



**GREEN
CLIMATE
FUND**

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Provisional agenda item 10

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5 October 2026

Consideration of funding proposals – Addendum X

Funding proposal package for FP317

Summary

This addendum contains the following seven parts:

- a) A funding proposal titled "Blue Halo S – Blue Ecosystem Adaptation Mechanism (BEAM)";
- b) No-objection letter issued by the national designated authority(ies) or focal point(s);
- c) Environmental and social report(s) disclosure;
- d) Secretariat's assessment;
- e) Independent Technical Advisory Panel's assessment;
- f) Response from the accredited entity to the independent Technical Advisory Panel's assessment; and
- g) Gender documentation.

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The documents are presented as submitted by the Accredited Entity.

Funding Proposal

Project/programme title: Blue Halo S – Blue Ecosystem Adaptation Mechanism (BEAM)

Country: Indonesia

Accredited Entity: Conservation International Foundation (CI)

Date of first submission: [2024.07.09]

Date of current submission 2026.09.03

Version number V.11



Section A	PROJECT / PROGRAMME SUMMARY
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Note to Accredited Entities on the use of the funding proposal template

- Accredited Entities should provide summary information in the proposal with cross-reference to annexes such as feasibility studies, gender action plan, term sheet, etc.
- Accredited Entities should ensure that annexes provided are consistent with the details provided in the funding proposal. Updates to the funding proposal and/or annexes must be reflected in all relevant documents.
- The total number of pages for the funding proposal (excluding annexes) **should not exceed 60**. Proposals exceeding the prescribed length will not be assessed within the usual service standard time.
- The recommended font is Arial, size 11.
- Under the GCF Information Disclosure Policy, project and programme funding proposals will be disclosed on the GCF website, simultaneous with the submission to the Board, subject to the redaction of any information that may not be disclosed pursuant to the IDP. Accredited Entities are asked to fill out information on disclosure in section G.4.

Please submit the completed proposal to:

fundingproposal@gcfund.org

Please use the following name convention for the file name:

“FP-[Accredited Entity Short Name]-[Country/Region]-[YYYY/MM/DD]”



AE	Accredited Entity
AMA	Accredited Master Agreement
ARA	Adaptation Result Area
Bappeda	Regional Planning Development Agency
Bappenas	The Ministry of National Development Planning
BEAM	Blue Ecosystem Adaptation Mechanism
CI	Conservation International
CSO	Civil Society Organization
DKP	Regional Marine and Fisheries Agency
EE	Executing Entity
ENDC	Enhanced Nationally Determined Contributions
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standards
EVIKA	Evaluation of Conservation Area Management Effectiveness
FMA	Fisheries Management Area
GC	Grants Committee
GCF	Green Climate Fund
GESI	Gender Equality and Social Inclusion
GHG	Greenhouse Gas
Gol	Government of Indonesia
IDP	Information Disclosure Policy
IDR	Indonesian Rupiah
IP	Indigenous Peoples
IRW	Investment Readiness Window
KI	Konservasi Indonesia
M&E	Monitoring and Evaluation
MMAF	Ministry of Marine Affairs and Fisheries
MPA	Marine Protected Area
MRA	Mitigation result area
MSME	Micro, Small and Medium-sized Enterprises
NDA	National Designated Authority
NDC	Nationally Determined Contribution
NGO	Non-government Organization
PMU	Project Management Unit
PSC	Project Steering Committee
RPJMN	Mid-Term National Development Plan
SDGs	Sustainable Development Goals
SME	Small and Medium-sized Enterprises
SSP	Shared Socio-economic Pathways
TC	Technical Committee

