed under Component 2 and 3. The project will also contribute to the priority areas of agriculture, water development, climate change management and skill development through interventions proposed under Component 1 and 4.

8. Forest and Landscape Restoration Strategy (2017)

The project is closely aligned with the objectives of the Forest and Landscape Restoration Strategy. Component 2 of the project will adopt the community centred approach to improve agriculture technologies, restore and improve management of community forests and woodlots, enhance forest management, apply soil and water conservation measures, and ensure river- and stream-bank restoration, as provided in the policy.

9. Land Resources Conservation Policy and Strategy (2000)

The project contributes to the objectives of the Land Resources Conservation Policy and Strategy on improving productivity, rehabilitation of degraded land and stakeholder participation in land conservation and management through activities proposed under Component 1 and 2. The project will invest in capacity building across multiple-stakeholders and will strengthen the implementation of guidelines at the grassroots. The project is also closely aligned with gender considerations including differential vulnerabilities due to access to and ownership of assets, including land.

10. Environmental Management Act (2017)

The project will be guided by the regulations of the Environmental Management Act and will adhere to the regulations on environmental and social safeguards. It will contribute to the documentation of traditional and indigenous knowledge in the regulation and use of wetlands, river banks and lake shores. The project will contribute to the development of efficient renewable energy sources from crop waste and will seek to promote the conservation of biological resources using nature based solutions and by addressing environmental degradation by restoration and soil and water conservation using watershed approaches.

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[1] Government of Malawi, 'National Biodiversity Strategy and Action Plan II (2015 –2025)', 2015, https://npc.mw/wp-content/uploads/2020/07/National-Biodiversity-Strategy-and-Action-Plan-II.pdf.

D. POLICY REQUIREMENTS

Gender Equality and Women's Empowerment:

We confirm that gender dimensions relevant to the project have been addressed as per GEF Policy and are clearly articulated in the Project Description (Section B).

Yes

Stakeholder Engagement

We confirm that key stakeholders were consulted during PIF development as required per GEF policy, their relevant roles to project outcomes and plan to develop a Stakeholder Engagement Plan before CEO endorsement has been clearly articulated in the Project Description (Section B).

Yes

Were the following stakeholders consulted during project identification phase:

Indigenous Peoples and Local Communities: Yes

Civil Society Organizations: Yes

Private Sector: Yes

Provide a brief summary and list of names and dates of consultations

We confirm that key stakeholders were consulted during PIF development as required per GEF policy, their relevant roles to project outcomes and plan to develop a Stakeholder Engagement Plan before CEO endorsement has been clearly articulated in the Project Description (Section B).

A brief summary of the stakeholder consulted is provided in Appendix 5 with further details provided in the initial stakeholder engagement plan which will be further detailed during the PPG process.

S/N	Stakeholder Consulted	Date	Summary (details in SEP)
Ministries, departments and agencies within the government (MDAs)			
1	Department of Irrigation	26th June, 2023	River degradation is an area of concern. Have council level irrigation committees and work with non-state actors (NGOs) on solar irrigation.
2	Department of Disaster Management Affairs	26th June, 2023	DODMA also using approach of targeting catchments. DODMA will conduct a multi hazard risk assessment which could inform the PIF/PPG. Interventions in CIEWS
3	Ministry of Local Government	26th June, 2023	Strengthening grassroots institutional mechanisms
4	Ministry of Gender	26th June, 2023	Strengthening policy frameworks, governance mechanisms and capacities with regards to gender
5	Department of Land Resources and Conservation	27th June, 2023	The department is championing an integrated catchment management approach in their interventions. Assisted natural regeneration and restoration of forests and communal lands. Mapping
6	Ministry of Energy	27th June, 2023	Hydropower production, biomass projects, promotion of alternative energy sources (industrial briquette production, LPG, Biogas)
7	Department of Fisheries	27th June, 2023	Rejuvenating and climate proofing production landscapes (Fisheries & aquaculture)
8	National Water Resources Authority	28th June, 2023	Management/governance of rivers, riparian zones, wetlands and water bodies. Assisted natural regeneration and restoration of riparian zones, wetlands, water-bodies. Surveys and engineering designs
9	Ministry of Tourism	7th July, 2023	With regards to ecotourism, there is need for capacity building for communities to ensure sustainability. Capacity building in the following areas: visitor handling, development of packages, marketing skills. There is need to link the communities with Malawi tourism council (private sector tourism in Malawi, included SMEs and larger ones too).
10	Small and Medium Enterprises Development Institute (SMEDI)	3RD July, 2023	Is into assisting businesses in value addition and financial literacy. Has a programme with Malawi Bureau of Standards to subsidize the certification fee by 50%. Has incubation centers in Mponela and Mchinji which SMEs can access for food processing.
11	Famers Union of Malawi (FUM)	3RD July, 2023	Promotion and safeguarding the interests of farmers, they act as a policy platform, institutional capacity building and agribusiness and market access. Connecting farmers to inputs and markets. FUM has a 5 -year strategic plan which includes promotion of climate smart agriculture.
District level agencies			
1	Mchinji District Environment Sub-Committee (DESC	20th to 21st June 2023	Highly impacted with climatic shocks and unsustainable agricultural practices and land degradation. Receptive to project as restoration of the Bua ecosystem still has a long way to go. Interventions have so far been for small catchments and impact is minimal, therefore there's need for more. and to provide all necessary information. Main value chains are soybeans, groundnuts, sunflower, beans, potatoes, tomatoes. Other sources of livelihood include beekeeping and fisheries. Could engage in use of briquettes as an alternative source of energy but would require extensive promotion.

