GEF-8 REQUEST FOR CEO ENDORSEMENT/APPROVAL

TABLE OF CONTENTS

General Project Information

Project Title Lake Ecosystem Restoration in Indonesia through Integrated Governance, Landscape, and Community-based Approaches.	
Region Asia	GEF Project ID 11422
Country(ies) Indonesia	Type of Project FSP
GEF Agency(ies): IFAD	GEF Agency Project ID 2000004738
Project Executing Entity(s) Ministry of Environment and Forestry	Project Executing Type Government
GEF Focal Area (s) Multi Focal Area	Submission Date 2/7/2025
Type of Trust Fund GET	Project Duration (Months) 60
GEF Project Grant: (a) 7,105,936.00	GEF Project Non-Grant: (b) 0.00
Agency Fee(s) Grant: (c) 675,064.00	Agency Fee(s) Non-Grant (d) 0.00
Total GEF Financing: (a+b+c+d) 7,781,000.00	Total Co-financing 49,650,000.00
PPG Amount: (e) 200,000.00	PPG Agency Fee(s): (f) 19,000.00
Total GEF Resources: (a+b+c+d+e+f) 8,000,000.00	
Project Tags CBIT: No NGI: No SGP: No Innovation: No	
Project Sector (CCM Only) AFOLU	

Taxonomy

Focal Areas, Biodiversity, Species, Biomes, Mainstreaming, Agriculture and agrobiodiversity, Climate Change, Climate Change Mitigation, Agriculture, Forestry, and Other Land Use, Influencing models, Strengthen institutional capacity and decision-making, Transform policy and regulatory environments, Demonstrate innovative approache, Stakeholders, Indigenous Peoples, Private Sector, Individuals/Entrepreneurs, Local Communities, Civil Society, Community Based Organization, Type of Engagement, Participation, Consultation, Beneficiaries, Gender Equality, Gender Mainstreaming, Gender-sensitive indicators, Capacity, Knowledge and Research, Knowledge Generation, Knowledge Exchange, Capacity Development, Learning

Rio Markers

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

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. (max. 250 words, approximately 1/2 page)

Indonesia's lake ecosystems support globally significant biodiversity and provide vital ecosystem services. However, they are increasingly threatened by pollution, increased sedimentation, unsustainable land use, and climate change. Biodiversity loss is escalating due to habitat degradation and the spread of invasive alien species. The GEF-8 LAKES project addresses these challenges by integrating lake ecosystem management with climate-resilient livelihood opportunities, particularly for marginalized groups such as women, youth, and indigenous peoples.

The project's approach focuses on three key pillars: strengthening governance (Components 1 and 2), building community resilience (Component 2), and enhancing knowledge sharing (Component 3). Notably, the development of a Government Regulation on Integrated Lake Ecosystem Management has already been initiated during the project's preparation phase, laying a strong legal foundation even before the project begins. The project will further develop regulatory frameworks, improve lake ecosystem health assessments, and strengthen national information systems on lake ecosystem health. Participatory lake ecosystem management plans will be created in three demonstration areas, promoting biodiversity conservation, climate resilience, and sustainable livelihoods.

Aligned with GEF-8 BD and CC objectives, the project will deliver 126,875 hectares under improved practices, facilitate the restoration of 4,496 hectares of land and ecosystems, mitigate 1.4 million tCO2e in GHG emissions, and directly benefit 10,000 people (50% women/girls). With critical regulatory frameworks already in motion, the project is poised to rapidly scale up efforts in sustainable lake governance, ensuring long-lasting impacts across Indonesia's lake ecosystems.

Project Description Overview

Project Objective

To protect biodiversity and safeguard the resilience of Indonesia's lake ecosystems by establishing integrated governance systems, empowering local communities with sustainable livelihoods, and enabling national-scale adoption of sustainable lake management practices.

Project Components

1: Strengthening the enabling environment for integrated lake ecosystem management and governance

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing ($)	Co-financing ($)
1,526,400.00	11,348,571.00

Outcome:

1: Enhanced capacity for participatory and sustainable lake ecosystem management and governance in Indonesia

Indicators:

One national and three sub-national integrated lake ecosystem management structures functional.

Four regulations on lake ecosystem management and governance.

50% increase from baseline in satisfaction of the implement-ability of the lake ecosystem heath assessment methodology.

10% increase in lake ecosystem health of the three target lake ecosystems, measured using the updated lake ecosystem health assessment methodology.

Output:

1.1: Policy frameworks, guidelines, and implementation mechanisms on integrated lake ecosystem management developed and/or strengthened

1.2: Methodologies for lake ecosystem health assessment and monitoring strengthened

1.3: National information systems on lake ecosystem management strengthened and operationalized

2: demonstrating multiple environmental and social benefits through implementation of integrated lake ecosystem management

Component Type	Trust Fund
Investment	GET
GEF Project Financing ($)	Co-financing ($)
3,539,455.00	24,683,143.00

Outcome:

2: Improved integrated landscape and lake ecosystem governance and management that enhance biodiversity and climate-resilient livelihoods of poor and vulnerable communities, particularly women and youth in selected villages in the three demonstration areas

Indicators:

Integrated lake ecosystem management implemented in 11 villages in line with national, subnational and village regulations.

Eight local knowledge and ecosystem-based approaches promoted and adopted to protect and propagate native species that preserve biodiversity.

80% increase in individual capacity for the adoption of environmentally sustainable and climate resilient technologies and practices.

Core indicators:

6,450 ha of land and ecosystems under restoration.

126,875 ha of landscapes under improved practices.

1.39 million tCO2e of GHG emissions mitigated.

Output:

2.1: Participatory integrated lake ecosystem management plans developed and implemented in three demonstration areas

2.2 Multi-stakeholders' local governance mechanisms for integrated lake ecosystem management strengthened in three demonstration areas

2.3 Nature-based solutions (NbS) and climate resilient livelihoods promoted, developed, and implemented

3: Knowledge management and learning

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing ($)	Co-financing ($)
1,491,703.00	9,930,000.00

Outcome:

3: Enhanced community awareness and knowledge, contribution and collaboration among stakeholders on lake ecosystem. Management, rehabilitation and restoration

Indicators:

An increase of six national and ten provincial institutions and two private sector companies sharing information to improve lake ecosystem health.

10% annually increase in resource allocation (funds, HR) of participating institutions and organizations (public and private) to improve lake ecosystem health.

Output:

3.1: Lake centers of excellence and knowledge hubs developed

3.2: Knowledge sharing, learning systems and collaboration network established

M&E

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing ($)	Co-financing ($)
210,000.00	1,560,429.00

Outcome:

Project implementation and results strengthened through participatory and gender sensitive monitoring and evaluation

Output:

Project monitoring, evaluation and reporting systems developed and implemented

Component Balances

Project Components	GEF Project Financing ($)	Co-financing ($)
1: Strengthening the enabling environment for integrated lake ecosystem management and governance	1,526,400.00	11,348,571.00
2: demonstrating multiple environmental and social benefits through implementation of integrated lake ecosystem management	3,539,455.00	24,683,143.00
3: Knowledge management and learning	1,491,703.00	9,930,000.00
M&E	210,000.00	1,560,429.00
Subtotal	**6,767,558.00**	**47,522,143.00**
Project Management Cost	338,378.00	2,127,857.00
Total Project Cost ($)	**7,105,936.00**	**49,650,000.00**

Please provide Justification

PROJECT OUTLINE

A. PROJECT RATIONALE

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

Global environmental significance

Indonesia has some of the largest freshwater reserves in the world, with an exceptional number of multi-origin lakes, including tectonic, volcanic, crater, and caldera types primarily in highland areas, ephemeral floodplain types in lowlands, as well as numerous artificial lakes. The vast archipelagic country falls within two of the world's 36 biodiversity hotspots, namely Sundaland and Wallacea, defined under the Critical Ecosystem

Partnership Fund. Indonesian lake ecosystems provide terrestrial and aquatic habitats for thousands of species of flora and fauna, including fish, birds, mammals, amphibians, insects, as well as mollusks and other invertebrates. For example, among the 4,782 native fish species recorded in Indonesia, 1,248 are freshwater species.[2][1] Among the critically endangered freshwater fish species identified in the IUCN Species Survival Commission's Asian Species Action Partnership (ASAP), the highest number (48), more than half on the list, are in Indonesia.[3][2] The country's lakes accommodate 72% of its surface water.[4][3]

Indonesian lake ecosystems are under increasing threats due to the critical roles they play in sustaining livelihoods across the country. The agricultural sector remains the largest employer in Indonesia, accounting for 29% of total employment in 2021[5][4]. Inland lake systems are essential to agricultural productivity, through ecosystem service provision that sustain local communities[6][5]. For example: provisioning services - providing water for irrigation and supporting fisheries; regulating services – water, erosion, and local climate regulation; supporting services – habitat provision for diverse terrestrial and aquatic organisms, nutrient cycling; and cultural services – tourism and recreational value to local communities. One global evaluation of lake ecosystem services in 2010 estimated a value between US$ 106 and 140 per respondent per year.[7][6].

In the Indonesian context, aquaculture and inland capture fisheries have steadily grown, with production increasing from 455,270 metric tons (MT) in 2015 to 649,978 MT in 2019[8][7]. However, some of the lakes have had recurring massive fish die-offs – some due to natural causes and others due to excess sewage, fertilizers and unsustainable fishing practices[9][8]. In communities that rely on fisheries for primary income, this causes income losses and debt distress. In addition to agriculture and fisheries, the energy sector also relies heavily on inland lakes, particularly for hydropower generation. Hydropower is the largest source of clean energy in Indonesia, contributing 6.6 GW in 2021[10][9], or 57% of the total electricity generated from renewable resources. As Indonesia works towards its goal of having at least 31% of its primary energy supply from new and renewable sources by 2050, the role of inland lakes in hydropower generation is expected to grow.

However, these vital ecosystems are facing increasing pressures from pollution (including from inland fisheries/aquaculture), poor municipal waste management, and agricultural runoff, resulting from

unsustainable land use practices. Eutrophication, primarily caused by nutrient loading, has become a significant threat to both terrestrial and aquatic biodiversity. Non-point runoff from agricultural lands is a major source of these nutrients, and the intensity of fertilizer use has surged over the past decades. Fertilizer consumption has grown from 12.6 kg/ha in 1971 to 279.2 kg/ha in 2021, driven by the expansion of agricultural land from 383,500 km² to 646,000 km² during the same period. Concurrently, forest cover has drastically diminished, falling from 65.4% of total land area in 1990 to just 48.4% in 2021[11]10. This reduction in forested areas, combined with increased agricultural activity, has exacerbated soil erosion and nutrient runoff, further threatening the health of Indonesia's lake ecosystems.

The national governance of lake ecosystems in Indonesia is shaped by a complex regulatory landscape that is still evolving to address the growing environmental challenges. While the government has introduced significant regulations, such as Law Number 17 of 2019 concerning Water Resources and Presidential Decree Number 60 of 2021 on the Rescue of National Priority Lakes, there remain gaps in harmonization and enforcement across levels of governance. This Decree identified 15 national priority lakes in critical degradation status for ecosystem recovery. Law Number 17 of 2019 provides a legal framework for water resource management, including lakes, with mandates for water conservation, pollution control, and water quality management (Articles 24 and 76). The law directs water resource management to be carried out comprehensively, integrated with environmental considerations, and prioritizing social fairness. It also tasks the Ministry of Public Works (PUPR) with finalizing a Government Regulation on Water Resources, which will regulate lake ecosystems alongside other water bodies, such as rivers and swamps. Article 76 of this law prioritizes the sustainable use of surface water, including lakes, and emphasizes preserving water catchment areas as critical for ecosystem health.

Despite these national regulations, a key remaining challenge regarding lake ecosystem management pertains to enforcement and coordination at the regional and village levels. The decentralized governance structure means that local governments often lack the capacity and resources to implement national policies effectively. For example, while national laws provide detailed guidance on water catchment management, these regulations are not always enforced due to competing land use priorities and unclear jurisdiction between national and local authorities. The draft regulation on Water Sources currently in development by PUPR aims to address these gaps by introducing clearer guidelines for the protection and management of lake zones, water pollution control, and the role of local governments in enforcing these regulations. This effort is also being harmonized with existing environmental laws and regulations, such as Law Number 32 of 2009 on Environmental Protection and Management and the Government Regulation Number 22 Year 2021 concerning Environmental Protection and Management, to ensure that lake ecosystems receive the necessary legal and administrative attention across sectors.

At the local level, enforcement is further hindered by conflicting land use practices and limited institutional capacity. Local governments and communities often lack technical expertise and financial resources to effectively manage lake ecosystems, particularly in high-priority areas like Lake Batur and Lake Limboto. Although provincial and district-level regulations exist, such as Bangli District Regulation No. 9 of 2013 on Spatial Planning in the Lake Batur catchment, certain unsustainable activities like sand mining and residential

encroachment continue to present challenges to local authorities. Furthermore, local communities, who are crucial stakeholders in lake management, are often not adequately involved in decision-making processes, exacerbating the disconnect between national policy and local implementation.

In the face of these national challenges, the Government of Indonesia has identified certain lakes as critical priorities for conservation and restoration. As stated earlier, the national government, through Presidential Decree Number 60 of 2021 on the Rescue of National Priority Lakes, has highlighted the need for urgent interventions in these areas, including Lake Rawapening, Lake Batur, and Lake Limboto. Despite ongoing regulatory efforts, the deterioration of these lakes continues due to gaps in policy implementation, weak enforcement, and insufficient stakeholder engagement, especially at the local and regional levels. Addressing these gaps requires a comprehensive, integrated approach that unifies policy, regulation, and enforcement across all levels of governance.

Target lake ecosystems: Lake Rawapening, Lake Batur, and Lake Limboto

This project narrows its focus to the following three national priority lakes (see Figure 1) — Lake Rawapening, Lake Batur, and Lake Limboto — which are emblematic of the broader environmental issues facing Indonesia's freshwater ecosystems. These lakes, while unique in their geographic and ecological characteristics, share common threats, including sedimentation, water pollution, and invasive species, driven by unsustainable land use, agricultural runoff, and deforestation. These threats are leading to degradation of ecosystem services, loss of biodiversity, and reduced carbon sequestration.

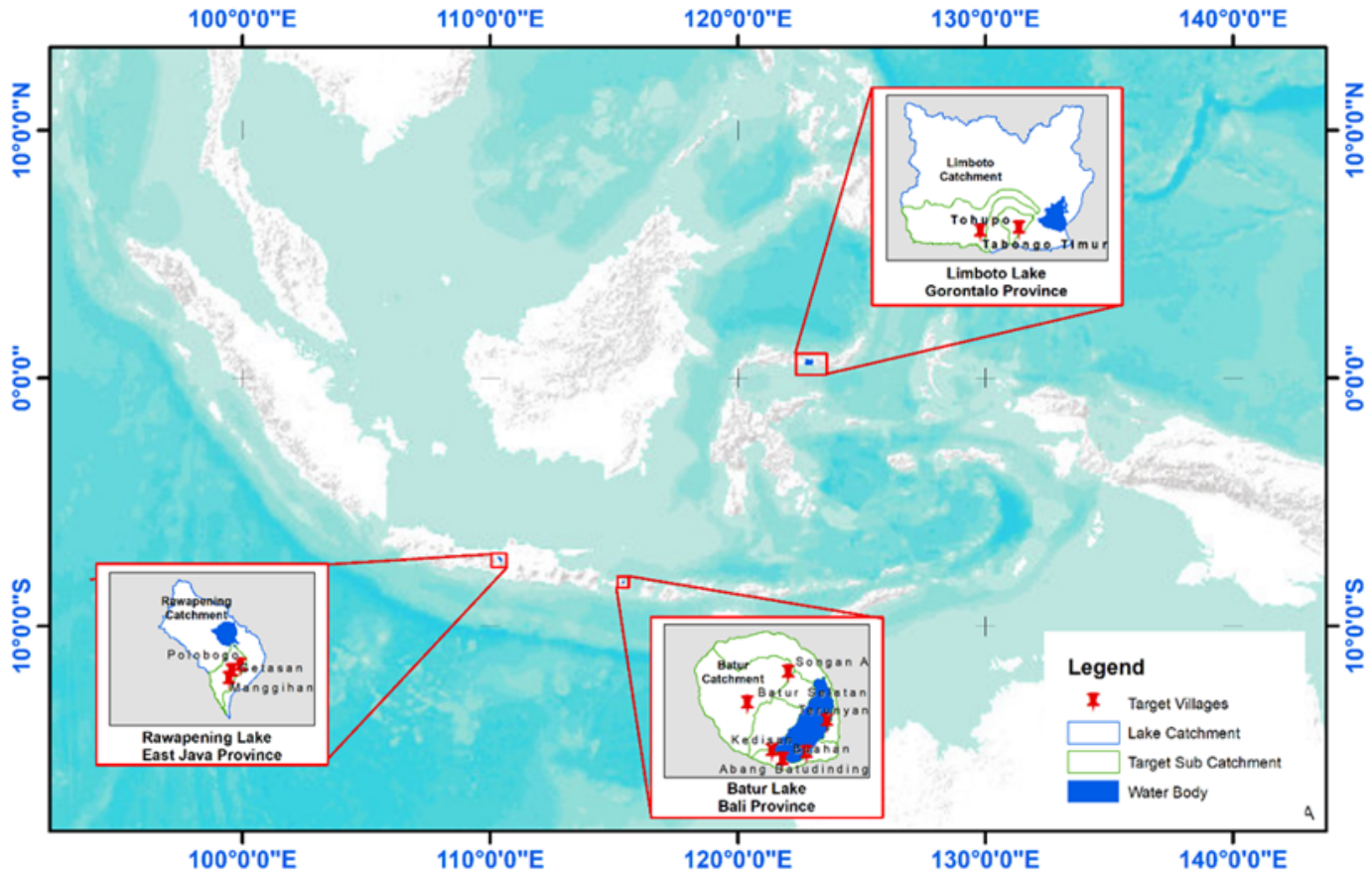


Figure 1: Project map

Current conditions of the target lake ecosystems: Global environmental problems and climate vulnerabilities

The three target lake ecosystems — Lake Rawapening, Lake Batur, and Lake Limboto — are facing serious environmental threats caused by a combination of human activity, unsustainable land-use practices, and climate-induced vulnerabilities. These lakes, which provide essential ecosystem services such as water for drinking and irrigation, fisheries, and biodiversity support, are under increasing pressure due to sedimentation, pollution, and invasive species. As a result, these ecosystems and the communities that depend on them are at risk of losing critical resources, which also underpin life and livelihoods. Information on the target lake ecosystems, detailed in **Annex M** (*Profiles of the target areas*), is summarized below.

Lake Rawapening

Lake Rawapening, located in Central Java, has been subjected to significant environmental degradation driven by unsustainable agricultural practices and deforestation. Sedimentation rates have reached 2,350 tons per year, primarily originating from nine rivers, including the Parat, Legi, and Sraten rivers. These rivers carry

sediment from agricultural runoff and deforested slopes within the Upper Tuntang Sub-Watershed, which covers approximately 27,278 hectares (ha). Within this watershed, only 5.7% of the area remains forested, while the rest is primarily used for agriculture and residential developments, exacerbating soil erosion.[1][11]

Agricultural runoff has contributed not only to sedimentation but also to nutrient loading, which fuels the growth of invasive species such as water hyacinth (*Eichhornia crassipes*), further disrupting water flow, reducing oxygen levels, and outcompeting native species. The lake's water quality has deteriorated significantly, failing to meet national water quality standards for Class I and II parameters, as regulated in the Annex VI Government Regulation Number 22 Year 2021 concerning Environmental Protection and Management. For instance, levels of Total Suspended Solids (TSS) and Total Phosphorus (P) – largely originating from agricultural/livestock runoff in the upper catchment areas - exceed safe limits, making the water unsuitable for drinking or recreational activities. The lake is now largely classified as Class IV, where the water is only suitable for fisheries or irrigation.

Aquatic biodiversity is also severely affected. Native fish species such as the *Rasbora lateristriata*, *Osteochilus vittatus*, and *Barbodes binotatus* are becoming increasingly rare, replaced by invasive species like Nile tilapia (*Oreochromis niloticus*) and the red devil cichlid (*Amphilophus labiatus*). These invasive species, along with overfishing—exceeding 132% of the Maximum Sustainable Yield (MSY) for Rasbora species—have contributed to declining fish stocks, further impacting local livelihoods that rely on fishing.

Lake Batur

Lake Batur, located in the volcanic caldera of Mount Batur in Bali, faces a similar range of environmental challenges. Sedimentation rates in Lake Batur are as high as 1,017 cubic meters per year, a result of unsustainable farming practices on slopes and unregulated sand mining activities in the villages of Songan A, Songan B, and the customary village of Yeh Mampeh. Over a 37-year period (1975–2012), the lake's depth has decreased by 7.8 meters, reducing its water volume by an alarming 15.29%. Much of this sedimentation is due to a combination of unsustainable land use in the upper catchment and ongoing encroachment of agriculture into the lake's riparian zones, which are legally protected but heavily used for farming and residential purposes (P3E Bali-Nusra, 2018)[2].

Water quality in Lake Batur has been heavily compromised due to agricultural runoff, with nitrate and phosphate levels well above regulatory standards, contributing to eutrophication. High levels of Chemical Oxygen Demand (COD), often exceeding 50 mg/L, indicate the presence of organic pollutants, further reducing dissolved oxygen levels in the lake, which severely affects aquatic biodiversity. As of 2023, the number of floating net cages used for fish farming in Lake Batur increased to 12,200, contributing to nutrient pollution from uneaten fish feed and fish waste.

The riparian zones of Lake Batur are also home to unique biodiversity, including critically endangered mammals like the mouse deer (*Muntiacus muntjak*) and pangolin (*Manis javanica*). However, habitat degradation due to human encroachment threatens these species. Additionally, the Panelokan Nature Tourism Park and Mt. Batur-Bukit Payang Nature Recreation Park, which are legally designated as IUCN Category IV protected areas, are under increasing pressure from tourism development, further fragmenting habitats and reducing biodiversity.

Lake Limboto

Lake Limboto, situated in Gorontalo, has experienced the most dramatic physical changes of the three lakes. Over the past century, the lake's area has shrunk from 8,000 hectares in 1932 to just 3,000 hectares by 2004. Sedimentation has filled much of the lake, with annual sediment loads reaching 4.42 million tons from the Alo Pohu River, the largest of the 23 rivers feeding the lake. Other major contributors include the Biyonga and Marisa rivers, which together account for an additional 27.6% of the lake's sedimentation load.[3]

This dramatic shrinking of the lake has also diminished its function as a flood buffer for surrounding communities. Without adequate sediment management and erosion control in the lake's catchment area, the capacity of Lake Limboto to regulate floods will continue to decline. Meanwhile, water hyacinth and hydrilla have taken over vast portions of the lake, further reducing its ability to support fisheries and migratory bird species. Lake Limboto sits along the East Asia–Australasia Flyway, making it a critical habitat for migratory species such as the Pacific golden plover (*Pluvialis fulva*) and the glossy ibis (*Plegadis falcinellus*). However, the declining health of the lake threatens the long-term viability of this globally significant bird habitat.

Water quality in Lake Limboto has reached critical levels. Nitrate concentrations of up to 114 mg/l and phosphate levels exceeding 1.6 mg/l contribute to severe eutrophication (Lihawa and Mahmud, 2017)[4], promoting toxic algae blooms that further degrade aquatic habitats. Dissolved oxygen levels frequently fall below sustainable thresholds, threatening the survival of native fish species, including *Giuris margaritacea* and *Glossogobius giuris*, both of which have seen substantial population declines. Invasive species, including Nile tilapia and water hyacinth, dominate the lake, outcompeting native flora and fauna, contributing to habitat loss, and undermining local fisheries.

Climate Vulnerabilities further compound these problems. All three lakes face heightened vulnerabilities due to increasingly erratic rainfall, temperature fluctuations, and evaporation rates. Lake Rawapening's fluctuating water levels, exacerbated by inconsistent rainfall, heightened sedimentation rates and nutrient runoff. Lake Batur's status as a closed lake without natural outlets makes it especially sensitive to evaporation, upwelling events, and water contamination during droughts. In Lake Limboto, intense seasonal rains accelerate the erosion of steep agricultural lands surrounding the lake, while drought conditions lead to the temporary conversion of exposed lakebeds into agricultural land, compounding the sedimentation problem.