SECTION A: PROJECT/PROGRAM SUMMARY			
A.1. Project or program	Project	A.2. Public or private sector	Public
A.3. Request for proposals (RFP)	<u>Not applicable</u>		
A.4. Result area(s)	Check the applicable <u>GCF result area(s)</u> that the <u>overall</u> proposed project/program targets below. For each checked result area(s), indicate the estimated percentage of GCF and Co-financers' contribution devoted to it. The total of the percentages when summed should be 100% for GCF and Co-financers' contribution respectively.		
	All estimates are indicative, pending budget review and finalization		GCF contribution Co-financer s' contribution¹
	Mitigation total		
	☒ Energy generation and access		5 %
	☐ Low-emission transport		
	☐ Buildings, cities, industries and appliances		
	☒ Forestry and land use		10 % 8%
	Adaptation total		
	☒ Most vulnerable people and communities		45 % 43%
	☒ Health and well-being, and food and water security		20 % 40%
☐ Infrastructure and built environment			
☒ Ecosystems and ecosystem services		20 % 9%	
A.5. Expected mitigation outcome (Core indicator 1: Greenhouse gas (GHG) emissions reduced, avoided or removed / sequestered)	483,322 tCO ₂ e (6 years) 1,298,901 tCO ₂ e (lifetime)	A.6. Expected adaptation outcome (Core indicator 2: direct and indirect beneficiaries reached)	Indicate total number of direct and indirect beneficiaries Direct beneficiaries: 355,800 Male: 177,900 Female: 177,900 Indirect beneficiaries: 1,168,548 (6 years) 10,737,504 (lifetime)
A.7. Total financing (GCF + co-finance)	61.74 million USD	A.9. Project size	Medium (Upto USD 250 million)
A.8. Total GCF funding requested	25.49 million USD		
A.10. Financial instrument(s) requested for the GCF funding	☒ Grant <u>USD 25.49 million</u>		
A.11. Implementation period	6 years	A.12. Total lifespan	20 years

¹ Co-financer's contribution means the financial resources required, whether public finance or private finance, in addition to the GCF contribution (i.e. GCF financial resources requested by the AE) to implement the project or program described in the funding proposal.

A.13. Expected date of AE internal approval	June 17, 2026	A.14. Environment and Social Standards (ESS) category	B
A.15. Has this FP been submitted as a CN before?	Yes ☒ No ☐	A.16. Has Readiness or Project Preparation Facility (PPF) support been used to prepare this FP?	Yes ☒ No ☐
A.17. Is this FP included in the entity work program?	Yes ☒ No ☐	A.18. Is this FP included in the country program?	Yes ☒ No ☐
A.19. Complementarity and coherence	Does the project/programme complement other climate finance funding (e.g. GEF, AF, CIF, etc.)? If yes, please elaborate in section B.1. Yes ☒ No ☐		
A.20. Executing Entity information	Yayasan Konservasi Cakrawala Indonesia ("Konservasi Indonesia" or "KI"), a foundation registered in Indonesia.		
A.21. Executive summary (max. 750 words, approximately 1.5 pages)			
1. The Blue Halo S – Blue Ecosystem Adaptation Mechanism (BEAM) Project will support the Government of Indonesia's (Gol) goal of transforming its marine and coastal economy to respond to the impacts of climate change, as identified by local communities and national stakeholders, while driving sustainable growth and development. This blue economy transition, detailed in Indonesia's national development plans, prioritizes support for Marine Protected Areas (MPAs); increased financing for community-based investments to improve fish catch value; enhancing and diversifying the livelihoods of coastal communities; and strengthening the climate resilience of people and the ecosystems on which they depend. 2. BEAM (the "Project") will support ongoing Gol interventions by addressing long-term financing gaps to increase the sustainable use of marine resources to achieve inclusive and sustainable economic growth and ecosystem conservation. The Project employs the 'protection–production' model which recognizes the critical importance and interlinkage between protecting key ecosystems threatened by climate change and supporting sustainable economic activities that support Indonesia's vulnerable coastal populations, incentivizing further protection. This creates a virtuous impact cycle to create a paradigm shift to a climate-responsive blue economy. 3. Climate change - including rising sea levels, increasing sea surface temperatures, and more intense storm events - is one of the main drivers of the decline in extent and quality of marine ecosystems in Indonesia. These ecosystems include the mangroves, seagrasses, and coral reefs that many Indonesians rely upon for livelihoods and food security. Climate change impacts are further exacerbated by under-resourced coastal and fisheries management and inadequate regulatory systems. Current systems must be adapted to respond to climate change and create a new paradigm that enhances coastal protection, inclusive economic activity, and improved marine biodiversity. 4. The Project will be implemented in Fisheries Management Area (<i>Wilayah Pengelolaan Perikanan</i> (WPP)) 572, an extensive coastal and marine region covering 94.3 million hectares adjacent to six provinces along the western coast of Sumatra Island - Aceh, North Sumatra, West Sumatra, Bengkulu, Lampung, and Banten in Java, with a total population of approximately 50 million. This region was selected by the Gol for this Project, as it is one of the most climate-vulnerable areas in Indonesia, is one of the country's most important fisheries, harbors biodiverse ecosystems, and is among the least-funded regions of the country. The Project's interventions in WPP572 are designed to facilitate replication and scaling across the Indonesian archipelago through demonstration of the economic and environmental impacts that can be achieved through deployment of an integrated model of protection and production at scale. 5. The Project is structured around two complementary Components that create synergies across their Activities. Component 1 focuses on creating the enabling conditions for the Gol's regulatory and policy transition to a sustainable blue economy. Component 2 deploys an on-granting mechanism to support Locally Led Climate Action (LLCA) for mitigation and adaptation interventions that utilize traditional and local knowledge, designed and implemented directly by beneficiary populations. Component 2 also include investment readiness activities to stimulate microfinance lending and produce			