2	Nkhotakota District Environment Sub-Committee (DESC)	22rd June, 2023	The District is on the receiving end of all that occurs at the source of the Bua (Mchinji), therefore the district experienced floods, siltation and river bank degradation. Has great potential for eco-tourisim and value addition to rice value chain.
3	Kasungu District Environment Sub-Committee (DESC)	5th July, 3023	The district is impacted with climatic shocks and unsustainable agricultural practices and land degradation. There is need for awareness campaigns on policies and laws if restoration and conservation interventions are to be effective. Registration of land could improve implementation of conservation and restoration interventions. Great potential for ecotourism.
Communities and community representatives			
1	Community members in Mchinji and Kasungu		Livelihoods highly affected by climatic shocks. Crop productivity has greatly reduced. Communities are capable of adaptation. There are several extension services available, largely agricultural.
Private sector			
1	NBS Bank	7th July, 2023	In setting up finance-related interventions, there is need to collaborate with anchor players such as Pyxus and SEEDCO because such players can provide a production and market guarantee. Recommended to start with value chains that are well known to be profitable. Issues of crop insurance are important but need to find a firm that understands what is intended to be achieved and the firms can build models custom made for the farmers. Banks e.g. NBS can collaborate with insurance companies to explore issues of insurance.
2	Standard Bank	7th July, 2023	If loans are to be given to smallholder farmers or community members, there is need to raise awareness on the difference between loans and grants incase the project sites may have been predisposed to grants. Registration of farmer cooperatives increases chances of financing.
3	SEEDCO	7th July, 2023	Has introduced improved rice variety that requires less water and can be grown in upper lands away from river banks thereby promoting restoration of the riverbanks.
4	Ntalimanja Holdings	7TH July, 2023	Provides market access to farmers within the Bua River basin for value chains like rice and groundnuts. Offers better prices Focuses on value addition of these value chains.
Multilateral agencies			
1	UNDP	29th June, 2023	Recommended having an M&E Plan, a learning plan (knowledge sharing)
2	Food and Agriculture Organization (FAO)	29th June, 2023	Are implementing a project in Kasungu on agriculture productivity (synergies could be developed here with UNDP/EAD) and in Mchinji FAO has a project that uses farmer filed approaches. Recommends looking at issues of land tenure very seriously .
3	World Food Programme (WFP)	29th June, 2023	Implementing a school meals programme in Kasungu and have a resilience project in the pipeline. Recommends strong linkage to markets where irrigation schemes are constructed.
4	USAID	29th June, 2023	Has various interventions in the bua catchment area, mostly on cleaner cooking technologies, fisheries (e.g. Refresh Project in Nkhotakota) and governance Has various projects that involve the private sector. Recommends assessing what ecosystem services have been lost and what their impacts are and building from this.
5	UNCDF		LoCAL project has a private sector engagement component, LoCAL can co-finance development of some value chains.