The socio-economic impacts of these environmental changes are profound. Communities surrounding these lakes are largely dependent on agriculture, fisheries, and eco-tourism, all of which are under threat from the

lakes' declining health. In 2023, Indonesia's national poverty rate stood at 9.4%, with a significant proportion of the population in rural areas, such as those around the three lakes, relying on ecosystem services that are becoming increasingly fragile. Without intervention, the lakes' capacity to support local livelihoods and biodiversity will continue to diminish, exacerbating poverty and inequality.

Key drivers of environmental change

The health of Indonesia's lake ecosystems is influenced by a complex interplay of factors, including population growth, economic pressures, weak regulation, and climate change. The country's population has grown significantly, from 90.1 million in 1960 to 275.77 million in 2022. This rapid increase, coupled with limited economic alternatives for local communities, has driven unsustainable land use, land cover changes, and over-exploitation of natural resources as the demand for income and food, both from land-based activities and fisheries, continues to rise.

A lack of coordination among key sectors, along with weak regulatory oversight, further exacerbates ecosystem degradation. Existing regulations often fail to address the integrated needs of hydrological catchments or provide proper lake rehabilitation. For example, spatial planning and local development efforts rarely prioritize the sustainable provision of ecosystem services or the protection of sensitive environmental areas. This is also influenced by budgetary considerations as rehabilitating lakes is a costly undertaking for local governments and requires integrated approaches involving multiple stakeholder, including local communities.[5] In many cases, overlapping interests between economic development and environmental sustainability lead to decisions that overlook long-term ecological health.

Climate change also plays a significant role, with increased variability in floods, droughts, temperatures, and flow patterns impacting lake ecosystems and the broader food production systems within lake catchments. Smallholder farmers, who make up the majority of Indonesia's agricultural workforce and often own less than a hectare of land, have limited capacity to adapt to these climatic changes. Additionally, climate change can enhance the spread of invasive alien species (IAS) by giving them a competitive edge over native species or increasing pollution from aquaculture systems.

The primary threats facing Indonesia's lakes, as seen in Lake Rawapening, Lake Batur, and Lake Limboto, stem from sedimentation, agricultural runoff, invasive species, and pollution originating from inland fisheries, namely floating net cages. Lake Rawapening suffers from sediment accumulation due to unsustainable agricultural practices and deforestation in its catchment area. The spread of water hyacinth, an invasive species, worsens the problem by clogging waterways and depleting oxygen levels. Although sediment traps and check dams have been installed, poor land management practices continue to undermine their effectiveness.

Similarly, Lake Batur is plagued by sedimentation and nutrient runoff from sand mining and fertilizer-intensive agriculture. Weak enforcement of riparian buffer zones has led to residential and agricultural encroachment into protected areas, further degrading the lake's water quality. Lake Limboto exemplifies the

challenges of unregulated agricultural expansion on steep slopes, where sedimentation has drastically reduced its capacity. Invasive plant species choke the lake, while nutrient pollution drives eutrophication, harming fish populations and local biodiversity.

Baseline Conditions and absence of the Project

Without this project, the degradation across all three lakes will continue, further reducing their capacity to support local communities and biodiversity. In **Lake Rawapening**, unchecked sedimentation will shrink the lake's size, with sediment levels reaching an unsustainable 2,350 tons annually from the surrounding sub-catchments. In **Lake Batur**, continued agricultural encroachment and sand mining will deepen sedimentation, degrading water quality and reducing fisheries yields. **Lake Limboto**, which has already lost 60% of its area, will face continued shrinking, likely becoming unsuitable as a flood buffer, leaving communities more vulnerable to flooding.

The ongoing loss of biodiversity, including critically endangered species like the **Javan hawk-eagle** (*Nisaetus bartelsi*) in Lake Rawapening's catchment, and the **maleo** (*Macrocephalon maleo*) in the broader Limboto-Bolango-Bone basin, will accelerate, with far-reaching ecological and socio-economic impacts. Migratory birds that rely on Lake Limboto as part of the East Asia–Australasia Flyway will find fewer resting areas, further straining global conservation efforts.

Governance gaps and stakeholder engagement

The governance of Indonesia's lake ecosystems has been fragmented, with responsibilities spread across different sectors and weak coordination between ministries and local governments. For example, **Lake Batur** is governed by spatial planning laws that are not consistently enforced, leading to conflicting land-use practices. Similarly, in **Lake Limboto**, past efforts to reduce sedimentation have not adequately engaged local communities or addressed unsustainable agricultural practices, which continue to degrade the lake.

The GEF-8 LAKES project aims to address these governance gaps by establishing multi-stakeholder platforms at each lake, aligning the efforts of government agencies, local communities, NGOs, and the private sector. Participatory governance mechanisms (Output 2.2) will ensure that interventions are aligned with local needs and build local ownership, addressing past failures in enforcement and stakeholder engagement. Teams for lake rehabilitation and restoration in Lake Rawapening, will be expanded and strengthened to support lake management.

This project aims to bridge governance gaps by unifying policy, regulation, and enforcement across all levels of governance, as outlined in Components 1 and 3. Component 1 will focus on strengthening the governance framework for integrated lake ecosystem management, harmonizing national policies with local realities and ensuring that lake management plans are fully integrated into district and provincial-level decision-making

processes (Output 1.1). By aligning efforts across ministries and local governments, the project will help create a cohesive, enforceable regulatory environment that promotes sustainable land and water use. Component 3 will focus on building local capacity, fostering knowledge sharing, and enhancing community engagement (Outputs 3.1 and 3.2). This will provide local authorities and communities with the tools and resources needed to implement and enforce regulations effectively, creating a more adaptive governance system that is responsive to the specific needs of each lake.

By addressing these governance challenges, the project will ensure that national policies, such as those set out in Law Number 32 of 2009 and the Government Regulation Number 22 of 2021 concerning Environmental Protection and Management as well as Law Number 17 of 2019 and the forthcoming regulation on Water Sources, are not only implemented but also sustained through strengthened local institutions and community involvement. This integrated approach will enable and inform best practices for more effective and resilient lake ecosystem management across Indonesia.

Narratives of future sustainability

In the absence of the project, all three lakes will continue to deteriorate, leading to escalating environmental and socio-economic crises. **Lake Rawapening** could lose its capacity to support agriculture and fisheries within the next decade due to rising sediment levels and continued water hyacinth infestation. **Lake Batur** risks becoming uninhabitable for fish and aquatic life, reducing its value as a tourist destination, while local communities face increased poverty due to declining agricultural yields. **Lake Limboto** could lose its capacity as a flood buffer entirely, leading to increased flood risks for the surrounding areas and the complete collapse of its ecosystem services.

However, with the project, the outlook shifts dramatically. By improving water quality, controlling sedimentation, and restoring biodiversity, the lakes will regain their capacity to support local communities and ecosystems. The integrated governance structures established through the project will ensure long-term sustainability, allowing for adaptive management in response to changing conditions.

Current lake management and governance – baseline scenario

Sustainable lake management has been a priority for the Government of Indonesia for nearly four decades. In February 2022, during the 5th session of the United Nations Environment Assembly (UNEA5.2), Indonesia led the adoption of the 'Resolution on Sustainable Lake Management.' This resolution emphasizes international cooperation on regulation, budget allocations, and technology to address entire lake basins. It also calls for integrating lakes into national plans, such as climate adaptation, water resource management, and biodiversity conservation, while building capacity among stakeholders, including local communities, to support lake management efforts.

Indonesia has been laying the groundwork for sustainable lake management since the 1980s, and in 2009, nine key ministries signed the Bali Agreement[6], which outlined seven programs to address the degradation of 15 priority lakes. These lakes were selected based on their degree of degradation (e.g., sedimentation, pollution, eutrophication), their economic and cultural importance (e.g., hydroelectric power, agriculture, fisheries, drinking water, and tourism), as well as their strategic environmental value, biodiversity, and disaster risk. The priority lakes include Toba, Singkarak, Rawa Pening, Batur, Limboto, and others across Indonesia.

To support these efforts, the Ministry of Environment issued 'The Grand Design of Indonesian Lake Conservation and Rehabilitation' in 2012, guiding governmental sectors, local communities, and stakeholders in creating healthier lake ecosystems. This plan has been reinforced by the National Medium-Term Development Plan (RPJMN) for 2020-2024, which highlights lake conservation as a key priority for revitalizing national priority lakes. The plan will continue to be prioritized for the upcoming RPJMN period from 2025 to 2029.

In 2021, Presidential Decree No. 60/2021 was enacted to further reinforce the restoration of national priority lakes. It emphasizes the need for integrated solutions to manage lake ecosystems, considering economic, social, cultural, and environmental aspects. Each of the 15 lakes has specific management programs outlined under this decree, focusing on restoring ecosystems while balancing developmental pressures. This aligns with ongoing national efforts to improve watershed management, a priority since the 1980s, with 108 priority watersheds identified out of more than 17,000 nationwide. However, a 2019 review by the Ministry of National Development Planning Agency (Bappenas) identified several shortcomings, including the challenge of coordinating across different jurisdictions. This presents a key lesson for the GEF-8 LAKES project, which will promote an integrated lake ecosystem management strategy, as reflected in Output 1.1 (regulatory framework) and Output 2.1 (initiating integrated approaches in the three target lake ecosystems).

A major step toward understanding lake degradation came with the introduction of a lake degradation classification system, consisting of 11 criteria, under DG PDASRH Decree 4/2019 (see **Table 1**). This system provides a uniform framework for characterizing the degradation status of the 15 priority lakes. However, its applicability has been constrained by several factors, including limited data availability and the lack of standardized methodologies for estimating key parameters. More details are provided in the *Baseline analysis on the lake degradation classification system* (see **Annex Q**). Local authorities face significant capacity limitations in implementing the decree, which has prevented the classification system from achieving its full potential as a management tool (Output 1.3).

Table 1: Lake degradation classification criteria (DG PDASHL Decree 4/2019)

No.	Parameter	Explanation	Good	Disturbed	Degraded	Remark
1	Rate of water body area composition	Shrinking of lake water body area	<5%	5-25%	>25%	Volcanic and tectonic lakes
2	Rate of shallowing	Percentage of shallowing	<5%	5-10%	>10%	
3	Water quality	Water quality status	Not polluted	Slightly polluted	Moderately - heavily polluted	
4	Trophic status	Trophic Status Index	Oligotrophic - mesotrophic	Eutrophic	Hypereutrophic	Volcanic and tectonic lakes

			Eutrophic	-	Hypereutrophic	Floodplain lakes
5	Biodiversity	Population trends of native/endemic flora/fauna	Abundant, stable populations	Populations declining	Significant population decline / extinct	
6	Aquatic weed cover	Area of aquatic weed cover compared to lake area	<1%	1-5%	>5%	Volcanic and tectonic lakes
			<5%	5-20%	>20%	Floodplain lakes
7	Vegetation cover in the riparian zone	Vegetation cover area compared to riparian area	>90%	50-90%	<50%	
8	Vegetation cover in the littoral zone	Vegetation cover area compared to area of the littoral zone	>90%	50-90%	<50%	
9	Vegetation cover in the catchment area	Vegetation cover area compared to water catchment area	>30%	15-30%	<15%	
10	Waste piles in the littoral zone and lake waters	Distribution of waste piles in the littoral zone and lake waters	No waste	Minimal amounts of waste	Waste piles	
11	Built-up land cover in the littoral zone	Built-up land area compared to area of the littoral zone (at certain locations)	0%	1-5%	>5%	

The system also lacks consideration for carbon balance, a critical component for understanding the role of lake ecosystems in greenhouse gas emissions within the agriculture, forestry, and other land use (AFOLU) sector. Given Indonesia's commitments under the Paris Agreement and its national strategies for climate adaptation, addressing these data gaps and integrating carbon accounting into lake management is essential for climate resilience (Output 1.2).

Another challenge involves data fragmentation and limited sharing across stakeholders. Data relevant to lake ecosystem conditions are dispersed across various governmental and non-governmental entities, and inconsistencies in data compatibility have hindered collaboration. The lack of a unified data management system is a major obstacle, but the GEF-8 LAKES project aims to address this through the creation of a national database system for lake ecosystem management (Output 1.3), enabling better coordination, monitoring, and adaptive management of lake ecosystems.

Barrier analysis

The overall project objective is to protect biodiversity and safeguard the resilience of Indonesia's lake ecosystems by establishing integrated governance systems, empowering local communities with sustainable livelihoods, and enabling national-scale adoption of sustainable lake management practices . However, several barriers currently hinder the mainstreaming of these approaches across the country's

priority lake ecosystems. These barriers, if not addressed, will impede the achievement of long-term sustainability and climate-resilience objectives. The project's outcomes and outputs are specifically designed to address these barriers and create the enabling conditions needed for systemic change.

Barrier 1: Lack of a cohesive regulatory and programmatic framework aligned across key stakeholders, and absence of a dedicated information system on lakes. One of the main obstacles to effective lake management is the fragmented governance structure. Regulatory frameworks for lake management often vary across sectors, and stakeholders (e.g., national, provincial, and district authorities) operate with different priorities and objectives. While national-level regulations such as Law 32/2009 and Law 17/2019 provide some guidance, there is no dedicated framework that aligns key stakeholders to a unified vision for sustainable lake management. Furthermore, there is no national-level information system that provides a consistent, comprehensive view of lake ecosystems, limiting the ability of decision-makers to monitor, evaluate, and enforce sustainable management practices.

Project Response: The project will directly address this barrier by strengthening the regulatory framework for lake ecosystem management. Under **Output 1.1**, the project will facilitate the development of a Government Regulation, policy frameworks, guidelines, and implementation mechanisms that harmonize lake management regulations across sectors and levels of government. This will create a shared vision for integrated lake ecosystem management that is reinforced by cohesive policies from the national to the local level.

In addition, the project will strengthen national information systems on **lake ecosystems** under **Output 1.3**, which will provide stakeholders with real-time data on lake conditions, water quality, erosion/sedimentation rates, biodiversity, and other key indicators. This system will not only enhance regulatory oversight but will also serve as a critical tool for cross-sectoral collaboration and adaptive management, allowing different stakeholders to work from the same data and analyses.

Barrier 2: Limited implementation of integrated approaches for lake ecosystem management and restoration. Strengthened, lake ecosystem information systems under **Output 1.3**, which will provide stakeholders with real-time data on lake conditions, water quality, erosion/sedimentation rates, biodiversity, and other key While some technical solutions, such as sediment traps and fishery management practices, have been implemented in individual lakes, there are few examples of fully integrated, landscape-level approaches to lake management. These approaches, which incorporate land use, water quality, biodiversity conservation, and livelihoods, are necessary for the sustainable management of lake ecosystems. Additionally, local communities have limited opportunities and incentives to engage in sustainable practices, as most interventions to date have not provided clear economic or social benefits to the people who depend on these ecosystems.

Project Response: The project will demonstrate successful integrated approaches to lake ecosystem management in three priority lakes through **Component 2**, specifically under **Outputs 2.1, 2.2, and 2.3**. By promoting nature-based solutions (NbS), climate-resilient agriculture, and eco-tourism, the project will offer practical examples of how these integrated approaches can be implemented. These pilot interventions will also

provide tangible benefits to local communities, creating incentives for the adoption of sustainable practices. To facilitate scaling, the main project interventions will be documented through dedicated business cases including cost benefit analyses and financing options.

For example, under **Output 2.3**, the project will promote climate-resilient livelihood opportunities that are directly linked to biodiversity conservation and lake restoration, such as agroforestry, improved agricultural practices, insertion into green value chains, sustainable fisheries, and eco-tourism. These efforts will reduce the pressure on lake ecosystems while providing communities with economic alternatives to unsustainable practices like sand mining or overfishing. In addition, **Output 2.2** will strengthen multi-stakeholder governance mechanisms, ensuring that local communities have a say in the decision-making process and can actively participate in the management and restoration of their lake ecosystems.

Barrier 3: Limited knowledge, data availability, and learning opportunities to support the adoption of integrated lake ecosystem management. Another significant barrier is the lack of robust, accessible knowledge on lake ecosystem health and management. The absence of comprehensive data and learning platforms limits the ability of local authorities, policymakers, and community groups to adopt and implement best practices. Capacity-building efforts to date have been piecemeal and have not provided the necessary depth to foster long-term, systemic change.

Project Response: To address this barrier, the project will prioritize knowledge sharing and capacity-building initiatives under **Component 3**. **Output 3.1** will focus on the development of a **Lake Center of Excellence and Knowledge Hub**, which will serve as a national platform for sharing best practices, eco-edu-tourism, scientific research, and technical guidelines on lake management. This platform will facilitate peer-to-peer learning, both domestically and internationally, and will support the replication of successful interventions in other lake ecosystems.

Additionally, under **Output 1.2**, the project will develop **methodologies for lake ecosystem health assessment and monitoring**, ensuring that stakeholders have access to high-quality, standardized data on lake conditions. This will enable local authorities to make informed decisions, adapt management strategies as conditions change, and measure the long-term impact of their interventions. Capacity-building programs will also be implemented to enhance the technical skills of local stakeholders, ensuring they can fully utilize the tools and knowledge provided.

Barrier 4: Challenges in ensuring long-term sustainability and scalability of integrated lake ecosystem management interventions.

Even with successful demonstrations of integrated management approaches, scaling these interventions to other lake ecosystems and ensuring their long-term sustainability is a challenge. Without proper financial mechanisms, governance structures, and long-term capacity building, there is a risk that these interventions will not endure beyond the project's lifespan.

Project Response: The project's approach to overcoming this barrier focuses on institutionalizing best practices and creating the financial and governance structures needed for sustainability. **Output 2.2** will strengthen local governance mechanisms by establishing multi-stakeholder platforms at each lake, bringing together government agencies, local communities, NGOs, and the private sector to coordinate ongoing management efforts. This participatory approach ensures that the project interventions are locally owned and maintained over the long term.

Moreover, **Output 1.3** will strengthen national **information systems on lake ecosystems** that will continue to function beyond the project's duration, providing a critical tool for ongoing monitoring and adaptive management. This data-driven approach will also support the government's broader efforts to scale up integrated lake management across Indonesia. Finally, **Output 3.2** will promote knowledge sharing and collaboration, allowing lessons learned from this project to be replicated across other lake ecosystems both nationally and internationally.

Building on past lessons for sustainable success

Past initiatives to address the environmental challenges facing Indonesia's lakes have made important contributions, but they have also revealed key lessons about the complexities of effective lake management. The strategic project approach incorporates these lessons to ensure an integrated and adaptive framework that can deliver long-term results.

1. **Strengthening Integrated Approaches**: Past projects often focused on specific issues, such as sediment control or pollution mitigation, without considering the full range of ecological and socio-economic factors. The project approach connects land use, water quality, biodiversity conservation, and community livelihoods, ensuring that interventions reinforce one another and avoid trade-offs that can undermine progress (Output 1.1). The GEF-5 (SMPEI – GEF ID 5764) and GEF-6 (IMPLI – GEF ID 9239) projects on peatland management demonstrated best practice in integrated planning approaches.
2. **Engaging Local Communities and Improving Governance**: One of the key lessons is the need for local ownership and institutional coordination. While spatial planning regulations have been implemented, enforcement has often been weak due to gaps in stakeholder engagement. By strengthening participatory governance mechanisms (Output 2.2), the project aims to ensure that sustainable practices are adopted and maintained long term, with local communities playing an active role in decision-making.
3. **Enhancing Sustainable Livelihoods**: Previous interventions often focused on technical solutions without addressing the economic drivers of environmental degradation. This project emphasizes biodiversity conservation linked to climate-resilient livelihood opportunities (Output 2.3), ensuring that communities benefit from protecting their ecosystems through agroforestry, eco-tourism, and sustainable fisheries.
4. **Leveraging Adaptive Management and Data-Driven Decision-Making**: A lack of and/or limited sharing of accurate environmental data hampered past projects. The GEF-8 LAKES project prioritizes

the strengthening of methodologies for lake ecosystem health assessment (Output 1.2) and information systems (Output 1.3) to enable ongoing monitoring and adaptive management, ensuring that interventions can be fine-tuned for maximum impact.

5. **Learning from Success and Scaling Up**: The project will build on local scale successful initiatives, such as sediment trapping systems in Lake Limboto and community-led sustainable agriculture, e.g., in Rawa Pening where some local farmers have implemented terrace systems, and best practices in horticulture production in the Lake Batur catchment. By sharing these lessons through a national knowledge hub (Output 3.1) and fostering cross-lake collaboration, the project aims to replicate these successes across all three lakes.
6. **Streamlining policy coherence from national to subnational**. The GEF-5 (SMPEI – GEF ID 5764) and GEF-6 (IMPLI – GEF ID 9239) projects on peatland management demonstrated the importance of good governance, particularly policy coherence between different levels of government

Project approach and justification

This project has been selected because it offers an integrated approach that addresses the root causes of environmental degradation, connects biodiversity conservation with sustainable development, and strengthens governance at multiple levels. The GEF-8 LAKES project leverages adaptive management, community engagement, and cross-sectoral coordination to ensure that interventions are effective, sustainable, and scalable. By focusing on nature-based solutions, the project will not only address current environmental challenges but also build resilience against future climate change impacts, ensuring that the lakes continue to provide essential services to both people and ecosystems.

Policy coherence: The GEF-8 LAKES project represents a critical intervention in addressing the pressing issue of lake ecosystem degradation in Indonesia. By implementing integrated lake ecosystem management approaches, the project aims to safeguard biodiversity, strengthen climate resilience, and improve the livelihoods of local communities. The project aligns with Indonesia's national policies on environmental protection, climate adaptation, and sustainable development, including Presidential Decree No. 60/2021 and the National Medium-Term Development Plan (RPJMN) 2020-2024. Through the development of a Government Regulation on Integrated Lake Ecosystem Management, the project will contribute to strengthening policy coherence across sectors such as agriculture, water, and forestry, ensuring that lake management is incorporated into broader land-use planning and governance frameworks.

Collective action: Moreover, the project will build human, institutional, and technical capacities at national, regional, and local levels, enhancing the ability of stakeholders to implement and sustain integrated lake management practices. By fostering collaboration among government agencies, local communities, civil society, and the private sector, the project will ensure that the outcomes are enduring and scalable. In doing so, the GEF-8 LAKES project will not only restore and protect critical lake ecosystems but will also create a model for replicable, sustainable environmental management across Indonesia's diverse landscapes.

In **conclusion**, the GEF-8 LAKES project presents a robust, inclusive, and data-driven framework for restoring Indonesia’s critical freshwater ecosystems. By addressing the key drivers of degradation, improving

governance, and linking conservation with economic opportunities, the project is poised to deliver long-lasting positive change for the lakes and the communities that depend on them.

---

[1] Bayu E.C. Sadewo, M.F. Ni'am, Hermin Poedjiastoeti. 2022. Prediction of Sedimentation Rate in Sub-Catchment Rawapening, District of Semarang (in Bahasa Indonesia). *BRILIANT: Jurnal Riset dan Konseptual*. Vol. 7 (1).

[2]P3E Bali-Nusra. 2018. Environmental Capacity-Based Management Plan of Water and Land Resources in Lake Batur and its Catchment (in Bahasa Indonesia). P3E Bali-Nusra, Ministry of Environment and Forestry.

[3] Source: Provincial Development Planning Agency (Bappeda), Gorontalo Province, 2024.

[4] Fitryane Lihawa dan Marike Mahmud. EVALUASI KARAKTERISTIK KUALITAS AIR DANAU LIMBOTO Evaluation of Water-Quality Characteristics in Limboto Lake Jurnal Pengelolaan Sumberdaya Alam dan Lingkungan Vol. 7 No. 3 (Desember 2017): 260-266. 260 doi: 10.29244/jpsl.7.3.260-266

[5] https://doi.org/10.3390/su16020704

[6]At that time, the nine key ministries included environment, forestry, marine affairs and fisheries, culture and tourism, public works, energy and mineral resources, home affairs, research and technology, and national development planning.

---

[2] Haryani, G.S. 2021. Sustainable use and conservation of inland water ecosystems in Indonesia: Challenge for fisheries management in lake and river ecosystems. 2021 IOP Conf. Ser.: Earth Environ. Sci. 789 012023.

[3] Patricio H. et al. 2023. *A strategic framework to accelerate urgent conservation action for ASAP Freshwater Species in Southeast Asia.* IUCN SSC Asian Species Action Partnership. Singapore.