action-oriented knowledge products to support the growth of a climate-responsive 'blue economy'. The effectiveness of the direct climate interventions under Component 2 will be increased by the improved enabling environment established under Component 1. This approach is informed by detailed stakeholder engagement, guiding the development of overall strategy to address identified gaps in previous efforts to catalyze Indonesia's blue economy. Given limited government and private sector resources in WPP 572 and the vulnerability of its populations, GCF grant support to both Components is critical to catalyze sustainable climate interventions and build the capacities of government agencies, local organizations, and the private sector to foster a climate responsive blue economy.

6. Under Component 1 of the Project, Konservasi Indonesia (KI) as Executing Entity will provide direct support and technical assistance to national and sub-national government institutions to facilitate the improvement of protection and management of MPAs, enhancement of fisheries and ecosystem data and monitoring, and reforms to relevant policies to achieve inclusive, financially sustainable, and operationally effective sustainable blue economic development without sacrificing national conservation goals. In particular, the Project will support the enhancement of the Ministry of Maritime Affairs and Fisheries (MMAF)'s Public Private Partnership (PPP) program for MPA and coastal management, allowing for new sustainable financial flows into conservation and marine management. This intervention seeks to address current regulatory, technical, and financial barriers to the blue economy transition, resulting in 114,240 direct beneficiaries in WPP 572.
7. Component 2 will provide targeted support to local communities, CSOs, and institutions through two complementary on-granting windows for locally designed Adaptation and Mitigation interventions, along with Investment Readiness interventions to provide support to government microfinance institutions to increase lending to and growth of sustainable blue economy MSMEs in WPP572. The grant windows, their sub-windows, and the eligibility criteria to access funding were designed through participatory consultation with a variety of stakeholders, partners, and beneficiaries in WPP572, including vulnerable groups and their representatives. These activities will provide financial resources and technical assistance to support Locally Led Adaptation activities (resulting in 241,560 direct beneficiaries); fund projects that reduce GHG emissions (resulting in ~1.3M tCO₂e reduced GHG emissions over the Project lifespan – almost half of the projected BAU blue carbon emissions from WPP572); and support the long term growth of the blue economy by increasing access to existing concessional finance and the production and dissemination of knowledge products that fill key needs for businesses and investors. Both Component 1 and 2 will result in more than 10 million indirect beneficiaries (fishers, mariculture workers, and marine ecotourism employees) over the project lifespan across Indonesia.
8. BEAM aims to select the most impactful grant investments, encourage context-specific innovations that utilize traditional and local knowledge, and maximize achievement of its climate adaptation, mitigation, and investment readiness objectives. Across all Project interventions, emphasis is placed on providing support to vulnerable groups as identified in the GEDSI analyses.
9. Addressing the significant threats from climate change to Indonesia's coastal economy, vulnerable populations, and ecosystems in this Project will require close engagement and coordination with the Government of Indonesia. Project governance includes government representation at all levels of BEAM's strategy and implementation to ensure alignment of Project interventions with government priorities and complementarity with existing efforts to maximize effectiveness and sustainability of Project Outcomes. This country-led approach will contribute significantly to the targeted scaling and replication of the Blue Halo S model across Indonesia.