			There is need to consider local councils, they have big plans that can be capitalized on through the project.
NGOs and Academia			
1	Christian Aid	28th June, 2023	Restoration and climate change adaptation
2	Lilongwe University of Agriculture and Natural Resources	28th June, 2023	Fisheries & aquaculture
3	National Youth Network on Climate Change	28th June, 2023	Restoration and climate change adaptation
4	AG Care	28th June, 2023	Restoration and climate change adaptation
5	Catholic Development Commission in Malawi	28th June, 2023	Restoration and climate change adaptation
6	Trocaire	28th June, 2023	Restoring and managing protected areas and natural ecosystems
7	Oxfam	28th June, 2023	Restoration and climate change adaptation
8	Malawi Red Cross	28th June, 2023	Human health and well being
9	Civil Society Network on Climate Change	28th June, 2023	Restoration and climate change adaptation
Cooperatives			
1	Malawi Union of Savings and Credit Cooperatives (MUSCCO)	3rd July, 2023	Present in Mchinji and Kasungu. Main strategic pillar is financial inclusion including the vulnerable groups. Muscco only uses its funds for capacity development and do not inject finances directly. MUSCCO is also involved in crop insurance.
2	Bua Rice Farmers Cooperative	8th July, 2023	Specializes in rice value chain. Does value addition and provides market access to farmers at better prices. Also provides loans to its members with favorable payment conditions.
3	FINCOOP Savings and Credit Cooperative	7TH July, 2023	Could collaborate with banks to maximize impact. FINCOOP could also collaborate with other players on the ground to finance briquette production.

(Please upload to the portal documents tab any stakeholder engagement plan or assessments that have been done during the PIF development phase.)

Private Sector

Will there be private sector engagement in the project?

Yes

And if so, has its role been described and justified in the section B project description?

Yes

Environmental and Social Safeguard (ESS) Risks

We confirm that we have provided indicative information regarding Environmental and Social risks associated with the proposed project or program and any measures to address such risks and impacts (this information should be presented in Annex D).

Yes

Overall Project/Program Risk Classification

PIF	CEO Endorsement/Approval	MTR	TE

Medium/Moderate

E. OTHER REQUIREMENTS

Knowledge management

We confirm that an approach to Knowledge Management and Learning has been clearly described in the Project Description (Section B)

Yes

ANNEX A: FINANCING TABLES

GEF Financing Table

Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	Grant / Non-Grant	GEF Project Grant($)	Agency Fee($)	Total GEF Financing ($)
UNDP	LDCF	Malawi	Climate Change	LDCF Country allocation	Grant	8,932,420.00	848,580.00	9,781,000.00
Total GEF Resources ($)						**8,932,420.00**	**848,580.00**	**9,781,000.00**

Project Preparation Grant (PPG)

Is Project Preparation Grant requested?

true

PPG Amount ($)

200000

PPG Agency Fee ($)

19000

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	Grant / Non-Grant	PPG($)	Agency Fee($)	Total PPG Funding($)
UNDP	LDCF	Malawi	Climate Change	LDCF Country allocation	Grant	200,000.00	19,000.00	219,000.00
Total PPG Amount ($)						**200,000.00**	**19,000.00**	**219,000.00**

Please provide justification

Sources of Funds for Country Star Allocation

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Sources of Funds	Total($)
Total GEF Resources					**0.00**

Indicative Focal Area Elements

Programming Directions	Trust Fund	GEF Project Financing($)	Co-financing($)
CCA-1-1	LDCF	7,145,935.00	44319994
CCA-1-2	LDCF	761,132.00	4720637
CCA-1-3	LDCF	1,025,353.00	6359369
Total Project Cost		**8,932,420.00**	**55,400,000.00**

Indicative Co-financing

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Recipient Country Government	Ministry of Natural Resources and climate change - Effective Management of Mchinji Ecosystems for Restoration of upper Bua River Catchment Project	Public Investment	Investment mobilized	900000
Recipient Country Government	Ministry of Natural Resources and Climate change – Climate Resilient Initiative in Malawi II project	Public Investment	Investment mobilized	2500000
Recipient Country Government	Ministry of Agriculture and Irrigation – Empowerment of women and youths in Agriculture in Malawi project	Public Investment	Investment mobilized	2500000
Recipient Country Government	Enhanced climate smart public works programme	Public Investment	Investment mobilized	19000000
Recipient Country Government	Ministry of Natural Resources and Climate Change and Ministry of Finance	In-kind	Recurrent expenditures	8000000

Recipient Country Government	Ministry of Agriculture	Public Investment	Investment mobilized	20000000
GEF Agency	UNDP Malawi Country Office	Grant	Recurrent expenditures	1500000
Others	Private sector companies/Institutions	Grant	Investment mobilized	1000000
Total Co-financing				**55,400,000.00**

Describe how any "Investment Mobilized" was identified

The investment mobilized is from four project which are running concurrently and spatially overlap with the proposed CLAP for Resilience project.