[4] https://www.ilec.or.jp/wp-content/uploads/3_Abstract_Laksmi-Dhewanthi.pdf

[5] ILOSTAT, International Labour Organization, www.ilostat.ilo.org/data (reported in the World Bank DataBank (https://databank.worldbank.org)

[6] Local communities are people who association with the lands and waters that they have traditionally live on or used that may include peoples of indigenous descent and culturally diverse (UN Convention on Biological Diversity, 2006)

[7] http://dx.doi.org/10.1016/j.ecolecon.2017.03.001

[8] SEAFDEC. July 2023. *Fisheries Country Profile: Indonesia (2022)*. Southeast Asian Fisheries Development Center

[9] https://e360.yale.edu/features/how-pollution-is-devastating-an-indonesian-lake

[10] Indonesia-Investments. 10 May 2022. *Hydro power generation in Indonesia; challenges & opportunities of this renewable energy source*.

[11] World Data Atlas, Indonesia. Knoema, https://knoema.com (accessed on 23 September 2024)

B. 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 guidance document. (Approximately 3-5 pages) see guidance here

B.1 Short Project description

Introduction to the project context and challenges

Indonesia's freshwater lake ecosystems, which are crucial for both biodiversity and the livelihoods of local communities, are experiencing severe degradation. The primary causes of this decline include unsustainable agricultural practices, deforestation, sedimentation, and the spread of invasive species. These environmental pressures are further exacerbated by climate change and weak governance structures. To address these challenges, the GEF-8 LAKES project seeks to establish a sustainable lake ecosystem management framework, focusing on three priority lake ecosystems: Lake Rawapening, Lake Batur, and Lake Limboto.

The project's theory of change is built on the understanding that effective lake management requires strengthened governance, increased community resilience, and enhanced knowledge sharing. These three pillars are seen as essential for achieving long-term sustainability. The project aims to integrate ecosystem management with climate-resilient livelihood opportunities for local communities, particularly targeting vulnerable groups such as women and indigenous populations.

By adopting a holistic, multi-sectoral approach, the project ensures that its outcomes will endure beyond the project’s lifecycle and remain resilient to future environmental changes. Through the creation of an enabling environment for integrated lake management, successful demonstrations of interventions, and widespread knowledge sharing, this project provides a strategic roadmap for sustainable lake governance in Indonesia.

Project components overview

The GEF-8 LAKES project consists of three main components and M&E and project management, each designed to address specific barriers to sustainable lake ecosystem management in Indonesia. Together, these components build a comprehensive approach to improving lake governance, management, and community engagement, while delivering both environmental and socio-economic benefits.

Component 1: Strengthening the enabling environment for integrated lake ecosystem management and governance. This component focuses on enhancing the regulatory and institutional frameworks necessary for effective lake management. It will develop and implement policies, guidelines, and legal frameworks to create a solid foundation for the protection and restoration of lake ecosystems. Key outputs include:

- Output 1.1: Policy frameworks and guidelines on integrated lake ecosystem management developed and/or strengthened.
- Output 1.2: Methodologies for lake ecosystem health assessment and monitoring strengthened.
- Output 1.3: National information systems on lake ecosystem management strengthened and operationalized.

Component 2: Demonstrating multiple environmental and social benefits through integrated lake ecosystem management. This component will implement integrated lake management practices in three demonstration areas (Lake Rawapening, Lake Batur, and Lake Limboto), focusing on improving biodiversity conservation and climate-resilient livelihoods. Participatory planning and implementation processes will ensure that local communities, especially vulnerable groups, benefit from sustainable management approaches. Key outputs include:

- Output 2.1: Participatory integrated lake ecosystem management plans developed and implemented.
- Output 2.2: Multi-stakeholder governance mechanisms for integrated lake ecosystem management strengthened.
- Output 2.3: Nature-based solutions (NBS) and climate resilient livelihoods, promoted, developed, and implemented.

Component 3: Enhancing knowledge sharing and learning for upscaling integrated lake ecosystem management. This component aims to create platforms for knowledge dissemination, capacity building, and learning. It will establish Lake Centers of Excellence to serve as hubs for raising awareness and sharing best practices in lake ecosystem management. It will also promote collaboration among stakeholders at all levels. Key outputs include:

- Output 3.1: Lake Centers of Excellence and Knowledge Hubs developed.
- Output 3.2: Knowledge sharing, learning systems, and collaboration networks established.

The project will establish a **participatory, gender-sensitive monitoring and evaluation framework** to ensure that project activities are tracked and assessed for effectiveness. Feedback from stakeholders will be used to adjust interventions in real time, ensuring that the project remains adaptive and responsive to changing conditions.

Theory of Change

The Theory of Change for the GEF-8 LAKES project outlines a clear pathway for addressing the environmental and social challenges impacting Indonesia's lake ecosystems. The project's approach is built on tackling the root causes of ecosystem degradation, mainstreaming biodiversity conservation and climate resilience, and fostering sustainable livelihoods for local communities. The project strategy is predicated on facilitating systemic change by improving management of lake ecosystems at the institutional level (national and sub-national), the local level (e.g., village development and extension services), and the site level (e.g., alternative livelihoods among small-scale producers, women's groups, etc.).Interventions across all components will work in synergy to strengthen governance, improve on-the-ground management, and ensure long-term sustainability through knowledge sharing and learning. The causal pathways leading to each of the project outcomes are discussed below and illustrated in **Figure 2**.

Outcome 1: Enhanced capacity for participatory and sustainable lake ecosystem management and governance in Indonesia. The project will strengthen the enabling environment for integrated lake ecosystem management by developing and implementing regulatory frameworks and guidelines (Output 1.1), improving

methodologies for lake ecosystem health assessment and monitoring (Output 1.2), and strengthening national information systems on lake ecosystem management (Output 1.3). This outcome is essential in building a strong policy and institutional foundation, ensuring that regulatory tools guide the long-term sustainable management of lake ecosystems across the country. By creating a supportive legal and governance framework, the project will foster coordinated action across sectors, ensuring that lake management approaches are both integrated and legally supported.

Outcome 2: Improved integrated landscape and lake ecosystem governance and management that enhances biodiversity and climate-resilient livelihoods of poor and vulnerable communities, particularly women and youth in the three demonstration areas. The project will develop and support implementation of participatory lake ecosystem management plans (Output 2.1) in the three demonstration areas, focusing on biodiversity conservation, climate resilience, and inclusive livelihood development. Engaging local communities, particularly women and youth, in planning and implementation processes will empower these groups and promote sustainable livelihoods through nature-based solutions (Output 2.3). Strengthening multi-stakeholder governance mechanisms (Output 2.2) will facilitate collaboration across sectors and stakeholders, ensuring that integrated management plans are effectively supported at all levels. This outcome will drive social and environmental co-benefits, enhancing biodiversity while improving the livelihoods of local communities.

Outcome 3: Enhanced community awareness, knowledge, contribution, and collaboration among stakeholders on lake ecosystem management, rehabilitation, and restoration. The project will establish Lake Centers of Excellence and Knowledge Hubs (Output 3.1) in the target areas, which will serve as focal points for disseminating best practices and raising awareness about lake ecosystem management. Knowledge-sharing systems and collaboration networks (Output 3.2) will foster ongoing learning and adaptive management, ensuring that stakeholders—including government, civil society, the private sector, and local communities—can share experiences and lessons learned. This outcome will build stakeholder capacity, providing a strong foundation for scaling up integrated lake ecosystem management across Indonesia and beyond.

Project implementation and results strengthened through **participatory and gender-sensitive monitoring and evaluation**. The project's monitoring and evaluation (M&E) framework will ensure that activities are continuously tracked and assessed with a participatory and gender-sensitive approach. Real-time feedback from stakeholders, combined with data from the national lake ecosystem health assessment protocol (Output 1.2), will facilitate adaptive management, enabling the project to adjust interventions based on evolving needs. This outcome will help ensure that project results are sustained over time and that all interventions contribute to lasting environmental and social impacts.

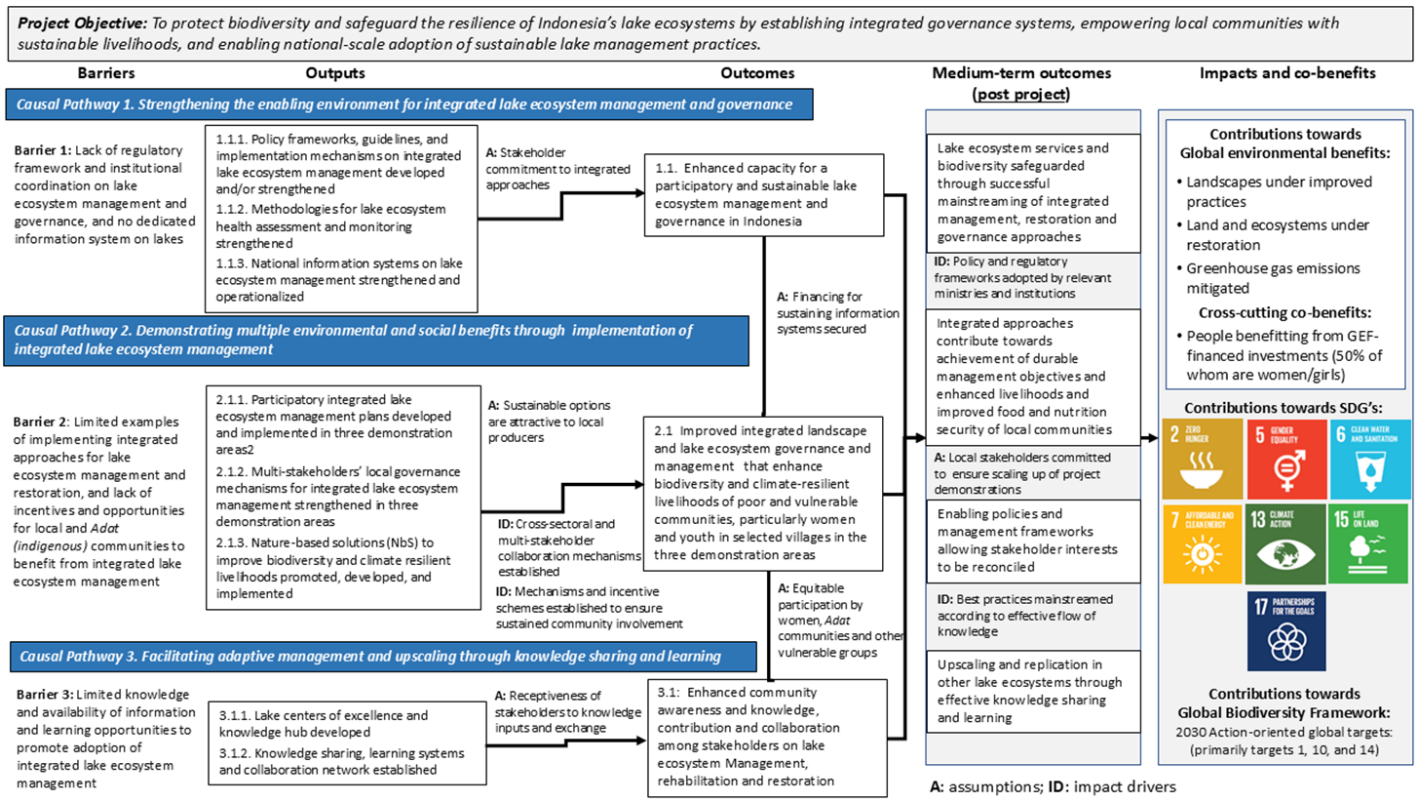


Figure 2: Project theory of change

Incremental Reasoning: What Would Happen Without the GEF Project

In a "business-as-usual" future without GEF funding, Indonesia's lake ecosystems would continue to degrade due to the lack of integrated management and coordination across key sectors. Agricultural, water, and environmental stakeholders would remain fragmented, leading to the expansion of unsustainable land use practices, deforestation, and habitat degradation that further contribute to biodiversity loss. Without proper regulation, the unregulated use of fertilizers and increased agricultural runoff would accelerate eutrophication and pollution in lakes and other natural water bodies. Erosion would worsen, reducing the hydraulic capacities of lakes, thereby increasing the risks of flooding, deteriorating water quality, and further fragmenting critical biodiversity habitats.

The impacts of climate change, including increased variability in precipitation, intensified floods and droughts, and temperature fluctuations, would compound these issues. Without resilience-building measures—such as forest restoration and improved land management — the capacity of local communities and ecosystems to cope with climate variability would remain limited. The unchecked spread of invasive alien species (IAS) would further threaten both aquatic and terrestrial biodiversity, while degraded lake systems would lose their ability to buffer extreme climate events. Moreover, pollution and reduced water quality would impair nutrient cycling and oxygen levels, severely compromising the lakes' ability to support life and function as carbon sinks, which would reduce their capacity to mitigate climate change.

The GEF project alternative: A cross-sectoral, integrated solution

In contrast, the **GEF-funded project** offers a transformative alternative, focusing on an integrated, cross-sectoral approach to sustainable lake ecosystem management. By mainstreaming sustainable management practices and demonstrating their benefits, the project will deliver a range of global environmental and socioeconomic co-benefits. It will enable collaborative actions among sectors, promoting pro-poor and gender-inclusive approaches that empower rural women, small-scale producers, and vulnerable communities to actively participate in and benefit from sustainable resource management.

Protection of globally significant biodiversity will be strengthened through improved natural resource management practices, restoration of damaged and fragmented habitats, and the implementation of effective IAS control strategies. Local communities will benefit from diversified and sustainable income streams through the promotion of climate-resilient agricultural practices, agroforestry systems, and ecotourism initiatives, which will improve livelihoods while reducing the pressure on natural ecosystems. By enhancing local capacities and knowledge sharing, the project will increase awareness of good agricultural practices, strengthen sustainable fisheries, and promote ecotourism as a viable economic alternative.

Climate change mitigation will be achieved through reduced deforestation, improved soil and water conservation, and increased vegetative cover. Restoration of degraded forest lands and riparian zones will strengthen ecosystem services, including carbon sequestration, water regulation, and biodiversity protection. At the same time, **climate change adaptation** will be addressed by building the resilience of local ecosystems and communities, providing them with the tools and knowledge to manage future climate risks more effectively.

Through improved **land use planning** and strengthened **governance frameworks**, the project will equip local governments and communities with the capacities to engage in sustainable lake management. By embedding lake ecosystem priorities into spatial planning and policy-making processes, the project will reduce vulnerabilities to climate-induced disasters and enhance the adaptive capacities of both ecosystems and communities.

Lasting environmental and social impacts

The project’s interventions will not only benefit the three demonstration areas but will also create lasting resilience across broader lake ecosystems. The cross-sectoral collaboration facilitated by the project, alongside increased knowledge sharing and capacity building, will ensure that the environmental and social gains are **sustainable**. Moreover, the potential for **replication and scaling** across other lake ecosystems in Indonesia will amplify the project's impacts, contributing significantly to **national and global environmental goals**.

Assumptions and impact drivers

The successful implementation of the GEF-8 LAKES project hinges on several critical assumptions and impact drivers that reflect both the external environment and the project's internal dynamics. These assumptions are integral to ensuring that the interventions are feasible, effective, and sustainable, while the impact drivers represent the mechanisms that will help achieve long-term project success. The assumptions reflect a balance between the project's design and the realities of the stakeholders it aims to engage, particularly when it comes to their motivations, capacities, and willingness to adopt sustainable practices. The impact drivers highlight the factors that will enable these assumptions to hold true and the project outcomes to be realized.

The most important assumptions, such as the commitment of stakeholders and the attractiveness of sustainable options, are directly tied to the project's ability to demonstrate tangible co-benefits—particularly improvements in livelihoods. By delivering clear economic incentives, improving livelihoods, and building community resilience, the project can sustain stakeholder engagement at every level. Likewise, the success of cross-sectoral and multi-stakeholder collaboration will depend on the ability to establish trust and effective communication between governmental bodies, private sector actors, and local communities.

These critical assumptions and impact drivers are outlined below:

Key Assumptions and Impact Drivers

- **Assumption: Stakeholders remain committed to integrated approaches.**
  Impact Driver: Demonstrating that sustainable management practices improve livelihoods and the environment at the village level and strongly engage community institutions in the process, providing both economic and social incentives and capacities for communities to remain engaged.
- **Assumption: Financing is secured for sustaining information systems.**
  Impact Driver: Robust information systems help make it possible to establish long-term funding mechanisms, such as public-private partnerships and community-based financial structures, to support ongoing monitoring and data collection.
- **Assumption: Equitable participation by women, local communities, and other vulnerable groups is achieved.**
  Impact Driver: Tailored outreach and empowerment initiatives that give these groups meaningful roles in decision-making, ensuring that the project's benefits are distributed equitably.
- **Assumption: Sustainable options are attractive and accessible to local producers.**
  Impact Driver: Providing clear evidence that climate-smart agricultural practices and nature-based solutions (NBS) offer improved productivity and market access, encouraging adoption.
- **Impact Driver: Cross-sectoral and multi-stakeholder collaboration mechanisms are established and maintained beyond the project.**
  Explanation: The project's success depends on fostering collaboration between governmental bodies, NGOs, the private sector, and local communities. Regular coordination meetings and workshops will be essential to maintain dialogue, build trust, and align interests.
- **Assumption: Knowledge sharing and lessons learned are systematically integrated into ongoing efforts.**
  Impact Driver: Establishing feedback loops between project implementation and policymaking,

ensuring real-time learning informs adaptive management, national policy adjustments, and adaptive capacity development of local extension officers.

Detailed descriptions of project components

Component 1 aims to overcome Barrier No. 1 by strengthening the enabling environment for integrated lake ecosystem management and governance. The expected result is **Outcome 1: Enhanced capacities for participatory and sustainable lake ecosystem management and governance in Indonesia**. To achieve this outcome, the component will deliver the following outputs and activities:

Output 1.1: Policy frameworks and guidelines on integrated lake ecosystem management developed and/or strengthened.

As outlined in the baseline scenario and detailed in **Annex P** (Baseline policy/regulatory gap analysis), there is a pressing need to enhance the regulatory framework for integrated lake ecosystem management. This output will support the Ministry of Environment and Forestry (MoEF) in developing a **Government Regulation on Integrated Lake Ecosystem Management** under **Environmental Law 32/2009**. This regulation will ensure the legal protection, maintenance, and restoration of lakes in Indonesia.

Building on **Presidential Instruction No. 1 of 2023**, which focuses on biodiversity mainstreaming, and **Presidential Decree 60/2021**, which targets the preservation and restoration of 15 priority lakes, the proposed regulation will incorporate innovative approaches such as lake zonation. It will also provide a solid legal foundation for establishing sub-national regulations, spatial plans, and legally binding lake management plans.

The project will work closely with the MoEF team, providing technical and policy-legal assistance in the development of the Government Regulation. An academic paper on the regulation was prepared and submitted during the project preparation phase in 2024, to initiate the legal process and ensure the regulation is included in the upcoming parliamentary agenda. Considering that the process has been initiated, it is envisaged that the Government Regulation will be developed and enacted within the lifespan of the project, in fact, by the third year of project implementation, because mainstreaming at the sub-national level requires the Government Regulation to be enacted. MoEF will provide supervision to the provincial and district level partners in the three demonstration areas for the establishment and strengthening of sub-national regulations to adjust to the Government Regulation. The sub-national regulations, described in Output 2.1, will provide a legal foundation for the integrated lake ecosystem management plans. Similar MoEF supervision support will be provided for establishing and strengthening village level regulations (PERDES).

Technical guidelines for the implementation of the Government Regulation and associated sub-national and village regulations will be developed with technical assistance provided by the project. The process of formulating the integrated lake ecosystem management plans (Output 2.1) will feed into the development of

these technical guidelines, providing feedback and validation as progress is made. MoEF will provide supervision support to the sub-national and village government units, as they adjust the technical guidelines to the circumstances and specifics in the respective geographic localities. The guidelines will incorporate gender and social inclusion considerations.

Integrated lake ecosystem management requires cross-sectoral and multiple stakeholder collaboration. To this end, the existing inter-agency mechanism for implementation of Presidential Decree 60/2021 will be strengthened and expanded, with representation of civil society and private sector. Meetings will be convened regularly, either in-person, online or hybrid, to provide input and feedback in the development of the Government Regulation and associated technical guidelines, and liaising with sub-national counterparts in the multi-stakeholder governance mechanisms under Output 2.2 for the development and implementation of integrated lake ecosystem management plans in the three demonstration areas.

Mainstreaming the Government Regulation and technical guidelines into sector-level programming of other ministries, departments and agencies, at the national, provincial, district and village levels, will be facilitated through delivery of training and awareness campaigns. Seminars will also be organized to socialize these regulatory instruments among civil society and private sector partners and associations. The project will encourage and facilitate participate of women and members of marginalized groups to participate in the trainings.

Output 1.2: Methodologies for lake ecosystem health assessment and monitoring strengthened. Under this output, the existing lake degradation classification system, outlined in DG PDASRHA Decree 4/2019, will be strengthened and converted to a lake ecosystem health index, to provide a practical assessment protocol for classifying and monitoring the lake ecosystem health status in Indonesia, thus serving as an important management tool. As described in the baseline scenario section above, the existing lake degradation classification system has been in place for several years, but the application of it remains limited. Technical assistance through the project will support the MoEF in providing updated data on lake ecosystem conditions, starting with the three target areas, to enhance reliability of the assessments, rationalizing some of the assessment procedures, and particularly focusing on strengthening the biodiversity module and adding a module for estimating the carbon balance of lake ecosystems, thus providing a more comprehensive indicator of ecological integrity and functioning.

Strengthened methodologies on collection and analysis of lake ecosystem data will be developed and codified into a user-friendly manual. Where necessary for selected indicators, methodologies will be experimented and trade-offs (robustness, ease of implementation, cost) assessed. An emphasis will be placed on ensuring the methodologies are readily implementable by local authorities, while at the same time, providing representative characterization of lake ecosystem conditions. Relevant institutional stakeholders and non-governmental practitioners will be trained on the methodology. Linking up with the development of the integrated lake ecosystem management plans under Output 2.1, learning-by-doing capacity building (prioritizing equitable participation of women, youth and other people from socially marginalized groups) will be delivered in the target lake ecosystems, where the ecosystem data will be collected and analyzed according to the procedures outlined in the strengthened methodology. Representatives from the other lakes with various characteristics in the country will be invited to join in the

data collection activities, and the project will provide equitable opportunities for women and members of marginalized groups to participate in the data collection activities.

Lake ecosystem health of the three target areas and other twelve selected lakes will be assessed with the updated assessment protocol, testing the level of effort required and the suitability of the tool to represent ecosystem conditions. Updated assessments will be conducted at least one additional time over the course of the project to monitor progress and to build capacities among national and sub-national partners in integrated lake ecosystem management approaches. The project will provide equitable opportunities for women and members of marginalized groups to participate in the trainings.

With the lake ecosystem health assessment methodologies strengthened and field tested in the target areas, the project will support the MoEF in preparing the technical documentation required for revising DG PDASHL Decree 4/2019, reframing the existing lake degradation classification system as a lake ecosystem health index.

Output 1.3: National information systems on lake ecosystem management strengthened and operationalized. The development of the national web-based database on lake ecosystem management will start with the design of a masterplan for the system, supported by a mapping of existing data and information collected and maintained by MoEF units, other ministries and agencies, as well as private sector and civil society, and international organizations, e.g., Landsat[1][12] data and other remote sensing sources. This exercise will also assess the human resource requirements and capacity gaps in existing data collection and for maintenance of information systems.

The information systems will be designed according to the criteria in the existing lake degradation classification system, which will be strengthened under Output 1.2 to a lake ecosystem health index. The guideline for management and operation of the information system will ensure that data sharing agreements/MOUs are in place – including, agreeing on information flows and Quality Assurance / Quality Control procedures, measures to standardize data collection are in place (e.g., simple measures such as using the same reference maps, units, ensuring datasets have keys, formats), and there is clarity on data protection practices for data managers and users. As part of the masterplan, technical guidelines will be developed for data collection and analysis methodologies for each of the criterion in the ecosystem health index. Learning-by-doing surveys will be conducted in the three target lake ecosystems and other twelve selected lakes, collecting and analyzing data and information, and populating the database. Key stakeholders will participate in the surveys (prioritizing equitable participation of women, youth and other people from socially marginalized groups), including MoEF officials, representatives from provincial, district and village government units, the technical units of MoEF, as well as civil society organizations and local academic-research institutions.