A. PROJECT/PROGRAMME INFORMATION

B.1. Climate context (max. 1000 words, approximately 2 pages)

Indonesia's climate context

10. Indonesia is one of the world's most biodiverse countries and hosts extensive marine ecosystems that are crucial for carbon storage and climate resilience. These ecosystems, including mangroves, seagrasses, and coral reefs, provide significant income to coastal communities through fishing and tourism, and play a vital role in Indonesia's climate mitigation targets and adaptation strategies, as outlined in its Enhanced Nationally Determined Contribution (NDC). Climate-driven natural disasters and changes in climatic variables (sea level rise, changing rainfall patterns, and sea surface temperature increases) are the primary drivers of non-anthropogenic coastal ecosystem degradation and climate vulnerability of the coastal population^{2,3}. Indonesia ranks among the top third of countries most vulnerable to climate-driven disasters⁴, and hosts the 5th largest coastal population in the world (49 million people), who are particularly at-risk to climate related disasters.⁵ The GoI has identified the country's marine and coastal sectors as the most vulnerable to climate change impacts, projecting economic losses equivalent to IDR 81.82 trillion (~USD 5.2 billion) in 2024.⁶
11. Climate change is driving a reduction in fish stocks in Indonesia primarily through degradation of the coastal ecosystems on which fish depend for breeding and feeding, including mangroves, reefs, and seagrasses⁷. Climate impacts, combined with ineffective sustainable fisheries management are threatening a key source of income for coastal communities and the food security of the nation, with 50% of total animal protein consumed in Indonesia derived from fish products.^{8,9} The Blue Nature Alliance found that existing fisheries protection and investments in sustainable fisheries management will result in significant fish stock declines between 2020 and 2050 and that additional establishment of effective Marine Protected Areas (MPAs) could boost fishing industry revenues by IDR 126 trillion (31% increase against BAU) by 2050.¹⁰ There is also evidence that regulatory and technical reinforcement of MPAs in Fisheries Management Areas (WPPs) 714 and 715 resulted in greater fish stock volume and fish species biodiversity.¹¹
12. While Indonesia's blue carbon potential is high, climate change is contributing to the degradation of coastal and marine ecosystems, which reduces carbon sequestration potential.¹² The impacts of climate change are also hindering Indonesia's ability to develop blue economic sectors including sustainable fisheries and tourism.^{13, 14} The limited capacity of coastal populations to adapt to climate change is compounded by non-climate threats to ecosystems and the fisheries sector, and these communities' higher poverty rates than the national average.

Target Geography: Fisheries Management Area (WPP) 572

13. Fisheries Management Area (*Wilayah Pengelolaan Perikanan*) WPP 572 was identified as a government priority area for GCF support due to its low protection and investment status. This region offers ideal conditions for the scaling of the protection-production model in Indonesia to serve as a national blueprint for effective ecosystem and fisheries management. WPP 572 is an expansive marine zone that harbors one of the most important fisheries for the country¹⁵, as well as rich, biodiverse marine ecosystems (mangroves, seagrass, and coral reefs) concentrated along vulnerable islands off the coast

² Arifanti, V., B. (2020). Mangrove management and climate change: a review in Indonesia. IOP Conf. Ser.: Earth Environ. Sci. 487 012022. doi: 10.1088/1755-1315/487/1/012022

³ Ward, R. D., Friess, D. A., Day, R. H., and MacKenzie, R. A. (2016) Impacts of climate change on mangrove ecosystems: a region-by-region overview. Ecosystem Health and Sustainability 2(4): e01211. doi: 10.1002/ehs2.1211

⁴ INFORM is a multi-stakeholder forum for developing shared, quantitative analysis relevant to humanitarian crises and disasters led by the Joint Research Center of European Commission. The INFORM Climate Change Risk Index is among the four INFORM platforms that focuses on providing quantified estimates of the impacts of climate change on the future risk of humanitarian crises and disasters.

⁵ Climate Risk Profile: Indonesia (2021): The World Bank Group and Asian Development Bank, p. 15

⁶ Ministry of National Development Planning/Bappenas. (2021a). Climate Resilience Development Policy 2020-20245 – Executive Summary. https://lidi-indonesia.id/wp-content/uploads/2021/11/0_Executive-Summary.pdf

⁷ Kaczan, D., Nurhabni, F., Cheung, W., Frölicher, T., Kuswardani, A., Lam, V., Muawanah, U., Puspasari, R., Reygondeau, G., Sumaila, U. and Teh, L. (2023). Hot Water Rising: The Impact of Climate Change on Indonesia's Fisheries and Coastal Communities. The World Bank, Washington, D.C.