The project “Effective Management of Mchinji Ecosystems for Restoration of Upper Bua River Catchment” is being implemented by the UNEP during the period 2022-2026 in the Mjinji Forest Reserve with a total grant outlay of 921,508 and co-finance commitment of 6,300,00 USD. Investments made by the project will support ecological restoration, community mobilisation and strengthening of governance and community based management of both protected landscapes and communal lands. These investments will directly okasupport the activities proposed under Components 1 and 2 of the CLAP project. See pg. 13 (Baseline scenario) and pg. 49 (Appendix 3) for more details.

The project “Climate Resilient Initiative in Malawi – II” is the second phase of the initiative supported by the Government of Flander’s by a grant of 2,500.000 Euro for a three year period. The first phase of the project ends in 2023 and is described on pg. 26. The second phase of the project will continue building resilience through the channels of district councils and community-based approaches in the districts of Mzimba and Kasungu by leveraging capacities built in Phase 1. It will sustain and scale critical adaptation interventions spearheaded by Phase-1 proven to be viable and will introduce Private Sector as the promoters of sustainable and scalable adaptation solutions beyond districts of CRIM-I initially targeted. These activities are similar to those under Components 1, 2 and 3 of the CLAP project. The spatial and temporal overlap with the CLAP project (Kasungu district) will facilitate a wider impact of the GCF interventions, both in terms of watershed areas treated and numbers of communities benefited. A coordination mechanism will be set up to ensure synergies between the two projects and to avoid duplication of work or sites.

“Empowerment of Women and Youths in Agriculture in Malawi” is a 28 month long initiative which started in May 2023 and is funded by the UN Multi-Partner Trust Fund for 2,450,000 Euros. The project is being implemented by the Food and Agriculture Organization of the United Nations (FAO) and UNDP with the Government of Malawi through the Ministry of Agriculture and District Councils of M’mbelwa and Kasungu. The project district of Kusungu overlaps with the CLAP project and will directly benefit 1,000 farmers and indirectly another 1,750 farmers of who 80% will be women and youth. The project will support farmer organisations and cooperatives to engage with the private sector, specifically agri-businesses. Work under Component 3 of the CLAP project will directly benefit from the investment of this initiative. Component 1 of the CLAP project will also gain from the investments made in existing local governance structures and various enterprise committees and will build on these investments for the proposed interventions through these local institutions.

The Enhanced Climate Smart Public Works programme is a five year programme ending in 2027 supported by the World Bank for 128,000,000. The programme seeks to address land degradation, biodiversity loss and impacts of climate change through interventions land conservation, afforestation, natural regeneration and promotion of sustainable livelihoods – which overlaps with the CLAP project’s Components 2 and 3. The Public Works programme is being implemented in the same districts as the proposed CLAP project, specifically targeting economically poor households. Coordinated activities between the two projects will

facilitate greater investments on alternative livelihoods and allow intensification of agricultural interventions and extension of restoration efforts in selected catchments. In particular, the CLAP project will build on the soil fertility and moisture retention from added organic manure which is proposed under the Public Works programme. Mechanisms will be instituted to ensure the two projects avoid duplication of work.

The Agricultural Commercialization Project for Malawi is funded by the World Bank and aims to increase commercialization of agriculture value chain products. Its four components focus on i) Integration of small-scale into value chains; ii) improvements in the investment and trade environment that will both deepen and sustain market linkages and improve financing for private actors; iii) Establishing a disaster recovery contingency fund that may be triggered in the event of an eligible natural or human-induced crisis or emergency; and iv) Project management, including compliance with social and environmental safeguards and fiduciary reporting requirements. The CLAP project seeks to leverage the investments made by the Agricultural Commercialisation Project, particularly through its first two components. It will utilise the market linkages and seek to benefit from the financing of private sector initiatives for which is will set up coordination arrangements with the project and its implementing agencies which include the Ministry of Agriculture.

Additional co-finance from financial institutions (Banks, MFIs) and selected private sector enterprises (larger private sector agricultural commodity off-takers, processing companies, corporations) will be leveraged via the project's proposed activities under Component 3. Specific co-finance commitments from these entities will be sought during PPG phase and included in Prodoc/CEO-ER documents.