To facilitate collaboration among stakeholders and provide informative analyses and reports on lake ecosystem health, the database is proposed to be integrated into a spatial information system. A framework

description of the proposed system is provided in **Annex R** (*Spatial information system framework*). The project will provide technical and investment assistance for designing the spatial information system and setting up a command center within the MoEF. Information from the interventions implemented in the target sub-catchments under Output 2.3 will be uploaded, as a means of putting the system into operation. For instance, restoration activities and sediment control measures will be geotagged, with accompanying photo documentation and monitoring data. Monitoring reports will be generated through the system, providing a blueprint for upscaling in other lake ecosystems in the country. Key stakeholders will be trained on the use of the system, including field-based sessions, demonstrating collection and uploading of site data. The project will provide equitable opportunities for women and members of marginalized groups to participate in the trainings.

Component 2 will address Barrier No. 2 by **demonstrating multiple environmental and social benefits through implementation of integrated lake ecosystem management**. The expected outcome of this pathway is ***Outcome 2: Implemented integrated lake ecosystem management in three demonstration areas***. Outputs and indicative activities to achieve Outcome 2 are described below.

Output 2.1: Participatory integrated lake ecosystem management plans developed and implemented in the three demonstration areas. Applying the guidelines developed in Output 1.2, participatory lake ecosystem management plans will be developed under this output for the three demonstration areas. Recognizing that natural resources are used differently by various actors, the participatory aspect of the planning process will be important, bringing together multiple sectors and stakeholders to collaboratively agree how best to ensure sustainable use and management of lake ecosystems. The management plans will be integrated and biodiversity inclusive, e.g., identifying and reflecting areas within the ecosystems that have high biodiversity value and promoting ecological integrity to improve habitat conditions for threatened and endangered species; and safeguarding ecosystem services and functions to strengthen resilience to climate change and natural disasters. The rights of Indigenous peoples and local communities, with their free, prior and informed consent (FPIC – see **Annex F.4**), will be ensured through recognition of cultural dimensions and customary institutions in the planning processes.

Working groups will be established or existing multi-stakeholder mechanisms strengthened to facilitate the development of the integrated lake ecosystem management plans. The project will promote equitable representation of women in the working groups. The aim is to have the management plans approved or endorsed at the provincial or district level, and the priority actions outlined in the plans incorporated into sector level programming. Mainstreaming the Government Regulation developed under Output 1.1 at the subnational level will provide a legal foundation for the integrated lake ecosystem management plans to be adopted across the relevant sectors.

The processes of developing the integrated lake ecosystem management plans for the three target areas are described below.

Lae Rawapening:

Conduct a Strategic Environmental Assessment (KLHS) as the basis for the development of Provincial Strategic Spatial Plan of Lake Rawapening. The KLHS must take into account the Presidential Instruction No. 1 of 2023 on biodiversity mainstreaming and the IBSAP 2025-2045. The assessment will include climate resilient assessment, to ensure the lake ecosystem management plans incorporate considerations for strengthening coping capacities in response to climate change and other environmental stresses. The assessment will also address social aspects associated with the lake ecosystem management plan.

Provincial Spatial Planning will be developed concerning the mainstreaming of sustainable lake management of Lake Rawapening. The process may include serial discussions and public consultation.

Develop implementing plans for the management (including also restoration and rehabilitation).

-

Lake Batur:

Conduct a Strategic Environmental Assessment (KLHS) as the basis for the development of Provincial Spatial Plan of Lake Batur. The KLHS must take into account Presidential Instruction No. 1 of 2023 on biodiversity mainstreaming and the IBSAP 2025-2045. The assessment will include climate resilient assessment, to ensure the lake ecosystem management plans incorporate considerations for strengthening coping capacities in response to climate change and other environmental stresses. The assessment will also address social aspects associated with the lake ecosystem management plan.

Develop implementing plans for the management (including also restoration and rehabilitation) of Lake Batur.

Lake Limboto:

Conduct a Strategic Environmental Assessment (KLHS) as the basis for the development of Spatial Plan of Nationally Strategic Area of Lake Limboto. The KLHS must take into account Presidential Instruction No. 1 of 2023 on biodiversity mainstreaming and the IBSAP 2025-2045. The assessment will include climate resilient assessment, to ensure the lake ecosystem management plans incorporate considerations for strengthening coping capacities in response to climate change and other environmental stresses. The assessment will also address social aspects associated with the lake ecosystem management plan.

Develop implementing plans for the management (including also restoration and rehabilitation) of Lake Limboto.

Implementation of the integrated lake ecosystem management plans will be initiated in the selected sub-catchments in the three demonstration areas, namely the 4,566-ha Parat sub-catchment within the Lake Rawa Pening catchment, the 8,603-ha Tukad Blinkang catchment (Lake Batur, and the 2,795-ha Tabongo and 15,174-ha Batulayar sub-catchments in the Lake Limboto catchment. More detailed information on the target areas can be found in **Annex M** (*Profiles of the target areas*) and **Annex T** (*Community development baseline report*).

For each of the selected sub-catchments, information on ecosystem functions, services, areas of high biodiversity value, degraded forest areas, sedimentation area, waste disposal areas, soil erosion-prone areas,

flood hazards, point and non-point pollution sources, and other environmental considerations will be compiled and mapped through a participatory process, ensuring inclusion of women, Indigenous peoples, youth, and socially marginalized groups. These mapping outputs will form the basis for the development of sub-catchment management plans, aligning with the integrated lake ecosystem management plan for each of the three demonstration areas, integrating local knowledge and needs and positioning with local level planning processes.

To enable monitoring and evaluation of progress made in the implementation of the sub-catchment management plans, household surveys will be conducted for the targeted eleven villages (three in the Lake Rawa Pening catchment, six in the Lake Batur catchment, and two in the Lake Limboto catchment that were selected based on the criteria of village selection as provided in **Annex T** (*Community development baseline report*). An estimated 30 households in each of these villages, surveying information on livelihood strategies, agricultural management practices, and division of labor, as well as on knowledge, attitudes and practices related to lake ecosystem management. Building upon the preliminary *Value chain mapping and market analysis* (**Annex U**) completed during the project preparation phase, rapid market appraisals (RMAs) and financing scheme assessments will be conducted for the eleven villages, to identify priority species, products, value chains, market specifications, private sector partners, and access to financing. Follow-up household surveys will be conducted at the end of the project, to capture key results, behavior changes, and lessons learned.

Capacity building at the farm level is also included in this output, delivered using farmer field school approaches in the eleven target villages. Participatory measurements of soil erosion and water quality will be made to understand sediment loads and pollution sources at farms, riparian zones, and rivers of selected villages by communities including farmers (male & female) before and after interventions, at least once a year at end of December. These trainings and measurements will help increase awareness among the farmers on the benefits of implementing practical measures to safeguard soil fertility and water resources for their production and reduce impact to the lake ecosystems. Local level extension officers will be engaged (or lead) in the capacity building activities, strengthening and expanding the offerings of the extension services and facilitating replication in other villages across the sub-catchment and beyond.

Utilizing the information contained from the participatory mapping, household livelihood surveys, and rapid market appraisals, gender-responsive and socially inclusive sustainable land use and management practices will be formulated for the target villages, as part of the sub-catchment management plans. Land use and management practices may include climate-smart agricultural practices, vegetated strip terraces with leguminous trees, agroforestry systems, forest-land restoration, non-timber forest products, and livestock-domestic waste management, with the aim of diversifying and increasing income generation while delivering environmental benefits. Village-owned enterprises (*Badan Usaha Milik Desa*, or *BUMDes*) and cooperatives (Koperasi Unit Desa) will be established and/or strengthened to support the proposed land use and management practices, with an emphasis on empowering rural women, youth and socially marginalized groups, and facilitating enabling partnerships with private sector, financial institutions and government agencies, to provide better market access and funding opportunities for the small-scale producers in the target villages.

Output 2.2: Multi-stakeholder governance mechanisms for integrated lake ecosystem management strengthened in three demonstration areas. Under this output, collaborative action will be enhanced through strengthening multi-stakeholder governance mechanisms, with equitable representation of women, for integrated lake ecosystem management in the three lake ecosystem demonstration areas. Based upon findings during the project preparation phase, the key stakeholders include the following: BAPPEDA (Provincial/District Planning & Development Agency), BPDAS (Watershed Management Agency), *Dinas Lingkungan Hidup* (Environmental Service Agency), *Balai Besar Wilayah Sungai* (River Basin Development Agency), *Dinas Pertanian-Peternakan-Perikanan-Ketahanan Pangan* (Agriculture-Livestock-Fishery-Food Security Agency), *Dinas Kesehatan* (Health Service Agency), *Dinas Pariwisata* (Tourism Agency), private sector enterprises and/or associations, local universities, NGOs and representatives of local villages (female and male). The first step will be developing terms of reference for the multi-stakeholder governance mechanisms in the three demonstration areas, based on existing structures, regulations, and needs for guiding the implementation of the integrated lake ecosystem management plans developed in Output 2.1. Regular meetings will be convened to review the development of the management plans, discuss monitoring and evaluation feedback on the implementation of the plans, recommend management decisions and adaptive management measures, and facilitate and advocate for endorsement of the plans and mainstreaming them into sector level programming processes.

Local community working groups will be established in each of the selected villages in the target sub-catchments, to guide the implementation of the planned interventions and facilitate village level regulations on integrated lake ecosystem management. These working groups are envisaged to involve the heads of the villages, smallholder farmers, women and men farmer groups, socially marginalized groups, youth organizations, village enterprises, and cooperatives. Like the multi-stakeholder governance mechanisms at the provincial/district levels, the local community working groups will regularly meet, helping with communications, e.g., regarding the household surveys and planning activities in Output 2.1, reviewing progress of the community level interventions, and advocating for the development and adoption of village regulations.

The multi-stakeholder governance mechanisms will also provide platforms for fostering partnerships, e.g., between private sector enterprise and small-scale producers in green value chains, and innovative financing schemes, such as payment for ecosystem services (PES) and payment for watershed services (PWS). The governance mechanisms will facilitate engagement between subnational government units, financing institutions, to deliver capacity building, including innovative income generation for women and socially marginalized groups, as well as producers and other value chain actors, to mobilize diversified financing, as well as in-kind resources for the sustainable implementation of integrated lake ecosystem management measures.

Output 2.3: Nature-based solutions (NBS) and climate resilient livelihoods promoted, developed, and implemented. Implementation of the integrated lake ecosystem management plans developed in Output 2.1 will be initiated under this output, addressing the main threats and root causes influencing the degradation of the target sub-catchments. Restoration of degraded agricultural lands, contributing to GEF-8 Indicator 3.1, will aim at increasing soil and water conservation, reducing erosion and loss of soil fertility, and providing local farmers with diversified and climate-resilient livelihoods. The gender-responsive and socially inclusive interventions will be designed as nature-based solutions that include the key principles of ecosystem approaches and delivered at farm level using demonstration plots. For example, application of climate-smart agroforestry, vegetated strip terraces with leguminous trees, and inter-cropping and/or alley-cropping

will provide improved management of on-farm resources and increase productivity and diversification, leading to increased and more secure livelihoods and enhanced resilience to climate change. The interventions will also include promotion of wild agricultural species and crop varieties, enhancing biodiversity conservation, strengthening food security and nutrition for local communities, and enhancing resilience. The project will not introduce or subsidize chemical fertilizers and will promote agroecological practices that minimize agrochemical inputs, e.g., through integrated pest management practices. Through farmer-farmer exchanges and other knowledge-sharing activities, these benefits will be upscaled and replicated, providing catchment scale benefits that contribute to the overall health of the target lake ecosystems.

Opportunities will also be explored for collaborating with local Tourism and Culture Offices and tourism operators, e.g., through promoting agritourism experiences and public awareness. Clear arrangements will be secured through free, prior and informed (FPIC) consent (see **Annex F.4:** FPIC Plan) with Indigenous Peoples and local communities in the case of utilizing traditional knowledge or other forms of cultural heritage as part of ecological-education-tourism initiatives, in accordance with the guidance outlined in the project's Cultural Heritage Management Plan (see **Annex F.5**).

Similarly, degraded forest areas within the target villages will be restored to strengthen ecological functionality, stabilize vegetative cover, benefitting biodiversity with enriched habitat and reduced fragmentation, thus contributing to improved lake ecosystem health and providing farmers and communities with more diversified and sustainable livelihoods (GEF-8 Indicator 3.2). Planned gender-responsive and socially inclusive interventions include introducing multipurpose tree species (MTPS) systems, non-timber forest product management (e.g., beekeeping and/or Meliponiculture, i.e., farming of stingless bees), and enrichment planting, supported through community tree nurseries and vegetative propagation practices. As with restoring degraded agricultural lands, the forest area restoration interventions will be delivered at the farm level using demonstration plots. These will be part of the nature-based solutions in the respective sub-catchments. The project will also collaborate with the technical units of the MoEF in the demonstration areas, e.g., strengthening community engagement in implementing and maintaining forest restoration activities, increasing public awareness on the prevention of forest fires, etc. The project will promote the use of endemic species and avoid introducing invasive and non-native species. Procurement risk management and proactive oversight of field interventions will help ensure that sourced materials meet specifications.

Nature-based solutions will also be implemented within the target villages. Such interventions include ecologically friendly sediment control measures, such as gully plugs (or check dams), sediment basins, retaining dams, and rainwater collection tanks. Improved management of agricultural waste, including livestock waste (e.g., through biogas management and utilization), as well as community waste, and reduced use of agrochemicals (including chemical fertilizers and pesticides) will lead to the restoration of degraded sub-catchment area. These nature-based solutions will reduce sedimentation and pollution of the lake ecosystems, and provide scale-able models in other sub-catchments, as well as other lake ecosystems in the country.

The gully plugs (or check dams) will be small in scale, and built using sustainable methods that do not damage the ecological function of the streams. Following guidelines contained in Ministerial Decree No. 105/2018 on sedimentation control, the structures will include stone gabions or bamboo/wooden elements to control sedimentation and ensure water flow. Local communities will be engaged in the participatory design and implementation of the structures, FPIC will be obtained prior to

commencement of field activities, and the project will facilitate collaborative monitoring and transfer of knowledge with the community members.

A breakdown of the planned activities at sub-catchment and village area restoration interventions under Output 2.3 is presented in **Table 2**.

Table 2: Planned restoration and rehabilitation interventions

LULC	Limboto		Rawa Pening		Batur					Total Area, (ha)	Proposed Area	Proposed interventions
	Tabongo	Batulayar	Parat	Sraten	Kedisan	Gede Tampuriang	Truntyan	Melilit	Serongga			
Primary Forest					**16**					**16**	**16**	Patrol, natural succession, Eco-edu-tourism
Secondary Forest	**25**	**886**	**176**	**62**	**230**	**7**	**212**	**192**	**24**	**1,814**	**1,637**	Patrol, natural succession, agroforestry, MPTS and NTFP management, Eco-edu-tourism
Forest Plantation		199	102	311	33	158		409	31	1,243	**500**	Patrol, natural succession, agroforestry and tree nursery practices, MPTS & NTFP management
Settlement	**149**	**437**	**756**	**1,454**	**72**	**3**	**33**	**92**	**10**	**3,006**		Agroforestry, biogas digester, retaining dam, gully plug, rainwater tank, and water infiltration well
Dryland Agriculture	**2,539**	**12,323**	**2,695**	**1,542**	**200**	**577**		**1,979**	**511**	**22,366**	**662**	Climate-smart agroforestry, alley cropping, vegetated strip terraces
Paddy Field	71	1,211	462	262			1			2,007		
Shrub	10	119	316	88	151	6	31	266		987		Agroforestry, forest-land restoration
Savana					2	237	34	361	36	670	**1,681**	
Open Land			**2**	**53**				**497**		**552**		Agroforestry and tree nursery practices, forest-land restoration
Mining								37		37		
Water Body			58	84	10	10	5		3	170		
	2,795	15,174	4,566	3,856	713	1,259	315	3,833	616	33,127	**4,496**	

Capacity building is a foundational part of this output, guided by the needs identified through the household surveys and rapid market appraisals completed under Output 2.1. Gender-response and socially inclusive participatory field-based training will be delivered to local farmers and small-scale producers on integrated lake ecosystem management principles and approaches, agricultural and agro-forestry best practices, biodiversity friendly and climate resilient livelihoods, and food security and nutrition. Provincial, district and local extension services (agriculture, forestry, fisheries) will be closely engaged, e.g., through training-the-trainer models that enable upscaling and replication to other villages in the catchment, thus enhancing the likelihood that the nature-based solutions implemented are sustained. These trainings will also include specific modules on sustainable business practices and entrepreneurship related to promoting biodiversity-positive practices (value-added products from non-timber forest products, eco-edu-tourism etc.) , as well as initiatives specifically focused for women, such as cultivation of herbal medicinal plants, and production and marketing of handicrafts.

Sustainability will also be enhanced through strengthening existing or establishing new village-owned enterprises (*BUMDes*), cooperatives (*Koperasi Simpan-Pinjam*), and community-based groups, including women and youth groups. Apart from technical based capacity building, trainings will be delivered on financial management, proposal writing, and partnership building.

Working closely with the Village Facilitators and Catchment Coordinators, local farmers participating in the project interventions will be training in data collection and other monitoring and evaluation activities. Details on project activities will be recorded and entered in a database, providing input to project progress reports and helping to inform adaptive management decisions.

Component 3 will address Barrier No. 3 by **facilitating adaptive management and upscaling through knowledge sharing and learning**. The expected outcome of this pathway is: Outcome 3: *Enhanced community awareness knowledge, contribution, and collaboration on lake ecosystem management and restoration*. Outputs and indicative activities to achieve this outcome are described below.

Output 3.1: Lake centers of excellence and knowledge hubs developed. During the conceptualization and development of the project strategy, stakeholders stressed the importance of establishing knowledge centers for showcasing the value of lake ecosystems, as knowledge hubs for disseminating best practices, increasing public awareness, and facilitating environmental education initiatives. Lake centers of excellence will be established in each of the three target areas in coordination and collaboration with national and subnational partners. The first step will be securing written commitments from local partners regarding existing buildings to host the lake centers and on the long-term management and operation of the facilities. Written agreements are envisaged to be in the form of decrees, plans, MOUs, or other written form, including inclusion of co-financing in the local budgets. The agreements will also identify private (for profit) organizations for the operation and management of the centers, decided upon through a competitive bidding process.

The GEF-8 LAKES project will provide assistance for the design and establishment of the lake centers. The project will not entail construction of new infrastructure, but rather equipping existing buildings to establish the lake centers with the aim of educating local communities and other stakeholders on the value of lake ecosystems and sustainable management practices. The design will be informed by feedback obtained through focus group discussions and other inquiries, on specific local needs, what types of knowledge dissemination systems are best suited, whether to include outdoor information kiosks or interactive exhibits, indoor space for local community groups to hold meetings or demonstrate handicrafts, etc. Business plans will be developed for each of the lake centers, to provide guidance to the local governments and operators. Representatives from local tourism and culture offices will be engaged in these processes, exploring opportunities to link the lake centers to nature tourism strategies, for example, and for potentially sharing resources. Examples of regional and international best practices for such knowledge centers will also be assessed, including those supported with GEF funding.

Launchings will be organized after each of the lake centers are established, inviting local stakeholders, including representatives from government units, local schools and universities, civil society organizations, private sector enterprises, and local communities, including women's groups, youth groups, agricultural cooperatives, tourism operators, etc. A knowledge management plan will be developed and implemented for each of the lake centers, supported by the GEF-8 LAKES project in years 4 and 5 of the implementation phase, based on an estimation that the centers will be established

in year 3. In accordance with the written agreement signed by the local lead agency and aligned with the business plan, the centers will be handed over to the contracted operator, with commitment from local governments and/or non-governmental partner (e.g., private sector, not-for-profit organization, etc.) to ensure provision of operation and maintenance costs after the GEF funding ceases. The project will work with local women's groups to act as knowledge agents, promoting and disseminating information on gender equality and women's empowerment related to lake ecosystem management.

Output 3.2: Knowledge sharing, learning systems and collaboration network established. Knowledge management and learning are integral parts of the project strategy, enabling timely adaptive management and enhancing the likelihood that the results will be sustained, as well as upscaled and replicated. Building upon the Knowledge management and learning framework plan (see **Annex V**) produced during the project preparation phase, the project will develop and implement a knowledge management and learning plan. Knowledge products will be produced and disseminated in multiple formats, including but not limited to printed/ digital materials, videos / short films, podcasts, cultural products, performing arts, infographics, etc. At least three of the knowledge products will highlight best practices and lessons learned related to initiatives on gender and social inclusion.

Utilizing MoEF websites/platforms and social media outlets, the project will share information with stakeholders on progress, upcoming events, news from the demonstration areas and from lake ecosystems in general across the country.

In collaboration with the field interventions implemented under Component 2, learning modules will be developed, or adapted where they already exist, on good agricultural and fisheries practices, sustainable lake management measures, etc. To facilitate sustainability, capacities of local champions will be built through training-of-trainer approaches, through training courses, field demonstrations, and possibly national and/or regional learning exchanges. Following delivery of the modules in the field, local stakeholders, including extension services, will be encouraged to mainstream these as part of their capacity building offerings, in cooperation with the trained local champions.

This output also includes participation in knowledge sharing and learning activities, such as workshops, seminars, professional meetings, etc., both nationally and internationally. The project will also organize workshops and/or seminars on integrated lake ecosystem management, sharing results and lessons from the project interventions and inviting national and international stakeholders to present innovative and emerging approaches and experiences. These knowledge sharing events will also help revitalize government to government networking on integrated lake ecosystem management, something emphasized in Presential Decree 60/2021. Improved networking is critical for genuinely managing the country's lake ecosystems through integrated approaches, including sharing of data – which is linked with the national database and associated spatial information system developed under Output 1.3. The project will also contribute towards strengthening international networking on integrated lake ecosystem management, e.g., through organizing one or more side events, at least one international meeting.

Project implementation and results will be strengthened through a **comprehensive, participatory, and gender-sensitive Monitoring and Evaluation (M&E) framework**. Building upon the Monitoring and evaluation framework plan presented in **Annex W**, the project level M&E framework will be critical to tracking progress against key outcomes, providing timely feedback for adaptive management, and ensuring that the project achieves its environmental and social objectives.

The M&E framework will operate at multiple levels, combining quantitative and qualitative data collection methods to monitor the project's activities, outputs, and outcomes. At the core of this framework will be gender-disaggregated data collection, ensuring that the project's impacts on women, youth, and marginalized groups are adequately captured and addressed. Participatory monitoring will involve key stakeholders, including local communities, village working groups, and civil society organizations, who will play a role in gathering gender-disaggregated data and providing real-time feedback on the effectiveness of interventions. This approach will empower local stakeholders, build ownership, and enhance the sustainability of project outcomes.

The M&E system will also be aligned with national policy frameworks and will feed directly into the national database on lake ecosystem management (developed under Output 1.3). The data collected through this system will inform national and sub-national decision-making processes, ensuring that lessons learned from the project are integrated into policy development and strategic planning. By capturing field-level data and demonstrating successful management practices, the M&E framework will support scaling-up efforts, both in other lake ecosystems across Indonesia and through global knowledge-sharing platforms.

In addition, the M&E framework will support the adaptive management of the project, allowing for real-time adjustments based on emerging challenges and opportunities. For example, the project will track progress made in implementing diversified farming and improved agricultural practices, assessing possible constraints experienced by the farmers, making adjustments accordingly to facilitate sustainability of project results. The project will also regularly monitor the implementation of the gender action plan, report key results in progress reports and independent evaluations, and deploy adaptive management measures accordingly. The continuous feedback loop created by the M&E system will enable the project team to refine interventions, ensuring that they remain relevant and effective in achieving the desired global environmental benefits and climate adaptation outcomes.

Project stakeholders and knowledge sharing

The success of the GEF-8 LAKES project depends on the meaningful engagement of key stakeholders at national, regional, and local levels. These stakeholders will play vital roles in implementing the project, ensuring sustainability, and achieving the global environmental and climate adaptation benefits. Their involvement is critical in addressing the identified barriers and delivering long-term, sustainable outcomes.