⁸ Blue Nature Alliance (2023) Indonesia '30x30' Marine Protected Areas fisheries cost benefit analysis. Presentation

⁹ Napitupulu, L. and Tanaya, S. (2022) 3 Ways How Fisheries are Essential for a Resilient Food System during Pandemic and Beyond. WRI. <https://wri-indonesia.org/en/insights/3-ways-how-fisheries-are-essential-resilient-food-system-during-pandemic-and-beyond#:~:text=Despite%20the%20fact%20that%20fish,to%20the%20consumption%20of%20carbohydrates.>

¹⁰ Blue Nature Alliance (2023) Indonesia '30x30' Marine Protected Areas fisheries cost benefit analysis. Presentation

¹¹ Wibowo, A., V Limmon, G., Nikijuluw, V. And Wibisono, E. (2023). Konektivitas Ekologis antara Kawasan Konservasi Perairan dengan Sumber Daya Perikanan di WPPNRI 714 dan 715: Hasil Survei Perintisan. https://konservasi-id.org/wp-content/uploads/2025/03/BlueHaloS714715SurveyPolicyBrief_A4_V03_MI.pdf

¹² Lovelock, C. E., & Reef, R. (2020). Variable impacts of climate change on blue carbon. One Earth, 3(2), 195-211.

¹³ Sari, D. A. A., & Muslimah, S. (2020). Blue economy policy for sustainable fisheries in Indonesia. In IOP Conference Series: Earth and Environmental Science (Vol. 423, No. 1, p. 012051). IOP Publishing.

¹⁴ Supriyanto, E. E. (2022). Blue tourism: Treating marine ecosystems and increasing the potential of maritime tourism in Indonesia. Jurnal Kepariwisataaan Indonesia: Jurnal Penelitian Dan Pengembangan Kepariwisataaan Indonesia, 16(2), 138-148.

¹⁵ WRI Indonesia (2022) Trends In Marine Resources And Fisheries Management In Indonesia. https://wri-indonesia.org/sites/default/files/2022-12/Marine%20Trends%20Report_WRI%20format_v14.pdf

of western Sumatra. WPP 572 encompasses 94.3M ha adjacent to six provinces on the western coast of Sumatra: Aceh, North Sumatra, West Sumatra, Bengkulu, Lampung, and Banten.

Map image removed

Figure 1: Map of WPP 572

14. WPP 572 is one of the most important fishing zones in Indonesia, with the largest concentrations of high volume catch areas. WPP 572 is also highly exposed to climate change induced losses in fish catch. Based on a World Bank report, by 2050 the decrease of economic returns to fisheries are expected to be worse for small-scale fisheries (17-19 percent reductions under RCP 2.6) than for industrial fisheries (13-14 percent), mostly because species caught by artisanal fishers are more vulnerable than those caught by the larger vessels.¹⁶ Climate impacts are compounded by management practices. WPP 572 has one of Indonesia's highest overexploitation rates, with over half of key species caught above replacement rate.¹⁷ WPP 572 is also an important tuna fishery, and as a result of increasing ocean temperatures, overfishing, and destructive fishing practices, tuna populations have fallen since 2014.¹⁸
 15. Climate change significantly impacts fisheries within WPP 572 by altering marine ecosystems and reducing fish populations. Current and projected climate change in WPP 572 include increasing sea surface temperatures¹⁹ (which displace fish populations)²⁰, ocean acidification (degrading corals and seagrasses)^{21, 22}, sea level rise (degrading breeding grounds), and more variable precipitation (increasing sedimentation and waste deposition from land) (see **Annex 2, Sections 2 and 3**). These changes disrupt fish breeding and migration patterns, leading to lower catches and heightened competition among fishers. Warmer waters resulting from climate change are altering the distribution of fish species within WPP 572, pushing them to deeper or cooler areas and impacting their reproductive success²¹. The Indian Ocean region of Indonesia, which includes WPP 572, is projected to face the most severe economic impacts from climate change in the country²³. Under a low emissions scenario (SSP1-2.6), small-scale fisheries in this region could see economic returns decline by up to 17.2%, and as much as 57.7% under continued overfishing. Under a high emissions scenario (SSP5-8.5), losses escalate further, reaching up to 63.1%. However, modeling suggests that this dramatic decline can be mitigated by effective fisheries management, reducing the impact under SSP5 to 22.5%. Small scale fisheries productivity disproportionately affects coastal communities whose livelihoods and food security rely heavily on the sector, making implementation of effective management crucial.
- Key Features of WPP572:**
16. Approximately 14 million people live in low-lying coastal areas or on small islands of WPP 572, from Aceh in the north to Banten in the south. These coastal communities in the provinces adjacent to WPP 572 are more exposed to climate change impacts than inland populations.²⁴ These climate impacts include rising sea levels, inundating coastal regions and displacing people; more severe precipitation events leading to increased water runoff causing sedimentation, increased coastal waste deposition, and damage to crops and ecosystems; and increases in sea surface temperature (SST) which affects the quantity and distribution of fish and other seafood, thereby impacting both the food security and livelihoods of many communities. Compounding this vulnerability, ~4.7 million individuals live below the poverty line across the six provinces²⁵