ANNEX B: ENDORSEMENTS

GEF Agency(ies) Certification

GEF Agency Type	Name	Date	Project Contact Person	Phone	Email
GEF Agency Coordinator	Pradeep Kurukulasuriya	10/16/2023			pradeep.kurukulasuriya@undp.org
Project Coordinator	Muyeye Chambwera	10/16/2023			muyeye.chambwera@undp.org

Record of Endorsement of GEF Operational Focal Point (s) on Behalf of the Government(s):

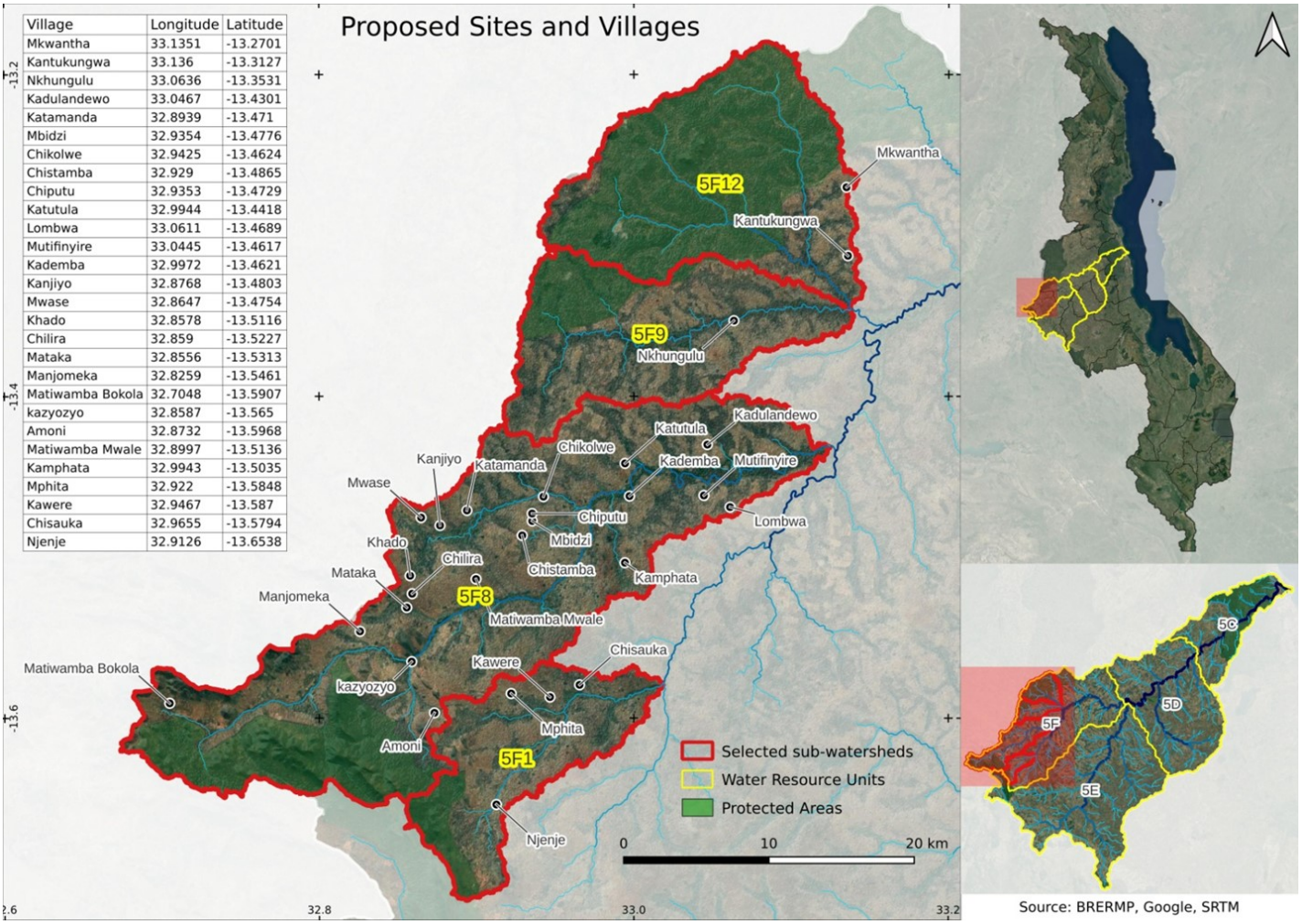
Name	Position	Ministry	Date (MM/DD/YYYY)
Shamiso Banda	Deputy Director for Environmental Affairs	Ministry of Natural Resources and Climate Change	9/12/2023

ANNEX C: PROJECT LOCATION

Please provide geo-referenced information and map where the project interventions will take place

Physical interventions aimed at ecological restoration will be in the upper catchment of Bua. Coordinates of sites and numbers of the sub-watersheds are provided. Note that these are tentative figures which will be revised based on the field surveys and detailed site assessments to be done during the PPG phase.