At the national level, the Ministry of Environment and Forestry (MoEF) will lead project coordination, focusing on policy development, regulatory strengthening, and the creation of a national lake ecosystem management database. MoEF's leadership will ensure alignment between the project's activities and national policies, including the development of the Government Regulation on Integrated Lake Ecosystem Management (Output 1.1). MoEF will also work to mainstream the project's outcomes into sectoral programs across key ministries such as agriculture, public works, and fisheries, promoting policy coherence in biodiversity conservation, climate resilience, and sustainable land use.

At the provincial and district levels, related agencies such as Agricultural and Food Security, Fisheries, Forestry, Rural Community Empowerment and other implementing units of the related ministries will implement the integrated lake ecosystem management plans (Output 2.1) and support the development of sub-national regulations. These entities will translate the national framework into practical, actionable

measures in the three demonstration areas, ensuring that lake management strategies are tailored to local contexts and challenges.

Local governments, extension services, community organizations, and village-level institutions will play a central role in the participatory planning and implementation of sub-catchment management strategies. The project will empower rural communities, particularly women and marginalized groups, to lead sustainable livelihood initiatives such as agroforestry, climate-smart agriculture, and non-timber forest product management (Output 2.3). Through partnerships with private sector actors and financial institutions, the project will ensure long-term market access and funding opportunities, driving sustainable economic resilience for these communities.

Civil society organizations (CSOs) and non-governmental organizations (NGOs) will provide technical expertise in community development, biodiversity conservation, and nature-based solutions (NbS). They will contribute to the project's knowledge-sharing efforts by capturing lessons learned and disseminating best practices through national and international channels.

The private sector, including tourism operators, agricultural enterprises, hydroelectric power companies, drinking water enterprises, etc. will be key partners in promoting sustainable economic activities linked to the lake ecosystems. The Lake Centers of Excellence (Output 3.1) will serve as hubs for public-private partnerships, promoting eco-edu-tourism, biodiversity conservation, and market-driven solutions for sustainable lake management.

Stakeholder engagement and gender considerations

Stakeholder engagement is critical to the success of the GEF-8 LAKES project. Local communities, government agencies, private sector actors, and civil society organizations will actively participate in governance, knowledge-sharing, and management activities. Their involvement is essential to achieving the project's global environmental benefits, climate adaptation goals, and biodiversity conservation objectives.

Gender equality is integrated across all project components, with specific measures aimed at empowering women and youth through livelihood programs and governance mechanisms (Output 2.3). By prioritizing gender equity, the project ensures that women, who are disproportionately affected by environmental degradation, are included in decision-making processes and benefit from project outcomes.

Knowledge management and learning

Knowledge management is a central element of the project, aimed at capturing, sharing, and applying lessons from both previous efforts and the current project. Lake Centers of Excellence (Output 3.1) will not only serve as educational facilities but also as platforms for disseminating best practices in lake management to a wider audience, including local communities, government agencies, CSOs, and private sector actors. These centers will showcase innovative solutions for ecosystem restoration and climate-resilient livelihoods, helping local stakeholders adopt and replicate successful approaches.

The knowledge-sharing systems (Output 3.2) will provide stakeholders with access to real-time data, case studies, and technical resources related to integrated lake management. The national lake ecosystem database (Output 1.3) will enable stakeholders to monitor ecosystem health and adapt management strategies based on updated assessments. Knowledge products—such as policy briefs, technical reports, and digital media—will be widely distributed to support evidence-based decision-making and facilitate replication of successful interventions across other lake ecosystems.

Field-based training and learning-by-doing models will build human, institutional, and technical capacities, ensuring that stakeholders can sustain lake management efforts beyond the project's duration. Local champions, trained through participatory processes, will play a crucial role in extending knowledge within their communities and supporting the replication of best practices in other regions. The project will ensure equitable opportunities are ensured for participation of women and members of socially marginalized groups.

Innovation

Inland lakes are recognized as important carbon sinks, including sequestration of carbon through deposition of organic matter in bottom sediments. Carbon cycle dynamics, however, are complex, with fluxes influenced by a multitude of variables, including rainfall, dissolved oxygen, groundwater seepage, etc. Carbon cycling in lake systems in temperate climates in northern hemisphere countries are more studied than those in tropical lake ecosystems. The project provides a unique opportunity to develop innovative methodologies for estimating the carbon sequestration potential for the three demonstration areas, as well as other ones in the country, where there is a wide variety of lake types.

Innovation will also be realized through demonstrating the role of local producers and communities in effectively managing lake ecosystems, coupling livelihood diversification opportunities and enhanced food and nutrition security with protection and restoration interventions. The demonstrations will ensure a community-driven approach which incorporates local knowledge into the practices implemented.

Strengthening the enabling environment for integrated lake ecosystem management under Component 1, demonstrating implementation of such integrated approaches in the demonstration areas in Component 2, and enhancing knowledge flow and facilitating learning, through education, outreach and innovation transfer (e.g., lake centers and knowledge hubs under Component 3) and cross-learning exchanges among the demonstration areas will enhance the durability of the project results and promote upscaling to other lake ecosystems in the country.

During the implementation of this project, a database and national inventory for the lakes in Indonesia will be developed, differentiating the lake ecosystems into their typology and biodiversity, e.g., tectonic, volcanic, crater, and caldera, for better management and improvement of lake ecosystems. The systems will be developed by the MoEF and in collaboration with other relevant institutions, relevant research centers, local universities, and technical experts, to strengthen science-based decision making in the management of lake ecosystems across the country.

[1] Landsat data are processed and distributed by the United States Geological Survey (USGS) Earth Observation and Science (EROS) Center. Also, US National Aeronautics and Space Administration (NASA) develops data and science products that further the use and application of Landsat imagery.

Institutional Arrangement and Coordination with Ongoing Initiatives and Project.

Please describe the Institutional Arrangements for the execution of this project, including financial management and procurement. If possible, please summarize the flow of funds (diagram), accountabilities for project management and financial reporting (organogram), including audit, and staffing plans. (max. 500 words, approximately 1 page)

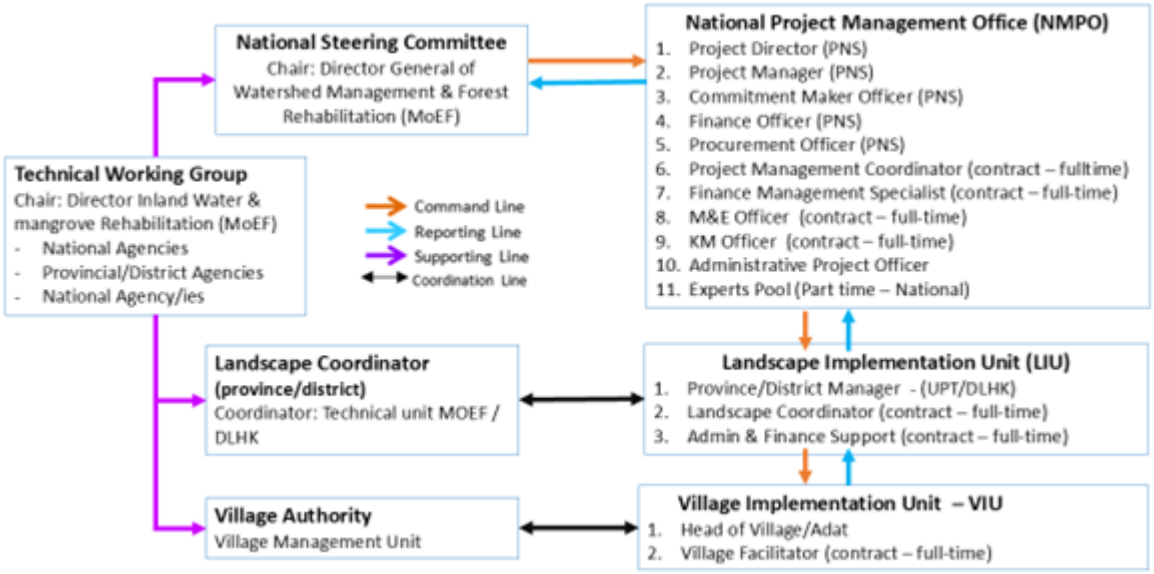


Figure 3: Project institutional arrangement

The project will be managed through multiple levels; national, landscape, and village. The project implementation will cover three aspects for Project Management, Project Implementation and Project Monitoring, Reporting and Evaluation (MRV). The main institutions involved in Project Management are the National Steering Committee (NSC) and Technical Working Group (TWG), the National Project Management Office (NPMO), the Landscape Implementation Unit (LIU) and the Village Implementation Unit (VIU). The project will be implemented through a cross-institutional and sectoral partnership involving various institutions/stakeholders of central, provincial/district government, the private sector, and communities. The Directorate General of Watershed Management and Forest Rehabilitation (DG-WMFR), MOEF, will be the led Project Executing Agency and act as NSC. It will involve relevant Directorate Generals and Directorates of the MOEF, Gorontalo government, Bali government, and Central Java Government. The NSC will provide overall guidance and advice**,** serving as the policy dialogue forum. The NSC will be supported by TWG and chaired by the Director of Inland Water and Mangroves Rehabilitation (IWMR). **TWG** should be composed of national, provincial, and district project-related agencies. The roles and responsibilities of the TWG are: (i) to provide technical inputs, project progress updates, and project-related discussion topics to NSC (ii) review the project's annual work plan and budget (AWPB) developed by the NPMO; and (iii) review the progress of implementation and provide technical inputs and advice on policy issues to th NPMO on

follow up actions to national level activities. Implementation and oversight of the environmental and social safeguard management plans, the gender action plan, and stakeholder engagement plan will be supported through government co-financing and positions included in the TWG.

NPMO will be led by the Director IWMR – MOEF. The NPMO will be supported by a Project Manager Coordinator appointed by MOEF and completed with officers, staff and consultants to coordinate all project components, finance and administration, procurement, M&E and KM activities. The responsibilities of the PMO will include (i) timely delivery and cost-effective implementation of all activities of the LAKES; (ii) ensuring establishment and operationalization of LIU and VIUs (iii) overall supervision, implementation guidance, and financial and operational management support to the LIU at the provincial level and the VIUs at village level; (iv) consolidation of reports and documentation, such as AWPB, progress and final reports, and supporting documentation, annual financial statements, audit reports, and other financial reports and documents needed by IFAD and the government; (v) establish and manage the Monitoring and Evaluation activities; (vi) coordination of the IFAD supervision and implementation support missions; and (vii) preparation and dissemination of project knowledge management and media materials. The NPMO will also recruit technical assistance from a pool of experts, including SECAP and gender specialists, as well as thematic technical specialists.

LIU coordination will be led by the Team/Working Group of Lake Rehabilitation and Restoration for each lake in the three demonstrated areas which is enacted by governor/regent leader. Landscape coordination will be conducted through convening bi-annual meetings that involved all relevant stakeholders. The LIU will: (i) facilitate coordination and harmonization with other healthy lakes-related projects; (ii) act as a multi-stakeholder platform that discusses, advises and oversees the implementation of sub-national project activities of LAKES; (iii). provide technical input and guidance for project implementation and AWPB to be consolidated by the NPMO, and (iv) review the progress of sub-national activities.

VIU will be led by the village head and will work closely with the community groups developed by the project. In the daily activity, the village facilitator will support the VIU in implementing the program based on the project concept, conducting regular monitoring, improving capacity, and leveraging the good practices and lessons learned.

The flow of funds for the project is summarized and illustrated below.

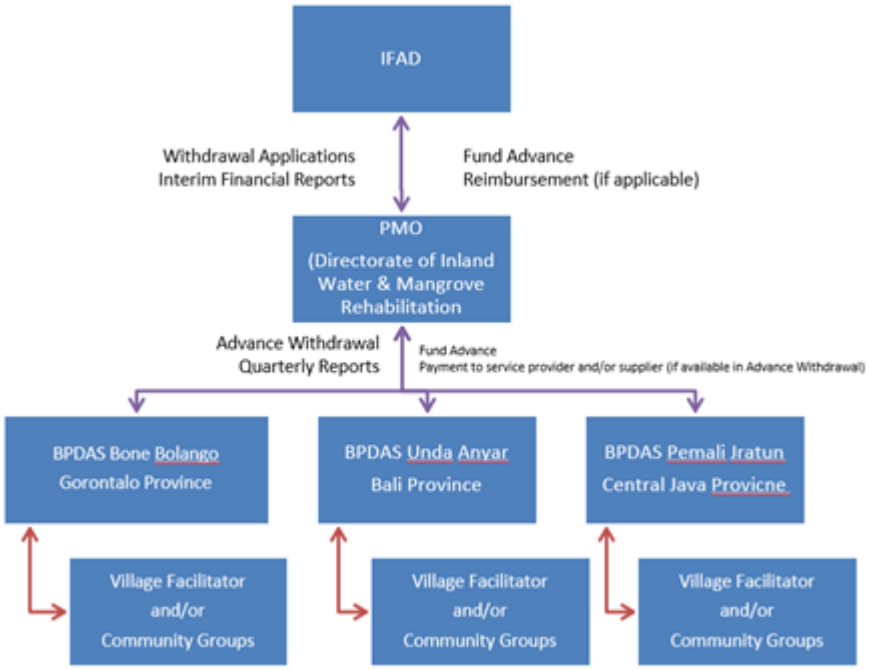


Figure 4. Fund Flow for the GEF8 LAKES

Funds will be channeled through commercial banks, even though the Treasury Single Account (TSA) doesn't apply directly to them. These banks are essential in the early stages of revenue collection, transferring government receipts into the TSA.

IFAD will disburse the funds through IFAD's Client Portal (ICP). To ensure a timely project launch, retroactive funding and robust accounting systems are proposed. Specific co-financing targets for all relevant agencies at the national and local level and private sector are yet to be confirmed, but at least from the DG PDASRH, MoEF committed USD 44.65 million. The project cost is estimated at USD 56.75 million, with GEF providing USD 7.1 million and co-financing of USD 49.65 million.

To secure co-financing:

1. Proactive Engagement: Regular meetings and communication with potential sources.
2. Diversifying Funding Sources: Approach additional programs and donors.
3. Capacity Building: Training in financial management, proposal writing, and negotiation.
4. Clear Documentation: Maintain detailed records and regular progress reports.
5. Flexible Planning: Adjust financial plans as new sources are confirmed.
6. Robust Monitoring: Set up monitoring and evaluation frameworks.

A Designated or Special Account in USD will be used for fund flow. Funds will be channeled to implementing units or third parties. The technical unit of the ministry in the province or Provincial Implementing Units might use *Tugas Pembantuan* (TP) for simpler fund flow. Payments will follow Ministry of Finance (MOF) steps, with supporting documents maintained for audits. Quarterly IFR timing is set to mitigate delays. Guidelines for capturing, monitoring, and reporting in-kind contributions are needed for comprehensive oversight.

Will the GEF Agency play an execution role on this project?

If so, please describe that role here and the justification.

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 (max. 500 words, approximately 1 page)

There are several opportunities for coordination and cooperation with ongoing initiatives and projects, including the ones described below.

National Watershed Management Programme. Currently Indonesia has a watershed area of 189,278,753 ha which is divided into 17,076 watersheds, of which 106,884,471 ha or as many as 2,145 watersheds are classified as damaged/need to be restored. Based on MoEF data, there are more than 14 million ha of critical land in Indonesia, which is a major issue in watershed restoration. There are 14 focus scope areas to be intervened by MoEF and relevant ministries, including Forest Reclamation and Watershed Rehabilitation. The target areas of the GEF-8 LAKES project are situated within critical watersheds and planned restoration of critically degraded agricultural land, forest areas and wetlands are directly aligned with the National Watershed Management Programme. Moreover, the subnational Watershed Management Agencies (BPDAS) are among the key project stakeholders, providing direct linkage between the MoEF at the national level with the interventions on the ground.

IFAD Youth Entrepreneurship and Employment Support Services (YESS) Programme in Indonesia (2018-2025, will be extended until 2029). The overall objective of the YESS Programme is to create opportunities for rural youth to build their economic livelihoods through rural entrepreneurship or employment. The GEF-8 LAKES project to collaborate with and build upon the capacities developed through the YESS Programme, specifically focused on engaging rural young people in on-farm and off-farm entrepreneurship opportunities.

IFAD-ADB Horticulture Development in Dryland Areas Sector Project (HDDAP) (2023-2029), an initiative with the Government of Indonesia aimed at transforming dryland farming to make it more climate-resilient and profitable, bolstering the livelihoods of over 200,000 farmers. Best practices and lessons learned by the HDDAP, e.g., regarding climate-smart agriculture interventions, rainwater harvesting, and

agroforestry systems, will provide important guidance to the GEF-8 LAKES project. Also, among the seven provinces where HDDAP is operating, two overlap with the LAKES project, namely Central Java and Bali. In those areas, there could also be opportunities for learning exchanges, joint capacity building activities, etc.

Australian Government, Australian Centre for International Agricultural Research (ACIAR). ACIAR has collaborated with partners in Indonesia for over 35 years, focusing on strengthening the agriculture sector, including crops, livestock, forestry, marine fisheries and aquaculture which are critical to reduce poverty, develop equity across the country, improve food security, and empowering women and girls. ACIAR has a MoU with National Planning Agency (Bappenas) to support sustainable management of Lake Tempe in South Sulawesi, one of the 15 national priority lakes. The GEF-8 LAKES project will explore opportunities to cooperate with complementary ACIAR-supported initiatives, including capacity building, institutional development, dissemination of innovation and technological practices, and initiatives on ensuring food and nutritional security.

FAO-GEF project "Strengthening Capacities for Management of Invasive Alien Species (SMIAS)" in Indonesia (GEF ID 10705). The GEF-8 LAKES project will explore opportunities to collaborate with the SMIAS project, linked to the proposed updated National Strategy and Action Plan for the Management of Invasive Alien Plant Species in Indonesia (NISSAP).

USAID Ber-IKAN: Improve Sustainable, Resilient and Equitable Fisheries Management (In Gorontalo). The USAID Ber-IKAN project is providing technical and financial assistance on protection of marine biodiversity by supporting sustainable and equitable management for fisheries. In particular, the program helps improve adoption of and compliance with evidence-based fisheries policies for priority fisheries; strengthen small-scale fisheries (SSF) governance; increase government and market-based incentives for sustainable seafood products; and improve protection of endangered, threatened, and protected marine species affected by fishing practices. Potential opportunities for collaboration with the proposed project include capacity building on best practices for inland fisheries, cooperating on livelihood interventions with local fishing communities, especially those representing women, youth, and other vulnerable and/or minority groups.

Community-Government Restoration, Recreation, and Livelihood in Batur UNESCO Global Geopark in Indonesia for Climate Resilience. This project is managed by the Center for International Forestry Research (CIFOR) in collaboration with AFoCo together with the National Institute of Forest Science of the Republic of Korea (NIFoS) and the Center for Standardization of Disaster and Climate Change Instruments, Agency for Standardization of Environment and Forestry Instruments (under Indonesia's Ministry of Environment and Forestry). The project's objective is to promote the principles and develop guidelines for land-based and community-based economic revitalization to enhance disaster and climate change resilience. Potential coordination and cooperation opportunities include building upon the livelihood interventions, e.g., with the community-based forest culture model promoted by the UNESCO project.

Core Indicators

Indicate expected results in each relevant indicator using methodologies indicated in the GEF-8 Results Measurement Framework Guidelines. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Indicator 3 Area of land and ecosystems under restoration

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
6480	4496	0	0

Indicator 3.1 Area of degraded agricultural lands under restoration

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
Cropland	120.00	2,343.00		

Indicator 3.2 Area of forest and forest land under restoration

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
506.00	2,153.00		

Indicator 3.3 Area of natural grass and woodland under restoration

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 3.4 Area of wetlands (including estuaries, mangroves) under restoration

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
5,854.00			

Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
130907	126875	0	0

Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
130,245.00	126,875.00		

Indicator 4.2 Area of landscapes under third-party certification incorporating biodiversity considerations

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Type/Name of Third Party Certification

Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

662.00			

Indicator 4.4 Area of High Conservation Value or other forest loss avoided

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.5 Terrestrial OECMs supported

Name of the OECMs	WDPA-ID	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)

Documents (Document(s) that justifies the HCVF)

Title

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)	1236765	1390741	0	0
Expected metric tons of CO_2e (indirect)	0	0	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)	1,236,765	1,390,741		
Expected metric tons of CO_2e (indirect)				
Anticipated start year of accounting	2025	2025		
Duration of accounting	20	20		

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)				
Expected metric tons of CO_2e (indirect)				
Anticipated start year of accounting				
Duration of accounting		20		

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)				

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)

Indicator 11 People benefiting from GEF-financed investments

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	5,000	5,000		
Male	5,000	5,000		
Total	**10,000**	**10,000**	0	**0**

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

The CI 3 target of 4,496 ha is based on the restoration of degraded agricultural land, forest areas, and wetlands (including littoral and riparian zones) through the integrated lake ecosystem management. Preliminary estimates include restoring critically degraded land and Land Use Land Cover (MoEF, 2022) through introduction of agroforestry systems, with the aim of reducing erosion and providing livelihood co-benefits for local communities in the pilot sub-catchments which which are significantly occupied by settlements should be prioritized since they provide higher immediate nutrient loads, which lead to eutrophication near the lakeshore area. The end target also includes restoration of degraded agricultural lands, through improved practices to enhance soil and water conservation, provide erosion control and reduce non-point agricultural runoff, and improve vegetative cover. The rehabilitation will re-introduce the fast-growing tree and local/endemic tree species that can improve the land conditions and reduce the erosion and sedimentation to the lake. The combination between restoration and soil conservation through the Natural Regeneration (ANR), tree planting brings both significant environmental and livelihood improvements.

The CI 4 target represents the cumulative area (126,875 ha) of the lake ecosystems (including catchment areas and lake bodies) in the three demonstration areas, where improved landscape practices will be achieved through implementation of integrated lake ecosystem management plans. The lake ecosystem management plans will be integrated and biodiversity inclusive, e.g., identifying and reflecting areas within the ecosystems that have high biodiversity importance and promoting ecological integrity, e.g., safeguarding ecosystem services and functions to strengthen resilience to climate change and natural disasters.

Greenhouse gas mitigation benefits (CI 6) were estimated using the FAO EX-Ante Carbon-balance Tool (EX-ACT), V9.4.1. Mitigation benefits are to be generated through the planned restoration interventions, as well as improved practices target lake ecosystems. The preliminary EX-ACT calculations are provided as a separate annexed Excel file (Annex X). The estimated reduction of GHG emissions are based on preliminary estimates of avoided deforestation as a result of improved management practices in the lake catchments, e.g., broader adoption of good agricultural practices is expected to result in less pressure to encroach into forest areas; reduced forest fires as a result of improved management of plantation areas; improved agricultural practices, e.g., reduced tillage management, reduced use of chemical fertilizers; introduction of agroforestry systems on degraded land as part of the restoration efforts.

The estimated number of people benefiting from the GEF-financed investment (CI 11) includes people receiving targeted and high intensity support from the proposed project, e.g., people working in the entities managing the lake ecosystems in the three demonstration areas; people working with rural, small-scale producers who receive technical and investment assistance for sustainable and resilient livelihoods and improved food and nutrition security. It is proposed that 50% of target beneficiaries will be women/girls. This indicator/gender target will be monitored regularly through a gender sensitive monitoring-evaluation systems (GESI: gender equality and social inclusion).

Key Risks

	Rating	Explanation of risk and mitigation measures
CONTEXT		
Climate	Moderate	Risks: Climate change and climatic variability are threatening lake ecosystem functions and services. Climate and disaster hazards also pose risks during project implementation. For example, the execution of certain project activities may be delayed or undermined as result of extreme weather events. Furthermore, government priorities and resources may also be redirected in the event of a significant climate or disaster event, possibly diminishing the impacts and sustainability of the project. A climate risk screening was conducted at the project preparation phase (see Annex F). Mitigation measures: The integrated lake ecosystem management plans for the target areas will address climate and disaster risks, and capacity building and public awareness activities will also incorporate information and knowledge for strengthening resilience and improving coping capacities.
Environmental and Social	Moderate	Risks: A social, environmental and climate assessment procedure (SECAP) will be conducted during the project preparation phase following IFAD standards (see Annex F). There are inherent environmental and social risks associated with working with natural resource management, e.g., within or adjacent to sensitive ecosystems, and involving multiple stakeholders, including women, local communities and socially marginalized groups. Risks that were identified in the preliminary screening include the project possibly directly or indirectly affecting local communities' rights, lands, natural resources, territories, livelihoods, knowledge, social fabric, traditions, governance systems, and culture or heritage (tangible or intangible); and the execution of certain activities may not fulfill national or international labor and working conditions. Mitigation measures: Environmental and social safeguards are integrated into the project design, guided by the following management plans and frameworks: Environmental and Social Management Plan (ESMP), Stakeholder Engagement Plan, Gender Action Plan, Grievance Redress Mechanism, and Free, Prior and Informed Consent (FPIC) Plan.
Political and Governance	Moderate	Risks: The project strategy on integrated lake ecosystem management requires national and subnational governmental commitment and collaborative governance involving multiple sectors and stakeholders. There is a risk that

		buy-in may not be maintained throughout the project, e.g., because of staff turnover, reluctance to change compartmentalized approaches, etc. Moreover, there is risk that potential changes to the MoEF after the newly elected government is sworn into power in October 2024 may affect the current strong country ownership on the need to strengthen sustainable lake ecosystem management. Mitigation measures: The project will build upon existing governmental programs and governance mechanisms. Buy-in will be facilitated through targeted advocacy and awareness-raising activities, focused on key decision-makers at the national and subnational levels.
INNOVATION		
Institutional and Policy	Moderate	Risks: The proposed advances to policy and regulatory frameworks on integrated lake ecosystem management may not be realized due to shifts in government priorities, turnover of key decision-makers, or prolonged bureaucratic timeframes. Mitigation measures: The project strategy was formulated in direct response to commitment of the Ministry of Environment and Forestry (MoEF) to strengthen their ongoing efforts on mainstreaming integrated lake ecosystem management.
Technological	Moderate	Risks: Local communities and producers often lack technological knowledge and training for accessing certain opportunities and implementing innovative practices. These capacity constraints may limit their ability to actively participate in technologically based interventions. Mitigation measures: Capacity building is embedded across the project strategy, which particularly emphasizes the inclusion of women, youth and socially marginalized groups. At the farm level, demonstration plots and farmer field school approaches will be promoted, with inclusion of extension service officers to facilitate upscaling and sustainability. Cross-learning among the three target locations will provide important learning opportunities. Application of digital solutions will also be part of the capacity building activities, to help enable local producers to engage in the digital world more effectively. Establishment of the lake centers under Component 3 of the project are envisaged to provide innovation hubs, promoting innovation in integrated lake ecosystem management. Furthermore, a Knowledge Management and Learning Framework Plan (see Annex V) is an integral part of the project strategy, providing guidance on ensuring regular and targeted knowledge sharing, awareness-raising, and communications
Financial and Business Model	Moderate	Risks: Local producers often cannot meet the barriers of entry and lack knowledge and capacity to access financing, thus limiting their ability to engage in innovative business models and partnerships. Mitigation measures: The integrated approaches incorporated in the project strategy will facilitate more effective collaboration and communication among national and subnational stakeholders. The nature-based solutions in Component 2 will provide local producers to engage with government, civil society and private sector partners. Also, demonstration and training in climate-smart agriculture and diversified farming systems will help enable participation in green value chains and other innovative business models.

EXECUTION		
Capacity	Moderate	Risks: Capacities of national and subnational institutional partners may be insufficient to implement the project and to ensure durable impacts after GEF funding ceases. Procurement and financial risk assessments were conducted during the project preparation phase; Whilst the procurement capacity in subnational level is insufficient due to there is no dedicated commitment officer maker (PPK) in place for the project as well as the certified procurement person in BPDAS. Mitigation measures: The project management unit will be established in the MoEF Directorate of Rehabilitation of Inland Waters and Mangroves. This is a dedicated directorate whose mandate is directly aligned with the project strategy of mainstreaming integrated lake ecosystem management. Capacity building is an important part of the project description, strengthening institutional and individual capacities for ensuring sufficient sustainability structures are incorporated in the project design. In addition, the certified PPK will be assigned in the Project Management Unit to assist the project. The PPK has experience in managing complex procurement and fiduciary aspects with other international agencies.district level, ensuring widespread service provider access across the entire project area. Project Procurement Arrangement will also include IFAD oversight arrangements as part of its supervision process along with dedicated internal and external audits. Financial Management Risks: The overall Financial Management (FM) risk is substantial, based on assessments at the country, entity, and project levels. Major FM risks stem from the lack of experience of Executing Agencies (EAs) and Implementing Agencies (IAs) in implementing projects funded by IFAD and other International Financial Institutions (IFIs). Additional risks include a shortage of qualified finance and project staff, a complex budgeting process, an accounting system not prepared for IFAD reporting, and unfamiliarity with fund flows and procurement processes. Assessments indicate that the prevailing government financial, accounting, and auditing policies and systems generally meet international standards. The government has adequate internal control systems and financial reporting arrangements. However, the EAs and IAs have limited experience with externally financed projects, particularly those funded by GEF/IFAD. Therefore, they need to strengthen their FM capacity to understand and implement IFAD's FM requirements for this particular project. Mitigation measures: A Financial Management Specialist needs to be recruited and working full time at central level (NPMO) FM staff will be trained and detailed Financial Manual and Procurement guidelines will be developed. Accounting software will be procured for the project at start-up. To improve the FM capacity of the EA and IAs, IFAD FM consultants will be engaged during the implementation of the Project. The FM consultants will work closely with the EA and IAs to provide support, advice, and assistance in respect to all aspects of FM for the Project. The consultants will also provide training on IFAD loan disbursement procedures and FM practices to the accounting staff in the EA and IAs. The EAs and IAs will maintain separate project records and accounts

		that are adequate to identify works and services financed from the IFAD loan proceeds. These records and accounts will be audited annually.
Fiduciary	Moderate	Procurement Management Risks: The Executing Agency (MoEF) may not have experience or systems to efficiently manage the GEF funds. Also, committed co-financing may be delayed or not realized due to unforeseen circumstances. Procurement and financial risk assessments were conducted during the project preparation phase. The dedicated staff each for procurement and financial person to support the project is not available at the moment; the EA normally appoints one person both for finance and procurement to administer the project. There is no procurement certified person in the EA existing structured staff. Procurement risks for the GEF-8 LAKES project, as outlined in the procurement risk matrix (PRM), are classified as moderate. This assessment is due to several factors: Challenges in procurement capacity in Directorate RPDM and districts and enforcement/oversight of the procurement procedures; Challenges in procurement management and contract management by the respective procuring entity. While there are robust legal processes in place to manage prohibitive practices and whistle blower protection, enforcement remains constrained. The Directorate of RPDM lacks experience in procurement (IFI Donor) funded project. Despite the DG procurement selection committee (UKPBJ) has experience managing the Donor funded project. Mitigation measures: The GEF-8 LAKES project will address these risks by adopting mitigation measures which include procurement training at the beginning of the project and will conduct annual refresher courses with LKPP Accredited trainers. The Directorate PRDM will appoint a dedicated procurement commitment maker (PPK) and a procurement team with accredited procurement experts. Additionally, the Directorate RPDM will adhere to the Indonesian Presidential Decree 12/2021 and National Public Procurement Agency (LKPP) regulations in utilizing the E-Procurement and E-Catalogues. The latest E-catalogue is available at national and
Stakeholder	Moderate	Risks: Certain stakeholder groups (e.g., private sector, civil society, local communities, women) may not be meaningfully engaged in the project, e.g., due to reluctance to adopt sustainable management practices, because of ineffective communication, or attributable to cultural barriers. Mitigation measures: Extensive stakeholder consultations were conducted during the project preparation phase. These consultations were complemented by stakeholder and gender analyses, which informed the project Stakeholder Engagement Plan (see Annex J) and Gender Action Plan (see Annex I). Furthermore, a Knowledge Management and Learning Framework Plan (see Annex V) is an integral part of the project strategy, providing guidance on ensuring regular and targeted knowledge sharing, awareness-raising and communications during project implementation.

Other	Moderate	Risks: Global and/or national macro-economic trends or events may impact the effectiveness and stakeholder participation of the integrated approaches promoted in the project strategy. For example, external demand for certain

		agricultural crops or commodities may lead to increased pressure on lake ecosystem resources and local producers may be reluctant to adopt sustainable management practices. Mitigation measures: The project will promote livelihood diversification for local producers, leading to food and nutrition security co-benefits, as well as increased resilience to macro-economic disruptions and the impacts of climate change. Engagement with private sector partners, e.g., inserting local producers into green value chains will also help mitigate risks associated with macro-economic externalities.
Overall Risk Rating	Moderate	The overall risk rating for this project is Moderate. Management plans and frameworks have been developed to ensure risks are mitigated and managed proactively. As part of the project monitoring & evaluation, identified risks and mitigation measures implemented will be closely monitored and evaluated, providing timely feedback to the project team to enable relevant adaptive management.

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

Explain 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.

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.

Confirm if any country policies that might contradict with intended outcomes of the project have been identified, and how the project will address this. (max. 500 words, approximately 1 page)

BD-1-2: Sustainable use of biodiversity. As part of the integrated lake ecosystem management plans, the project will promote agroecological approaches that enhance livelihoods and food and nutrition security of local communities through Nature-based solutions.

BD-1-3 Ecosystem restoration. Implementation of the integrated lake ecosystem management plans in the three demonstration areas under Component 2 will include community-based approaches on restoration of agro-ecosystem services, avoidance of forest loss, erosion control and other interventions that focus on creating co-benefits and enhancing livelihoods and food and nutrition security for local communities.

BD-1-4: Biodiversity mainstreaming in priority sectors. Under Component 1, policy and regulatory frameworks will be strengthened to facilitate mainstreaming of integrated lake ecosystem management and incentivize biodiversity-positive natural resource use. Moreover, an instrument will be developed that will help enable incorporation of integrated lake ecosystem management principles into spatial and land use planning processes, rationalizing production without degrading ecosystem services and biodiversity. Implementation of improved practices will be conducted under Component 2 in the demonstration areas, including in the agricultural, forestry, tourism, and freshwater fisheries sectors.

BD-1-5: Prevention, control, and management of Invasive Alien Species (IAS). The project will collaborate with the FAO-GEF project (GIF ID 10705), promoting the importance of lake ecosystems in the development of the National Strategy and Action Plan for the Management of Invasive Alien Plant Species in Indonesia (NISSAP). Initiatives on prevention, control and management of IAS will be incorporated into the integrated lake ecosystem management plans.

The project is designed under the GEF-8 Biodiversity focal area; however, GHG mitigation co- benefits will be generated through improved landscape practices and restoration with the high carbon lake ecosystems in the three demonstration areas. Consistent with the Koronivia Joint Work on Agriculture, the interventions focused on enhancing livelihoods and food and nutrition security of local communities will include improved agroecological practices including sustainable and climate resilient soil and water management.

Alignment with country strategies related to multilateral environmental agreements

The **Indonesia National Biodiversity Strategy and Action** Plan (IBSAP 2025-2035), outlines the country's national strategies and plans that reflect the relevant measures in the UN Convention on Biological Diversity (UNCBD) and the Kunming-Montreal Global Biodiversity Framework (GBF). The proposed GEF-8 LAKES project is aligned with several of the IBSAP national targets, including Target 1, which calls for increased protection of high biodiversity areas through integrated land and marine spatial planning; restoration of critically degraded land (Target 2); increasing protection of high biodiversity areas outside conventional protected areas (Target 3); controlling and reducing invasive alien species (Target 5); reducing pollution and the associated impacts (Target 6); strengthening resilience to the impacts of climate change, including through prevention of loss of forests and other ecosystems (Target 7); generating multiple environmental and socioeconomic benefits through the sustainable use of biodiversity (Target 8); sustainable forestry, agriculture and fisheries practices (Target 9); enhancing sustainable use of ecosystem services (Target 10); promoting innovation and knowledge sharing (Target 13); mainstreaming biodiversity conservation into national and subnational development planning (Target 16); and ensuring inclusive participation and representation of Indigenous Peoples and local communities, women, youth and socially marginalized groups (Target 17).

The **Enhanced Nationally Determined Contribution of Indonesia (NDC 2022) submitted** to the UN Framework Convention on Climate Change (UNFCCC) Secretariat includes an increased emission reduction target from 29% in First NDC and Updated NDC to 31.89% unconditionally and from 41% in the Updated NDC to 43.20% conditionally. The NDC 2022 is the transition towards Indonesia's Second NDC which will be aligned with the Long-Term Low Carbon and Climate Resilience Strategy (LTS-LCCR) 2050 with a vision to achieve net-zero emission by 2060 or sooner. The GEF-8 LAKES project is aligned with the ambitions of the NDC 2022 in the agricultural, forestry and other land use (AFOLU) sector, through facilitating integrated lake ecosystem management, thus safeguarding and restoring carbon stocks through improved conservation of soil and water resources and decreased encroachment into forest areas, as well as enhancing lake ecosystem health assessment methodologies by strengthening carbon balance considerations.

Several of the thirteen programmes and projects outlined in the country's **National Action Programme for Combating Land Degradation in Indonesia (NAP 2002)**, in relation to the UN Convention to Combat Desertification (UNCCD), are reflected in the LAKES project strategy, namely Promoting Agroforestry, Prevention of Land Degradation, Rehabilitation of Degraded Lands, Improvement of Water Conservation, Empowerment of Local Communities and Local Institutions, Providing Guidelines and Manuals, and Creating and Improving Market Systems.

Contributions to the Kunming-Montreal Global Biodiversity Framework 2030 targets

The project will also contribute to the achievement of several of the GBF 2030 targets, primarily **Target 1** (through implementation of integrated lake ecosystem management approaches, under Outputs 1.1.1, 2.1.1, 2.1.2, and 2.1.3); **Target 10** (sustainably managing areas under agriculture, fisheries, forestry and tourism in the target lake ecosystems, under Outputs 2.1.1, 2.1.2, 2.1.3); and **Target 14** (strengthening regulatory and policy frameworks on lake ecosystem management, and facilitating mainstreaming and improved multi-stakeholder governance, under Outputs 1.1.1, 2.1.1, 2.1.2) .

C.2 Alignment with IFAD corporate priorities.

Alignment with Sustainable Development Goals (SDGs)

The project will make contributions to the achievement of Sustainable Development Goal (SDG) targets, prioritized to SDG 6 (Clean Water and Sanitation, especially on the target 6.6 to protect and restore water related ecosystems, including mountains, forests, wetlands, rivers aquifers, and lakes) and SDG 15 (Life on Land), ensuring improved management, restoration and sustainable use of lake ecosystems; as well as other SDGs, including SDG 2 (Zero Hunger), SDG 5 (Gender Equality), SDG 7 (Affordable and Clean Energy), SDG 13 (Climate Action) and SDG 17 (Partnerships for the Goals).

Alignment with national priorities

The project strategy is aligned with the national priorities outlined in the Republic of Indonesia's Medium-Term Development Plan for 2020-2024 (RJPMN 2020-2024). Under Management of Economic Resources in the Policy Directions and Strategies of the RJPMN 2020-2024, there are several complementary aims that the GEF-8 project will address, including "maintaining, restoring, and conserving water resources and their respective ecosystem, including revitalizing existing lakes and green infrastructure". The RJPMN 2020-2024 also highlights the focus on the 15 national priority lakes.

Alignment with IFAD policies and corporate priorities

The project is also directly aligned with each of the three strategic objectives outlined in the IFAD 2016-2025 Strategic Framework (*Enabling inclusive and sustainable rural transformation*), and with the IFAD 2023-2027 Country Strategic Opportunities Programme for the Republic of Indonesia. This project is related to the YESS, HDDAP and TEKAD project in Indonesia, particularly **Strategic Objective 1** regarding sustainably

managed natural resources, and under the sub-strategy on diversification, i.e., promoting agroforestry systems that increase incomes and promote sustainable forest, soil and water management; and also **Strategic Objective 2**, related to institutions and organizations, from village to national level, strengthening their capacities to respond to the needs of small-scale producers.

The project also aligns with IFAD's 2019-2025 Environment and Climate Change Strategy by promoting climate-smart agricultural practices, ecosystem restoration, and nature-based solutions to enhance resilience in vulnerable communities.

Country ownership

The development of the project has been driven by the priorities of the Directorate of Inland Waters and Mangroves, which is the entity of the MoEF mandated to oversee the management of the lake ecosystems in the country. Closely aligning the project strategy to the needs of the Ministry ensures strong country ownership.

Harmonization and partnerships

The project strategy is predicated on integrated approaches to lake ecosystem management, which focuses on harmonizing sector-level priorities and strengthening partnerships among both governmental and non-governmental stakeholders.

D. POLICY REQUIREMENTS

Gender Equality and Women's Empowerment

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

Yes

1) Does the project expect to include any gender-responsive-measures to address gender gaps or promote gender equality and women's empowerment?

Yes

If the project expects to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment, please indicate in which results area(s) the project is expected to contribute to gender equality:

Closing gender gaps in access to and control over natural resources;

Yes

Improving women's participation and decision-making; and/or

Yes

Generating socio-economic benefits or services for women.

Yes

2) Does the project's results framework or logical framework include gender-sensitive indicators?

Yes

Stakeholder Engagement

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

Yes

Select what role civil society will play in the Project

Consulted only;

Member of Advisory Body; Contractor; Yes

Co-financier;

Member of project steering committee or equivalent decision-making body ;

Executor or co-executor;

Other (Please explain)

Private Sector

Will there be private sector engagement in the project?

Yes

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

Yes

Environmental and Social Safeguards

We confirm that we have provided information regarding Environmental and Social risks associated with the proposed project or program, including risk screenings/ assessments and, if applicable, management plans or other measures to address identified risks and impacts (this information should be presented in Annex E).

Yes

Please provide overall Project/Program Risk Classification

Overall Project/Program Risk Classification

PIF	CEO Endorsement/Approval	MTR	TE
High or Substantial	Medium/Moderate		

E. OTHER REQUIREMENTS

Knowledge management

We confirm that an approach to Knowledge Management and Learning has been clearly described during Project Preparation in the Project Description and that these activities have been budgeted and an anticipated timeline for delivery of relevant outputs has been provided.

Yes

Socio-economic Benefits

We confirm that the project design has considered socio-economic benefits to be delivered by the project and these have been clearly described in the Project Description and will be monitored and reported on during project implementation (at MTR and TER).

The project will deliver significant socioeconomic benefits at both national and local levels, translating into measurable global environmental and climate adaptation outcomes. The estimated number of people benefitting from the GEF investment is 10,000, half of whom will be women, particularly in rural communities where women play a key role in agricultural production, food security, and household livelihoods. By targeting smallholder farmers, indigenous peoples, and other marginalized groups, the project focuses on inclusive and sustainable development strategies that align with global environmental goals.

Empowerment and inclusion. The project's pro-poor strategy prioritizes the empowerment of rural women, small-scale producers, and indigenous communities. Women, in particular, are crucial to the success of the project due to their central role in food production and management of rural agricultural systems. By providing targeted support, the project will enhance women's decision-making power and control over resources, enabling them to benefit from more sustainable livelihoods.

Sustainable livelihoods and value chains. Smallholder farmers and other marginalized groups will benefit from improved agricultural practices, access to sustainable value chains, and diversified farming systems. These interventions will promote economic resilience by enabling farmers to adopt climate-smart agriculture and integrate their produce into more sustainable markets. The project will encourage the use of agroecological methods and good agricultural practices that enhance productivity while reducing environmental impacts.

Increased Resilience to Climate Change and Natural Disasters. The project will enhance the resilience of local communities by promoting sustainable land use practices and improving the management of agricultural and forest ecosystems. Integrated landscape management will reduce unsustainable practices, restore degraded

ecosystems, and strengthen biodiversity conservation, enabling communities to better cope with environmental hazards such as floods, droughts, and landslides. By raising awareness and building local capacities for climate adaptation, the project will equip smallholder farmers and marginalized groups with the tools needed to protect their livelihoods and maintain vital ecosystem services in the face of climate variability and natural disasters.

Protection and Promotion of Traditional Knowledge. Recognizing the value of traditional knowledge held by indigenous peoples, the project will protect and promote these practices within the context of sustainable ecosystem management. By integrating local knowledge into land and resource management strategies, the project not only preserves cultural heritage but also ensures that communities can continue to rely on time-tested methods that support biodiversity and ecosystem health.

Social Capital and Community Engagement. The project will foster increased social capital through the formation and expansion of smallholder farmer associations and cooperatives. By promoting inclusive participation of women, indigenous peoples, and other marginalized groups in the planning and implementation of conservation and restoration activities, the project strengthens social cohesion and creates opportunities for collective action. This expanded social capital will enhance the sustainability of project interventions by ensuring continued community ownership and participation.

Overall, the project's inclusive and sustainable approach ensures that socioeconomic benefits are equitably distributed among rural communities, while also contributing to broader global environmental and adaptation goals. By empowering marginalized groups, promoting sustainable value chains, and enhancing climate resilience, the project will provide long-lasting benefits that improve both livelihoods and ecosystem health.

ANNEX A: FINANCING TABLES

GEF Financing Table

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 ($)
IFAD	GET	Indonesia	Biodiversity	BD STAR Allocation: BD-1	Grant	7,105,936.00	675,064.00	7,781,000.00
Total GEF Resources ($)						**7,105,936.00**	**675,064.00**	**7,781,000.00**

Project Preparation Grant (PPG)

Was a Project Preparation Grant requested?

true

PPG Amount ($)

200000

PPG Agency Fee ($)

19000

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	PPG($)	Agency Fee($)	Total PPG Funding($)
IFAD	GET	Indonesia	Biodiversity	BD STAR Allocation: BD-1	160,000.00	15,200.00	175,200.00
IFAD	GET	Indonesia	Climate Change	CC STAR Allocation: CCM-1-4	40,000.00	3,800.00	43,800.00
Total PPG Amount ($)					**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($)
IFAD	GET	Indonesia	Biodiversity	BD STAR Allocation	6,400,000.00
IFAD	GET	Indonesia	Climate Change	CC STAR Allocation	1,600,000.00
Total GEF Resources					**8,000,000.00**

Focal Area Elements

Programming Directions	Trust Fund	GEF Project Financing($)	Co-financing($)
BD-1-2	GET	2,370,750.00	16564700
BD-1-3	GET	1,803,676.00	12602500
BD-1-4	GET	2,180,650.00	15236450
BD-1-5	GET	750,860.00	5246350

Total Project Cost		**7,105,936.00**	**49,650,000.00**

Confirmed Co-financing for the project, by name and type

Please include evidence for each co-financing source for this project in the tab of the portal

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Recipient Country Government	Ministry of Environment and Forestry (MoEF)	Public Investment	Investment mobilized	44650000
GEF Agency	IFAD	Grant	Investment mobilized	5000000
Total Co-financing				**49,650,000.00**

Please describe the investment mobilized portion of the co-financing

The co-financing with a total of USD 49.65 million is provided by IFAD as the implementing agency with USD 5 million, and the Government of Indonesia (GoI) through the Ministry of Environment & Forestry (MoEF) with USD 44.65 million as the executing agency. The budget from IFAD is complemented by loan projects in Indonesia through the Youth Entrepreneurship and Employment Support Services Programme (YESS: 2018 - 2029) and Horticulture Development in Dryland Areas Sector Project (HDDAP: 2023 – 2029). GoI The Government of Indonesia's contributions correspond to will contribute from the allocations from the annual budget plan from 2025 – 2029 with a total of USD 44.65 million, mostly from the ministry budget. Contributions from other partners, including local governments, will be explored during project implementation.

ANNEX B: ENDORSEMENTS

GEF Agency(ies) Certification

GEF Agency Type	Date	Project Contact Person	Phone	Email
GEF Agency Coordinator	1/20/2025	Paola Palestini IFAD GEF Technical Focal Point		p.palestini@ifad.org
Project Coordinator	1/20/2025	Hani A. Elsadani Salem		h.elsadani@ifad.org
GEF Agency Coordinator	2/6/2025	Pierre Guedez, Lead		p.guedez@ifad.org

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

Please attach the Operational Focal Point endorsement letter(s) with this template.

Name of GEF OFP	Position	Ministry	Date (MM/DD/YYYY)
Mrs. Laksmi Dhewanti	Director General of Climate Change Control	Ministry of Environment & Forestry – Indonesia	10/18/2023

ANNEX C: PROJECT RESULTS FRAMEWORK

Please indicate the page number in the Project Document where the project results and M&E frameworks can be found. Please also paste below the Project Results Framework from the Agency document.