Private sector interventions will additionally be taken up in the Nkhotakota district along the Bua River where there is a high potential for agriculture-based enterprises.



Village names and coordinates

Village Name	District	Longitude	Latitude
Amon	Mchinji	32.8732	-13.5968
Chikolwe	Mchinji	32.9425	-13.4624
Chilira	Mchinji	32.859	-13.5227
Chiputu	Mchinji	32.9353	-13.4729
Chisauka	Mchinji	32.9655	-13.5794
Chitsamba	Mchinji	32.929	-13.4865
Kademba	Mchinji	32.9972	-13.4621
Kadulandewo	Mchinji	33.0467	-13.4301
Kamphata	Mchinji	32.9943	-13.5035
Kanjiyo	Mchinji	32.8768	-13.4803
Kantukungwa	Kasungu	33.136	-13.3127
Katamanda	Mchinji	32.8939	-13.471
Katutula	Mchinji	32.9944	-13.4418
Kawere	Mchinji	32.9467	-13.587
Kazyozyo	Mchinji	32.8587	-13.565
Khadu	Mchinji	32.8578	-13.5116
Lombwa	Mchinji	33.0611	-13.4689
Manjomeka	Mchinji	32.8259	-13.5461
Mataka	Mchinji	32.8556	-13.5313
Matiwamba Bokola	Mchinji	32.7048	-13.5907
Matiwamba Mwale	Mchinji	32.8997	-13.5136
Mbizi	Mchinji	32.9354	-13.4776
Mkwantha	Kasungu	33.1351	-13.2701

Mphita	Mchinji	32.922	-13.5848
Mutifinyire	Mchinji	33.0445	-13.4617
Mwase	Mchinji	32.8647	-13.4754
Njenje	Mchinji	32.9126	-13.6538
Nkhungulu	Mchinji	33.0636	-13.3531

ANNEX D: ENVIRONMENTAL AND SOCIAL SAFEGUARDS SCREEN AND RATING

(PIF level) Attach agency safeguard screen form including rating of risk types and overall risk rating.

Title

pre-SESP_Bua_PIMS 9673_Clean

ANNEX E: RIO MARKERS

Climate Change Mitigation	Climate Change Adaptation	Biodiversity	Land Degradation
No Contribution 0	Principal Objective 2	Significant Objective 1	Significant Objective 1

ANNEX F: TAXONOMY WORKSHEET

Level 1	Level 2	Level 3	Level 4
Influencing Models	Strengthen institutional cap	(multiple selection)	(multiple selection)
	Deploy innovative financial		
	Demonstrate innovative ap		
Stakeholders	Local communities	(multiple selection)	(multiple selection)
	Beneficiaries	(multiple selection)	(multiple selection)
	Private sector	Financial intermediaries a	(multiple selection)
	Civil society	Community based organis	(multiple selection)
	Type of engagement	Participation	(multiple selection)
		Consultation	
		Information Dissemination	
Capacity, Knowledge and Research	Enabling Activities	(multiple selection)	(multiple selection)
	Capacity Development	(multiple selection)	(multiple selection)
	Knowledge Generation and	(multiple selection)	(multiple selection)
	Learning	Adaptive Management	(multiple selection)
		Indicators to Measure Change	
Gender Equality	Gender mainstreaming	Beneficiaries	(multiple selection)
		Women groups	
		Sex-disaggregated indicators	
		Gender-sensitive indicators	
	Gender results areas	Access and control over natural resources	
		Participation and leadership	
		Capacity development	
		Access to benefits and services	
		Awareness raising	
Focal Area/Theme	Climate change	Climate Change Adaptation	Least Developed Countries
			Climate Resilience
			Climate Information
			Ecosystem-based Adaptation
			Private Sector

			Innovation
			Community-based Adaptation
			Livelihoods

Note to reviewer: APPENDICES are included in the PIF from Pages 52- 81