Result Statements	Objectively Verifiable Indicators				Means of Verification		Risks/ Assumptions	
	Indicator	Baseline	Midterm Target	End Target	Source	Frequency	Responsibility	
Goal: ***Increased climate-resilient livelihoods for poor and vulnerable Indonesians and strengthened both land use and lake governance and police making for sustainable integrated lake ecosystem management***								
Project Objective: *To protect biodiversity and safeguard the resilience of Indonesia's lake ecosystems by establishing integrated governance systems, empowering local communities with sustainable livelihoods, and enabling national-scale adoption of sustainable lake management practices*	GEF Core Indicator 3: Area of land and ecosystems under restoration (hectare)	0	2,000 ha	4.496 ha	Survey/ Project M&E/MIS	Baseline, Midline, Endline	MOEF/PMU	Multi-Stakeholders willingness to restore the lake Availability of national and local counterparts No climate shocks Changes in government structures and policies
	GEF Core Indicator 4: Area of landscapes under improved practices (hectare)	0	progress based on the integrated lake management plans (Limboto, Batur & Rawa Pening)	126,875 ha Limboto: 89,386 ha Batur: 10,211 ha Rawa Pening: 27,278 ha	Survey/ Project M&E/MIS	Baseline, Midline, Endline	MOEF/PMU	
	GEF Core Indicator 6: Greenhouse gas emissions mitigated (metric tons of CO2e)	0	based on the baseline & method agreed by GoI.	1.39 million metric tons CO2e	Survey/ Technical Analysis, Project M&E/MIS	Baseline, Midline, Endline	MOEF/PMU	
	Core Indicator 11: People benefiting from GEF-financed investments, disaggregated by sex (count)	0	4,000 persons (2,000 women/girls	10,000 persons (5,000	Survey/ Project M&E/MIS	Baseline, Midline, Endline	MOEF/PMU	

				women/girls)				
Outcome 1: *Enhanced capacity for a participatory and sustainable lake ecosystem management and governance in Indonesia*	1.1. Integrated lake ecosystem management structure functional at national and subnational levels (count)	0	1 national (start-up) 3 sub-national (start-up)	1 national (ongoing) 3 sub-national (ongoing)	Project M&E/MIS	Annually	PMU	High commitment of government at all levels to implement the integrated lake ecosystem management
	1.2. Increased number of regulations on lake ecosystem management and governance (count)	Upon conduct of baseline	4 (start-up)	4 (ongoing)	Project M&E/MIS	Baseline Annually	PMU	
	1.3. Increased stakeholder satisfaction on the lake ecosystem health assessment methodology and its implementation (percentage)	Upon conduct of baseline on current methodology	Updated lake ecosystem health methodology completed and under pilot implementation	50% increase from baseline in satisfaction of the implement-ability of the lake ecosystem heath assessment methodology	Survey/ Project M&E/MIS	Baseline, Midline, Endline	PMU	
	1.4. Lake ecosystem health of the three target lake ecosystems, measured using the updated lake ecosystem health assessment methodology	0	Baseline lake ecosystem heath assessed for the three target lake ecosystems, using the updated methodology.	10% increase in the assessed lake ecosystem health of the three target lake eocystems	Project M&E/MIS	Midline, Endline	PMU, assisted by lake management entities	
Outcome 2: *Improved integrated landscape and lake ecosystem governance and management that enhance biodiversity and climate-resilient livelihoods of poor and vulnerable communities, particularly women and youth in selected villages in the three demonstration areas*	2.1. Integrated landscape and lake ecosystem implemented at villages in line with regulations (national/ subnational) (count)	0	10 villages	11 villages	Project M&E/MIS	Annually	PMU/PPIUs	Willingness of multi-stakeholders within a lake ecosystem to restore the lake Support from relevant subnational government partners
	2.2. Local knowledge and nature-based solutions promoted and adopted to protect/propagate native species that preserve biodiversity (count)	0	6 practices	8 practices	Project M&E/MIS	Annually	PMU/PPIUs	
	2.3. Individuals' capacity enhanced in the adoption of environmentally sustainable and climate-resilient technologies and practices	0	40%	80%	Project M&E/MIS	Annually	PMU/PPIUs	
Outcome 3: *Enhanced community awareness and knowledge, contribution and*	3.1. Increase in the number institutions and organizations (public and private) sharing information to improve lake ecosystem health (count)	Upon conduct of baseline	3 national 3 province 1 Private companies	6 national 10 province 2 Private companies	Project M&E/MIS	Baseline Annually	PMU/PPIUs	Willingness and commitment of the government and participating non-government/ private organizations,

collaboration among stakeholders on lake ecosystem management, rehabilitation and restoration	3.2. Increase in the resource allocation (funds, HR) of participating institutions and organizations (public and private) to improve lake ecosystem health (percentage)	Upon conduct of baseline	10% annually	10% annually	Project M&E/MIS	Baseline Annually	PMU/PPIUs	villages, and individuals
	3.3. Shift in community knowledge, attitudes, and practices regarding lake ecosystem management, as indicated in the findings of the household surveys conducted in the intervention villages.	Household surveys establish baseline knowledge, attitudes, and practices, with gender disaggregated results	Knowledge management strategy updated based on baseline survey results	Statistically significant findings in shifts in community knowledge, attitudes and practices demonstrated (quantitative target to be established after baseline surveys)	Project M&E/MIS, household surveys conducted in the intervention villages	Baseline End of project	PPIUs	

ANNEX D: STATUS OF UTILIZATION OF PROJECT PREPARATION GRANT (PPG)

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

Project Preparation Activities Implemented	GETF/LDCF/SCCF Amount ($)		
	Budgeted Amount	Amount Spent To date	Amount Committed
Consultancy Service (international)	200,000.00	43,000.00	
Consultancy Service (National)		81,900.00	
Travel Cost (International)		8,462.00	
Travel Cost (national)		11,300.00	
Workshop: Kick Off Mission (National Level)		15,400.00	
National Workshops		7,700.00	
Province/district workshop		6,100.00	
National Focus Group Discussions (FGDs)		9,688.00	
Field survey (including meetings with community in the villages)		15,250.00	
Baseline studies		1,200.00	
Total	**200,000.00**	**200,000.00**	**0.00**

ANNEX E: PROJECT MAP AND COORDINATES

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

Location Name	Latitude	Longitude	GeoName ID
Midpoint of Lake Limboto	0.5844	122.9861	

Location Description:

Activity Description:

Location Name	Latitude	Longitude	GeoName ID
Downstream village in the Tabongo sub-catchment, Lake Limboto	0.5589	122.9256	

Location Description:

Activity Description:

Location Name	Latitude	Longitude	GeoName ID
Middle-stream village in the Batulayar sub-catchment, Lake Limboto	0.5481	122.8519	

Location Description:

Activity Description:

Location Name	Latitude	Longitude	GeoName ID
Midpoint of Lake Batur	-8.2567	115.4086	

Location Description:

Activity Description:

Location Name	Latitude	Longitude	GeoName ID
Village in Gede Tampuriang and Kedisan Sub-Catchmen, Lake Batur	-8.2789	115.3775	

Location Description:

Activity Description:

Location Name	Latitude	Longitude	GeoName ID
Village in Kedisan Sub-Catchment, Lake Batur	-8.2780	115.3900	

Location Description:

Activity Description:

Location Name	Latitude	Longitude	GeoName ID
Village in Kedisan Sub-Catchment, Lake Batur	-8.2811	115.4058	

Location Description:

Activity Description:

Location Name	Latitude	Longitude	GeoName ID
Village in Kedisan and Trunyan Sub-Catchment, Lake Batur	-8.2547	115.4314	

Location Description:

Activity Description:

Location Name	Latitude	Longitude	GeoName ID
Village in Balingkang, Melilit, Serongga, Trunyan Sub-Catchment, Lake Batur	-8.2200	115.3833	

Location Description:

Activity Description:

Location Name	Latitude	Longitude	GeoName ID
Village in Gede Tampuriang and melilit Sub-Catchment, Lake Batur	-8.2503	115.3622	

Location Description:

Activity Description:

Location Name	Latitude	Longitude	GeoName ID
Midpoint of Lake Batur	-7.2875	110.4400	

Location Description:

Activity Description:

Location Name	Latitude	Longitude	GeoName ID

Village in the Parat sub-catchment, Lake Rawa Pening	-7.3767	110.4381	

Location Description:

Activity Description:

Location Name	Latitude	Longitude	GeoName ID
Village in the Parat sub-catchment, Lake Rawa Pening	-7.3625	110.4433	

Location Description:

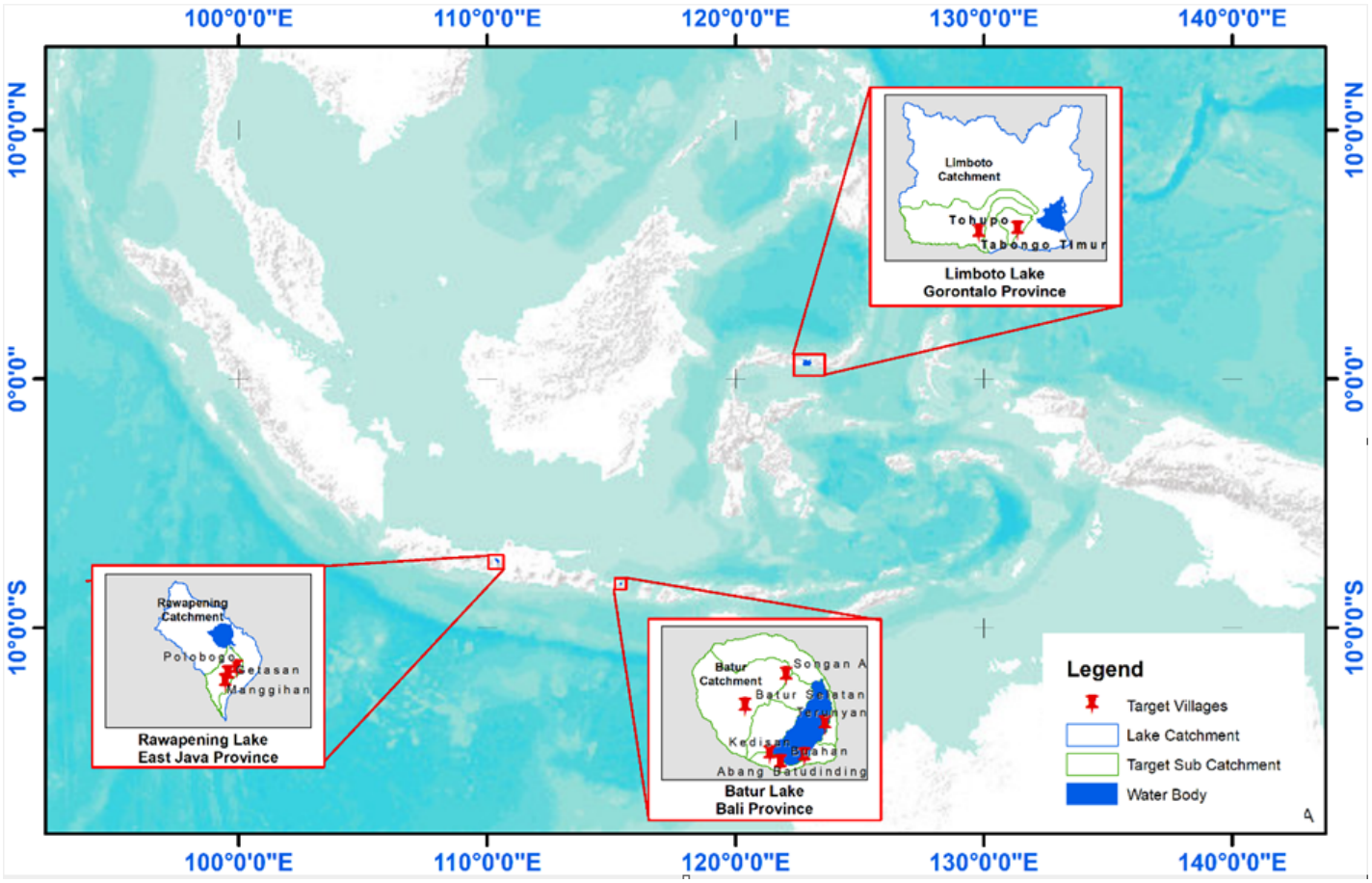
Activity Description:

Location Name	Latitude	Longitude	GeoName ID
Village in the Parat sub-catchment, Lake Rawa Pening	-7.3519	110.4594	

Location Description:

Activity Description:

Please provide any further geo-referenced information and map where project interventions are taking place as appropriate.



ANNEX F: ENVIRONMENTAL AND SOCIAL SAFEGUARDS SCREEN AND RATING

Attach agency safeguard datasheet/assessment report(s), including ratings of risk types and overall project/program risk classification as well as any management plans or measures to address identified risks and impacts (as applicable).

Title

GEF8_LAKES_Annex F

ANNEX G: BUDGET TABLE

Please upload the budget table here.

Appendix A: Indicative Project Budget Template

Expenditure	Detailed Description	Component (USDeq.)	Total	Responsible Entity

Category		Component 1			Component 2			Component 3		Sub-Total	M & E	PMC	(USD eq.)	(Executing Entity receiving funds from the GEF Agency)[1]
		Outcome 1.1	Outcome 1.2	Outcome 1.3	Outcome 2.1	Outcome 2.2	Outcome 2.3	Outcome 3.1	Outcome 3.2					
Works	Participatory design & establishment with farmers (female & male) for demonstration plots of climate-smart agricultural, vegetated strip terraces with leguminouse trees, and intercropping/alleycropping practices in Limboto	-	-	-	-	-	300 000	-	-	300 000	-	-	300 000	Ministry of Environment & Forestry
	Participatory design & establishment with farmers (female & male) for demonstration plots of climate-smart agricultural, vegetated strip terraces with leguminouse trees, and intercropping/alleycropping practices in Batur	-	-	-	-	-	450 000	-	-	450 000	-	-	450 000	Ministry of Environment & Forestry
	Participatory design & establishment with farmers (female & male) for demonstration plots of climate-smart agricultural, vegetated strip terraces with leguminouse trees, and intercropping/alleycropping practices in Rawa Pening	-	-	-	-	-	225 000	-	-	225 000	-	-	225 000	Ministry of Environment & Forestry
	Participatory design and establishment demonstration plots of tree nurseries in KBR - Bebun Bibit Rakyat (community nursery) in Rawa Pening, Batur & Limboto Lake	-	-	-	-	-	44 055	-	-	44 055	-	-	44 055	Ministry of Environment & Forestry
	Participatory design and establishment demonstration plots of agroforestry systems in Rawa Pening, Batur & Limboto Lake	-	-	-	-	-	165 000	-	-	165 000	-	-	165 000	Ministry of Environment & Forestry
	Participatory design and establishment demonstration plots of forest-land restoration in Rawa Pening, Batur & Limboto Lake	-	-	-	-	-	33 000	-	-	33 000	-	-	33 000	Ministry of Environment & Forestry
	Participatory design and establishment demonstration plots of NTFP management for beekeeping (Meliponiculture)	-	-	-	-	-	165 000	-	-	165 000	-	-	165 000	Ministry of Environment &

	in Rawa Pening, Batur & Limboto Lake													Forestry
	Participatory design and construction of Retaining Dam (Dam Penahan-DPn or ecohydroloic) 1 unit	-	-	-	-	-	4 000	-	-	4 000	-	-	4 000	Ministry of Environment & Forestry
	Participatory design and construction of Ecohydrolic 2 units	-	-	-	-	-	8 000	-	-	8 000	-	-	8 000	Ministry of Environment & Forestry
	Participatory design and construction of Gully Plug 12 units	-	-	-	-	-	13 800	-	-	13 800	-	-	13 800	Ministry of Environment & Forestry
	Participatory design and construction of IPAH (Rainwater Management Instalation) 340 units	-	-	-	-	-	210 000	-	-	210 000	-	-	210 000	Ministry of Environment & Forestry
	Participatory design and construction of SRA (water absortion) 340 units	-	-	-	-	-	112 200	-	-	112 200	-	-	112 200	Ministry of Environment & Forestry
	Participatory eco-edutourism and patrol for monitoring primary & secondary forests (citizen sciene)	-	-	-	-	-	158 400	-	-	158 400	-	-	158 400	Ministry of Environment & Forestry
	Participatory design and construction of domestic-waste management tank	-	-	-	-	-	11 000	-	-	11 000	-	-	11 000	Ministry of Environment & Forestry
	Participatory construction of 50 communal/individual biogas management units per selected village	-	-	-	-	-	228 000	-	-	228 000	-	-	228 000	Ministry of Environment & Forestry
	Participatory establishment and management of household kitchen farms to improve knowledge of local, healthy, nutritious food sources by women, youth and social marginalized groups	-	-	-	-	-	275 000	-	-	275 000	-	-	275 000	Ministry of Environment & Forestry
	Construct or improve the indoor facilities: display rooms, theatre, visitors assemble room, classroom and services (amenities) for LAKES education in 3 lakes (Rawa Pening, Batur & Limboto)	-	-	-	-	-	-	210 000	-	210 000	-	-	210 000	Ministry of Environment & Forestry

	Construct or improve the outdoor facilities: landscaping/gardens, stores, etc Mapping/identification need assessement on the lake system information (inclusive lake thematic data) for the national & sub-national agencies	-	-	-	-	-	-	30 000	-	30 000	-	-	30 000	Ministry of Environment & Forestry
	Facilitate the improvement and modification to make attractive and information on the building of LAKES Center	-	-	-	-	-	-	18 000	-	18 000	-	-	18 000	Ministry of Environment & Forestry
	Improve the landscape (micro-ecosystems) of LAKES Center	-	-	-	-	-	-	9 000	-	9 000	-	-	9 000	Ministry of Environment & Forestry
	Production of display booths, stands and knowledge materials for display purposes and education	-	-	-	-	-	-	6 000	-	6 000	-	-	6 000	Ministry of Environment & Forestry
Goods	Production of basic materials for display and show purposes): photos, archaeological materials, cultural products, info graphics, stories, etc	-	-	-	-	-	-	30 000	-	30 000	-	-	30 000	Ministry of Environment & Forestry
	Production of materials (including digital and printed) for display updating, sharing and networking purposes	-	-	-	-	-	-	-	9 000	9 000	-	-	9 000	Ministry of Environment & Forestry
	Production of performing arts, fine arts, merchandises, videos, films for external education purposes	-	-	-	-	-	-	-	63 000	63 000	-	-	63 000	Ministry of Environment & Forestry
	PMU Office Equipment	-	-	-	-	-	-	-	-	-	-	5 000	5 000	Ministry of Environment & Forestry
Vehicles										-			-	
Grants/ Sub-grants										-			-	
Revolving funds/ Seed funds / Equity										-			-	

Sub-contract to executing partner / entity	Data collection, analyse, and reporting the livelihood and household baseline study in all targeted villages in 3 lakes (Limbito, Batur, Rawa Pening)	-	-	-	26 400	-	-	-	-	26 400	-	-	26 400	Ministry of Environment & Forestry
	Preparation for data collection, analyse, and reporting the rapid market appraisals (RMA) and financing scheme assessment	-	-	-	4 800	-	-	-	-	4 800	-	-	4 800	Ministry of Environment & Forestry
	Data collection, analyse, and reporting the rapid market appraisals (RMA) and financing scheme assessment	-	-	-	11 000	-	-	-	-	11 000	-	-	11 000	Ministry of Environment & Forestry
	Conducting an assessment to the potential impact of the project on Cultural Heritage (CH) if any plan to build constructions in surrounding area of CH; facilitated by CC/SE	-	-	-	-	6 000	-	-	-	6 000	-	-	6 000	Ministry of Environment & Forestry
	Conducting an assessment and develop documentation of local knowledge regarding lake management to strengthen and improve local knowledge as cultural heritage asset by consultation with representative of community, local government, local tourism institution; facilitated by CC/SE	-	-	-	-	6 000	-	-	-	6 000	-	-	6 000	Ministry of Environment & Forestry
	Implementation & operation of Knoweldge Center (KC) & Information Center in Rawa Pening Lakes - Central Java	-	-	-	-	-	-	184 226	-	184 226	-	-	184 226	Ministry of Environment & Forestry
	Implementation & operation of Knoweldge Center (KC) & Information Center in Batur - Bali Lakes							184 226		184 226			184 226	Ministry of Environment & Forestry
	Implementation & operation of Knoweldge Center (KC) & Information Center in Limboto Lakes - Gorontalo							184 226		184 226			184 226	Ministry of Environment & Forestry
	Data base maintenance and updating for MIS on the knowledge sharing and learning activities	-	-	-	-	-	-	-	9 000	9 000	-	-	9 000	Ministry of Environment & Forestry
Contractual Services –	Provide Expert Guidelines and/or technical guidance for the technical implementation of Government Regulation for	10 000	-	-	-	-	-	-	-	10 000	-	-	10 000	Ministry of Environment &

Individual	legal drafting consultant, environment consultant, limnology consultant, GHG consultant & Biodiversity coinsultant (resource person)													Forestry
	Provide Expert guideline on the development or sthrengthening regulations for Villages regulation (PERDA)	72 000	-	-	-	-	-	-	-	72 000	-	-	72 000	Ministry of Environment & Forestry
	Provide Expert guideline on the implementing regulations for Villages regulation (PERDA)	72 000	-	-	-	-	-	-	-	72 000	-	-	72 000	Ministry of Environment & Forestry
	Develop Campaign Material (expertise: communication specialist), 3 months	12 000	-	-	-	-	-	-	-	12 000	-	-	12 000	Ministry of Environment & Forestry
	Development of training modules to mainstream Integrated Lake Ecosystem sustainable management into the work of other ministries and agencies	12 000	-	-	-	-	-	-	-	12 000	-	-	12 000	Ministry of Environment & Forestry
	KC Design drafting (lumpsum)	-	-	-	-	-	-	12 000	-	12 000	-	-	12 000	Ministry of Environment & Forestry
	KC Business Plan drafting (This will include also identification of business entity in accordance with the current policies and regulation)- lumpsum	-	-	-	-	-	-	18 000	-	18 000	-	-	18 000	Ministry of Environment & Forestry
	Supervision Mission (independent consultants)	-	-	-	-	-	-	-	-	-	20 000	-	20 000	Ministry of Environment & Forestry
Contractual Services – Company	Provide Expert on the development national/sub-national stakeholder platform (institution)	54 000	-	-	-	-	-	-	-	54 000	-	-	54 000	Ministry of Environment & Forestry
	Provide Enviornment Expert and Guidance to establish village regulations in 12 villages (average: 4 villages per location), each 3 times	72 000	-	-	-	-	-	-	-	72 000	-	-	72 000	Ministry of Environment & Forestry
	Provide Limnology Expert and Guidance to establish village regulations in 12 villages (average: 4 villages per location), each 3 times	72 000								72 000	-	-	72 000	Ministry of Environment &

														Forestry
	Conduct Baseline Data and Information Development for assessing and monitoring the health of lake ecosystem including its contribution to biodiversity conservation and ghg emission reduction (for at least 15 lakes)	-	120 000	-	-	-	-	-	-	120 000	-	-	120 000	Ministry of Environment & Forestry
	Conduct Development of methodology, standard and its manual for lake ecosystem health assessment and monitoring.	-	40 000	-	-	-	-	-	-	40 000	-	-	40 000	Ministry of Environment & Forestry
	Mapping/identification need assessement on the lake system information (inclusive lake thematic data) for the national & sub-national agencies	-	-	120 000	-	-	-	-	-	120 000	-	-	120 000	Ministry of Environment & Forestry
	Develop the design and masterplan for Database and Spatial Information system.	-	-	26 000	-	-	-	-	-	26 000	-	-	26 000	Ministry of Environment & Forestry
	Develop of web-based database and spatial information system on Integrated Lake Ecosystem Sustainable Management.	-	-	60 000	-	-	-	-	-	60 000	-	-	60 000	Ministry of Environment & Forestry
	Consolidate the baseline survey reports of GEF8 LAKES	-	-	-	-	-	-	-	-	-	10 000	-	10 000	Ministry of Environment & Forestry
	Monitoring of GHG emission reduction and biodiversity	-	-	-	-	-	-	-	-	-	15 000	-	15 000	Ministry of Environment & Forestry
	Guideline for the establishment and/or strengthening the sub-national regulation (PERDA) to adjust to new government regulations on Integrated Lake Ecosystem sustainable management (supervision & consultation by MoEF)	36 000	-	-	-	-	-	-	-	36 000	-	-	36 000	Ministry of Environment & Forestry
	Knowledge Center (KC): Capacity Building and Improve Management (Operator/manager) in 3 Lake Knowledge Center (Rawa Pening, Batur & Limboto)	-	-	-	-	-	-	36 000	-	36 000	-	-	36 000	Ministry of Environment & Forestry
	Knowledge Center (KC): Education and ToT for the edu-tourism guide in 3 Lake	-	-	-	-	-	-	75 600	-	75	-	-	75 600	Ministry of Environ

	Knowledge Center (Rawa Pening, Batur & Limboto)									600				ment & Forestry
	Hire third party to conduct Audit Reports									-		100000	10 000	Ministry of Environment & Forestry
International Consultants	Mid-term Review (MTR)	-	-	-	-	-	-	-	-	-	15000	-	15 000	International Fund for Agricultural Development
	Terminal Evaluation (TE)	-	-	-	-	-	-	-	-	-	15000	-	15 000	International Fund for Agricultural Development
Local Consultants	MOEF encourages and provides supervision for the establishment and/or strengthening the sub-national regulation (PERDA) to adjust to new government regulations on Integrated Lake Ecosystem sustainable management (Support Expert: environment consultant, limnology consultant), 3 locations, 2 meetings each	36 000	-	-	-	-	-	-	-	36000	-	-	36 000	Ministry of Environment & Forestry
	MOEF provide supervision for the establishment and/or strengthen the village regulation (PERDES) on Integrated Lake Ecosystem sustainable management. (Provice Experts: environment consultant, limnology consultant**)**, 12 villages (average: 4 villages per location), each 3 times	36 000	-	-	-	-	-	-	-	36000	-	-	36 000	Ministry of Environment & Forestry
	Implementation of LAKES Information systems apply in the national level (including the operation, capacity building and transfer knowledge the system)	-	-	126 000	-	-	-	-	-	126000	-	-	126 000	Ministry of Environment & Forestry
	Agroforestry Livelihood (AL) specialist	-	-	-	-	90 000	-	-	-	90000	-	-	90 000	Ministry of Environment & Forestry
	Province Marketing & Business Development (MBD)	-	-	-	-	36 000	-	-	-	36000	-	-	36 000	Ministry of Environment &

														Forestry
	Gender Inclusion (GI) specialist	-	-	-	-	30 000	-	-	-	30 000	-	-	30 000	Ministry of Environment & Forestry
	Biodiversity (BD) Specialist	-	-	-	-	20 000	-	-	-	20 000	-	-	20 000	
	Legal Policy (PL) specialist	-	-	-	-	30 000	-	-	-	30 000	-	-	30 000	Ministry of Environment & Forestry
	Social Safeguard Expert (intermittent consultant)	-	-	-	-	-	-	-	-	-	-	-	-	Ministry of Environment & Forestry
	Gender & Social Inclusion Expert (intermittent consultant)	-	-	-	-	-	-	-	-	-	-	-	-	Ministry of Environment & Forestry
	Develop the M&E system	-	-	-	-	-	-	-	-	-	16 000	-	16 000	Ministry of Environment & Forestry
	Lake Technical Expert at province/district levels in 3 lakes (Rawa Pening, Batur, Rawa Pening)	-	-	-	180 000	-	-	-	-	180 000	-	-	180 000	Ministry of Environment & Forestry
	Village/Community Facilitator (VF)	-	-	-	216 000	-	-	-	-	216 000	-	-	216 000	Ministry of Environment & Forestry
	Lakes Knowledge Management Specialist (consultant)	-	-	-	-	-	-	72 000	-	72 000	-	-	72 000	Ministry of Environment & Forestry
	Monitoring & Evaluation Specialist (consultant)	-	-	-	-	-	-	-	-	-	60 000	-	60 000	Ministry of Environment & Forestry
	Develop the guideline for conducting Baseline data and information development (preparation work for	-	1 600	-	-	-	-	-	-	1 600	-	-	1 600	Ministry of Environment &

	contracting consultant), 2 days, twice													Forestry
	Others studies (based on the SM/MTR results)	-	-	-	-	-	-	-	-	-	10000	-	10000	Ministry of Environment & Forestry
Salary and benefits / Staff costs	Project Manager (National Team Leader) - 10% under component 1 & 90% under PMC	10000	-	-	-	-	-	-	-	10000	-	110000	120000	Ministry of Environment & Forestry
	Financial Management Specialist	-	-	-	-	-	-	-	-	-	-	66000	66000	Ministry of Environment & Forestry
	Procurement Specialist	-	-	-	-	-	-	-	-	-	-	54000	54000	Ministry of Environment & Forestry
	Admintration Officer	-	-	-	-	-	-	-	-	-	-	54000	54000	Ministry of Environment & Forestry
Trainings, Workshops, Meetings	Participatory establishment and strengthening the BUMDES or Koperasi Simpan-Pinjam; facilitated by VF, MBD, AL, and GI (FGD, 50 participants, on all 11 villages)	-	-	-	-	-	3850	-	-	3850	-	-	3850	Ministry of Environment & Forestry
	Participatory field-based trainings with farmers (female & male) to conduct gender-equitable capacity building on 1) climate-smart agroforestry, 2) vegetated strip terraces with leguminouse trees, and 3) intercropping / alleycropping practices **in Limboto**	-	-	-	-	-	16800	-	-	16800	-	-	16800	Ministry of Environment & Forestry
	Participatory field-based trainings with farmers (female & male) to conduct gender-equitable capacity building on 1) climate-smart agroforestry, 2) vegetated strip terraces with leguminouse trees, and 3) intercropping / alleycropping practices **in Batur**	-	-	-	-	-	6300	-	-	6300	-	-	6300	Ministry of Environment & Forestry
	Participatory field-based trainings with farmers (female & male) to conduct gender-equitable capacity building on 1) climate-smart agroforestry, 2) vegetated strip terraces with leguminouse trees, and 3)	-	-	-	-	-	3150	-	-	3150	-	-	3150	Ministry of Environment & Forestry

	intercropping / alleycropping practices **in Rawa Pening**													
	Participatory field-based training of tree nurseries in KBR (Community nursery)	-	-	-	-	-	57 750	-	-	57 750	-	-	57 750	Ministry of Environment & Forestry
	Participatory field-based training of agroforestry systems	-	-	-	-	-	23 100	-	-	23 100	-	-	23 100	Ministry of Environment & Forestry
	Participatory field-based training of forest-land restoration	-	-	-	-	-	11 550	-	-	11 550	-	-	11 550	Ministry of Environment & Forestry
	Participatory field-based training of NTFP management for beekeeping (Meliponiculture)	-	-	-	-	-	23 100	-	-	23 100	-	-	23 100	Ministry of Environment & Forestry
	Participatory gender-equitable capacity building on 1) the management and entrepreneurships of BUMDES and Koperasi Simpan-Pinjam and 2) improved access to innovative financing schemes for the members of BUMDES and Koperasi Simpan-Pinjam	-	-	-	-	-	7 700	-	-	7 700	-	-	7 700	Ministry of Environment & Forestry
	Participatory gender-equitable capacity building on the management of 1) communal / individual dairy farming-waste biogas and 2) domestic-waste 'bank sampah'	-	-	-	-	-	1 050	-	-	1 050	-	-	1 050	Ministry of Environment & Forestry
	Participatory awareness and campaigns on 1) the knowledge of local, healthy and nutritious food sources and 2) the improvement of nutritional intake for women and children in 11 selected villages;	-	-	-	-	-	7 700	-	-	7 700	-	-	7 700	Ministry of Environment & Forestry
	Serials meetings/FGD/Workshop to develop Government Regulation (GR)	30 000	-	-	-	-	-	-	-	30 000	-	-	30 000	Ministry of Environment & Forestry
	Finalization the Draft of Government Regulation (GR)	15 000	-	-	-	-	-	-	-	15 000	-	-	15 000	Ministry of Environment & Forestry
	Training supported by the Experts (National & Thematics) for legal drafting consultant,	9 000	-	-	-	-	-	-	-	9	-	-	9 000	Ministry of Environ

	environment consultant, limnology consultant, GHG consultant & Biodiversity									000				ment & Forestry
	Public Consultation & Expert Review	20 000	-	-	-	-	-	-	-	20000	-	-	20 000	Ministry of Environment & Forestry
	Launching & Dissemination of the Government Regulation (GR)	15 000	-	-	-	-	-	-	-	15000	-	-	15 000	Ministry of Environment & Forestry
	Processing Zero Draft Guidelines and/or technical guidance for the technical implementation of Government Regulation	20 000	-	-	-	-	-	-	-	20000	-	-	20 000	Ministry of Environment & Forestry
	FGD Finalizing Zero Draft to Final Draft Guidelines and/or technical guidance for the technical implementation of Government Regulation	20 000	-	-	-	-	-	-	-	20000	-	-	20 000	Ministry of Environment & Forestry
	Launching of Ministreial Regulation for the Technical Guidelines Guidelines and/or technical guidance for the technical implementation of Government Regulation	15 000	-	-	-	-	-	-	-	15000	-	-	15 000	Ministry of Environment & Forestry
	Workshop to conduct development of guideline on Villages regulation (PERDA)	36 000	-	-	-	-	-	-	-	36000	-	-	36 000	Ministry of Environment & Forestry
	Workshop to donuct the implementation of guideline on Villages regulation (PERDA)	36 000	-	-	-	-	-	-	-	36000	-	-	36 000	Ministry of Environment & Forestry
	FGD establish/enhance stakeholder communication platform through the development of a Sector Working Group on Integrated Lake Ecosystem Sustainable Management (SWG-ILEM), up to 50 participants	24 000	-	-	-	-	-	-	-	24000	-	-	24 000	Ministry of Environment & Forestry
	Workshop to support the national stakeholder platfrom (institution)	36 000	-	-	-	-	-	-	-	36000	-	-	36 000	Ministry of Environment & Forestry
	Awareness campaign on Integrated Lake Ecosystem sustainable management at national, sub-national, and villages.	30 000	-	-	-	-	-	-	-	30000	-	-	30 000	Ministry of Environment &

														Forestry
	Seminar/Workshop/FGD on Mainstreaming Integrated Lake Ecosystem sustainable management into the work of other ministries and agencies	90 000	-	-	-	-	-	-	-	90 000	-	-	90 000	Ministry of Environment & Forestry
	Seminar/Workshop, all stakeholders (3 locations, NGOs, etc), assumed 50 participants, no accommodation required	6 000	-	-	-	-	-	-	-	6 000	-	-	6 000	Ministry of Environment & Forestry
	Develop the guideline for conducting methodology, standard and its manual for lake ecosystem health assessment and monitoring. (preparation work for contracting consultant)	-	1 600	-	-	-	-	-	-	1 600	-	-	1 600	Ministry of Environment & Forestry
	Training/Capacity Building at national and sub-national	-	24 000	-	-	-	-	-	-	24 000	-	-	24 000	Ministry of Environment & Forestry
	Develop the guideline for conducting mapping/identification	-	-	1 600	-	-	-	-	-	1 600	-	-	1 600	Ministry of Environment & Forestry
	FGD to develop the guideline for conducting Development of design and masterplan for Database and Spatial Information system	-	-	1 600	-	-	-	-	-	1 600	-	-	1 600	Ministry of Environment & Forestry
	Workkshop to develop the guideline for conducting Development of web-based database and spatial information system on Integrated Lake Ecosystem Sustainable Management.	-	-	10 000	-	-	-	-	-	10 000	-	-	10 000	Ministry of Environment & Forestry
	Training for National Admin to implement the LAKES MIS	-	-	24 000	-	-	-	-	-	24 000	-	-	24 000	Ministry of Environment & Forestry
	Training for Authorize Person as Admin at Subnational to implement the LAKES MIS	-	-	24 000	-	-	-	-	-	24 000	-	-	24 000	Ministry of Environment & Forestry
	Workshop on the Development Annual Budget (AWPB) (12 villages, 3 provinces/district, and national) for 5 years of project implementation	-	-	50 000	-	-	-	-	-	50 000	-	-	50 000	Ministry of Environment & Forestry

	FGD the development, endorsement and implementation of stakeholders, working group, and critical issues identification of integrated lake ecosystem management plan facilitated; by CC and SE consultant at national level	-	-	-	18 000	-	-	-	-	18 000	-	-	18 000	Ministry of Environment & Forestry
	FGD on reviewing the current Spatial Plans of Gorontalo province, Bangli district, and Central Java province; facilitated by CC/SE at province/district levels	-	-	-	24 000	-	-	-	-	24 000	-	-	24 000	Ministry of Environment & Forestry
	Carrying out Strategic Environmental Assessment (KLHS) for the development or revision of ecologically based Spatial Plans which takes biodiversity, including on ecosystem management of Lakes Limboto, Batur, and Rawa Pening; facilitated by CC/SE at province/district levels	-	-	-	48 000	-	-	-	-	48 000	-	-	48 000	Ministry of Environment & Forestry
	FGD on IFAD social and environmental standards and project level safeguard instruments, including the Free, Prior, and Informed Consent (FPIC), Grievance Redress Mechanisms (GRM), enviornmental and social management plan, Gender Equality and Social Inclusion (GESI) action plan	-	-	-	7 700	-	-	-	-	7 700	-	-	7 700	Ministry of Environment & Forestry
	FGD on identification and participatory mapping	-	-	-	11 550	-	-	-	-	11 550	-	-	11 550	Ministry of Environment & Forestry
	FGD of the development of participatory management plan and map	-	-	-	11 550	-	-	-	-	11 550	-	-	11 550	Ministry of Environment & Forestry
	FGD on the development of gendered & social inclusion of sustainable land use systems and management practices in selected	-	-	-	11 550	-	-	-	-	11 550	-	-	11 550	Ministry of Environment & Forestry
	FGD on identification gendered and social inclusion of village-owned enterprises and cooperatives to support integrated businesses and financing plans	-	-	-	11 550	-	-	-	-	11 550	-	-	11 550	Ministry of Environment & Forestry
	FGD on gendered conservation-livelihoods	-	-	-	11 550	-	-	-	-	11	-	-	11 550	Ministry of Environ

	management plan with implementation guidelines									550				ment & Forestry
	FGD on strategic activities (such as participatoty mapping, management plans and map, and management bodies establishment at village level) from the integrated community lake management plans to be implemented in neighborhood villages.	-	-	-	4 200	-	-	-	-	4 200	-	-	4 200	Ministry of Environment & Forestry
	FGD on identification of the existing policies and regulations regarding the development, engagement and collaboration with Multi-stakeholders in developing and managing governance mechanisms of lake ecosystem management	-	-	-	-	18 000	-	-	-	18 000	-	-	18 000	Ministry of Environment & Forestry
	Drafting & FGD on the development, engagement and collaboration with multi-stakeholders in formulating, facilitating, making decision, and monitoring and evaluating the governance mechanisms of the lake ecosystem management conducted by management bodies (working groups)	-	-	-	-	18 000	-	-	-	18 000	-	-	18 000	Ministry of Environment & Forestry
	FGD (workshop) on heritage preservation strategies, stakeholder engagement, and management of cultural assets, in order to educate local communities and other stakeholders about the value systems, interests, and significance of protecting cultural heritage sites and assets	-	-	-	-	18 000	-	-	-	18 000	-	-	18 000	Ministry of Environment & Forestry
	FGD on identification of the existing policies and regulations regarding the development, engagement and collaboration with Multi-stakeholders in developing and managing governance mechanisms of lake ecosystem management; facilitated by CC, SE, AL, MBD, GI, and PL	-	-	-	-	11 550	-	-	-	11 550	-	-	11 550	Ministry of Environment & Forestry
	FGD on the development, engagement and collaboration with multi-stakeholders in formulating, facilitating, making decision, and monitoring and evaluating the governance mechanisms of the lake ecosystem management conducted by management bodies (working groups)	-	-	-	-	11 550	-	-	-	11 550	-	-	11 550	Ministry of Environment & Forestry

	FGD on identification of the existing policies, regarding the development and formulation of the innovative financing and/or partnership for environmental services	-	-	-	-	18 000	-	-	-	18 000	-	-	18 000	Ministry of Environment & Forestry
	FGD on development, engagement and collaboration with Multi-stakeholders in formulating and facilitating enabling conditions and processes of the innovative financing and/or partnership for environmental services implementation	-	-	-	-	18 000	-	-	-	18 000	-	-	18 000	Ministry of Environment & Forestry
	FGD on identification the existing policies, regarding the development and formulation of the resources provision by sub-national/local governments and non-governments to implement the integrated community lake ecosystem management plans	-	-	-	-	18 000	-	-	-	18 000	-	-	18 000	Ministry of Environment & Forestry
	FGD on development, engagement and collaboration with Multi-stakeholders in providing resources of sub-national/local governments and non-governments to implement the integrated community lake ecosystem management plans	-	-	-	-	18 000	-	-	-	18 000	-	-	18 000	Ministry of Environment & Forestry
	Training on SECAP with aim to increase capacity of project staff from Jakarta, Gorontalo province, Bangli district, and Central Java province	-	-	-	-	6 000	-	-	-	6 000	-	-	6 000	Ministry of Environment & Forestry
	Training on Environmental and Social monitoring and reporting with aim to build capacity for ongoing environmental monitoring and ensure compliance with IFAD's safeguards	-	-	-	-	4 000	-	-	-	4 000	-	-	4 000	Ministry of Environment & Forestry
	Organizing stakeholder's workshop/seminar and dissemination on the importance of the existence of lake's knowledge centers in three target areas	-	-	-	-	-	-	12 000	-	12 000	-	-	12 000	Ministry of Environment & Forestry
	FGD/workshop on identification of possible locations, buildings, and the decision on the future management and governance (private or public).	-	-	-	-	-	-	3 000	-	3 000	-	-	3 000	Ministry of Environment & Forestry
	FGD/Workshop on identification of stakeholder's commitment on the willingness to have and manage a KC in the designated lakes. (with more	-	-	-	-	-	-	3 000	-	3 000	-	-	3 000	Ministry of Environment & Forestry

	limited/selected participants at decision making levels)													
	Conducting FGD/meetings to obtain consent and commitment from local government and local stakeholders for the future lake center's management after the project ends: APBD, APBN, private/BUMD. Note for Rawapening can be associated with performance in Bukit Cinta)	-	-	-	-	-	-	3 000	-	3 000	-	-	3 000	Ministry of Environment & Forestry
	Establishment of written commitment in the forms of decree, plans or other written policies (including if from the government, inclusion in the local budget)	-	-	-	-	-	-	3 000	-	3 000	-	-	3 000	Ministry of Environment & Forestry
	Identification of private (for profit) organizations for the management and operationalization of Knowledge Center (KC)	-	-	-	-	-	-	3 000	-	3 000	-	-	3 000	Ministry of Environment & Forestry
	Serial FGDs/meetings to identify the needs concerning types of centers, knowledge materials produced and types of display and the arrangement of the surroundings (including gardens and public facilities)	-	-	-	-	-	-	6 000	-	6 000	-	-	6 000	Ministry of Environment & Forestry
	ToR development on the KC design. The KC is not only building and its display, but also the surrounding landscaping	-	-	-	-	-	-	3 000	-	3 000	-	-	3 000	Ministry of Environment & Forestry
	Establishment of legal basis for the business entity to run the KC	-	-	-	-	-	-	3 000	-	3 000	-	-	3 000	Ministry of Environment & Forestry
	Handing over/business entity involvement process in the project to business entiry	-	-	-	-	-	-	10 800	-	10 800	-	-	10 800	Ministry of Environment & Forestry
	Launching business entiry and Knowledge Center (KC)	-	-	-	-	-	-	4 500	-	4 500	-	-	4 500	Ministry of Environment & Forestry
	Dissemination and training workshops	-	-	-	-	-	-	3 000	-	3 000	-	-	3 000	Ministry of Environment & Forestry

	Review, public consultation and finalization of the KM Plan for each lake	-	-	-	-	-	-	7 500	-	7 500	-	-	7 500	Ministry of Environment & Forestry
	Dissemination of the KM Plan for each lake	-	-	-	-	-	-	1 500	-	1 500	-	-	1 500	Ministry of Environment & Forestry
	Organizing national level capacity building/workshop/trainings/seminar/symposium	-	-	-	-	-	-	-	63 000	63 000	-	-	63 000	Ministry of Environment & Forestry
	Organizing international level capacity building/workshop/trainings/seminar/symposium	-	-	-	-	-	-	-	15 000	15 000	-	-	15 000	Ministry of Environment & Forestry
	Developing international network. This will be inline with MIS development of Component 1 and 3	-	-	-	-	-	-	-	7 525	7 525	-	-	7 525	Ministry of Environment & Forestry
	Inception Workshop GEF8 LAKES	-	-	-	-	-	-	-	-	-	15 000	-	15 000	Ministry of Environment & Forestry
	Project Inception Report GEF8 LAKES	-	-	-	-	-	-	-	-	-	2 000	-	2 000	Ministry of Environment & Forestry
	Project Implementation Report LAKES	-	-	-	-	-	-	-	-	-	6 000	-	6 000	Ministry of Environment & Forestry
	Closing Project Workshop	-	-	-	-	-	-	-	-	-	10 000	-	10 000	Ministry of Environment & Forestry
	FGD for the draft design concept M&E	-	-	-	-	-	-	-	-	-	6 000	-	6 000	Ministry of Environment & Forestry
	Traning the M&E system in National	-	-	-	-	-	-	-	-	-	5 000	-	5 000	Ministry of Environment &

														Forestry
	Training the M&E to sub-national	-	-	-	-	-	-	-	-	-	5000	-	5000	Ministry of Environment & Forestry
	Project Steering Commitee meetings (Bi annualy)	-	-	-	-	-	-	-	-	-	-	5000	5000	Ministry of Environment & Forestry
	Terminal Evaluation	-	-	-	-	-	-	-	-	-	-	2378	2378	Ministry of Environment & Forestry
Travel	Participate on the national level knowledge sharing (flight, hotel, perdiem/OPE, etc)	-	-	-	-	-	-	-	30000	30000	-	-	30000	Ministry of Environment & Forestry
	Participate on the international/regional events or knowledge sharing (Flight & Visa)	-	-	-	-	-	-	-	15000	15000	-	-	15000	Ministry of Environment & Forestry
	Participate on the international/regional events or knowledge sharing (Hotel/accomodation)	-	-	-	-	-	-	-	7500	7500	-	-	7500	Ministry of Environment & Forestry
	Participate on the international/regional events or knowledge sharing (Perdiem & local transport)	-	-	-	-	-	-	-	7500	7500	-	-	7500	Ministry of Environment & Forestry
	Field travel (PMU)	-	-	-	-	-	-	-	-	-	-	12000	12000	Ministry of Environment & Forestry
Office Supplies	Office furniture, IT equipments	-	-	-	-	-	-	18000	-	18000	-	-	18000	Ministry of Environment & Forestry
	IT Equipment for hardware and software (MIS)	-	-	-	-	-	-	-	36000	36000	-	-	36000	Ministry of Environment & Forestry

	Office expendables	-	-	-	-	-	-	-	-	-	-	150000	15 000	Ministry of Environment & Forestry
Other Operating Costs	Office operation/maintenance	-	-	-	-	-	-	-	-	-	-	50000	5 000	Ministry of Environment & Forestry
	Knowledge Center (KC): capacity improvement for the safeguarding and security of knowledge center (KC)	-	-	-	-	-	-	50 400	-	50 400	-	-	50 400	Ministry of Environment & Forestry
	Knowledge Center (KC): regular maintenance complies with the government procedures (clean/health/book keeping)	-	-	-	-	-	-	25 200	-	25 200	-	-	25 200	Ministry of Environment & Forestry
Grand Total		**896 000**	**187 200**	**443 200**	**597 850**	**377 100**	**2 564 505**	**1 229 178**	**262 525**	**6 557 558**	**210 000**	**338378**	**7 105 936**	

Please explain any aspects of the budget as needed here

ANNEX I: RESPONSES TO PROJECT REVIEWS

From GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF.

Comment by Eli Binder, Advisor to the U.S. GEF Council Member, Office of Climate and Environment International Affairs, U.S. Department of the Treasury, UNITED STATES, Council, made on 2/9/2024:

"All biodiversity is important for nature conservation. There is not an internationally recognized definition for megadiversity and thus it should not be included as a rational for receiving GEF funding".

Agency response:

References to megadiverse countries have been removed in the following two locations of the CER: the Project Rationale section and in the Sustainability Considerations section.