¹⁶ Kaczan, D, Nurhabni, F, Cheung, W, Frölicher, T, Kuswardani, A, Lam, V, Muawanah, U, Puspasari, R, Reygondeau, G, Sumaila, U, and Teh, L (2023). Hot Water Rising: The Impact of Climate Change on Indonesia's Fisheries and Coastal Communities, The World Bank

¹⁷ MMAF Decree (Keputusan Menteri Kelautan dan Perikanan) No. 19/2022 on estimation of potential fish resources, allowable fish catch, and utilization level of fish resources in the fisheries management area of the Republic of Indonesia.

¹⁸ Suyasa, N, Rahardjo, P, Putri, D, Widagdo, A., (2020), Tuna fisheries in fisheries management area Republic of Indonesia 572 IOP Conference Series: Earth and Environmental Science

¹⁹ Guest, J. R., Baird, A. H., Maynard, J. A., Muttaqin, E., Edwards, A. J., Campbell, S. J., ... & Chou, L. M. (2012). Contrasting patterns of coral bleaching susceptibility in 2010 suggest an adaptive response to thermal stress. *PloS one*, 7(3), e33353.

²⁰ Gamito, R., Costa, M.J. & Cabral, H.N. Fisheries in a warming ocean: trends in fish catches in the large marine ecosystems of the world. *Reg Environ Change* 15, 57–65 (2015). <https://doi.org/10.1007/s10113-014-0615-y>

²¹ Lam, Vicky WY, Suchana Chavanich, Salpie Djoundourian, Sam Dupont, Françoise Gaill, Guillaume Holzer, Kirsten Isensee et al. "Dealing with the effects of ocean acidification on coral reefs in the Indian Ocean and Asia." *Regional Studies in Marine Science* 28 (2019): 100560.

²² Listiawati, V., & Kurihara, H. (2021). Ocean warming and acidification modify top-down and bottom-up control in a tropical seagrass ecosystem. *Scientific Reports*, 11(1), 13605

²³ Kaczan, D, Nurhabni, F, Cheung, W, Frölicher, T, Kuswardani, A, Lam, V, Muawanah, U, Puspasari, R, Reygondeau, G, Sumaila, U, and Teh, L (2023). Hot Water Rising: The Impact of Climate Change on Indonesia's Fisheries and Coastal Communities, The World Bank

²⁴ Climateworks Centre's analysis, based on BPS (2020) number of household population for six provinces and 36 coastal regencies in WPP 572 (<https://www.bps.go.id/statictable/2012/04/19/1604/persentase-rumah-tangga-menurut-provinsi-daerah-tempat-tinggal-dan-jenis-kelamin-kepala-rumah-tangga-2009-2022.html>)

²⁵ Based on BPS (2020) number of poor population data for 36 regencies across six provinces in WPP 572 (<https://bps.go.id/indicator/23/185/1/jumlah-penduduk-miskin-ribu-jiwa-menurut-provinsi-dan-daerah.html>)

with Aceh, Bengkulu, and Lampung experiencing poverty rates of more than 12% (national average is ~9% as of 2023).²⁶ Despite the economic importance of these coastal provinces, WPP572 has historically been under-invested in, contributing to the explicit prioritization of WPP 572 by the government of Indonesia for this Project (See **Annex 2, Sections 1 and 3** for more information).

17. Though WPP 572 does not hold a large share of Indonesia's total mangroves (36,000 ha; about 1.15%; see **Annex 2, Section 2**)²⁷, these areas provide critical ecosystem services including coastal protection from flooding and serving as fish breeding grounds. Loss of mangrove ecosystems is driven by sea level rise (SLR) and sea-surface temperature (SST) increases, and are further compounded through anthropogenic pressures, such as mangrove-clearing for aquaculture production and timber.²⁸ Nearly 800,000 hectares of mangroves have been lost in Indonesia over the past 30 years (see **Annex 2, Section 2** for projected losses in WPP 572). Since mangrove ecosystems serve as the first line of defense against flooding for much of western Sumatra²⁹, further losses increase disaster risk for coastal communities.
18. Seagrass plays a key role in fisheries as a primary habitat for several fish species, and mitigates strong waves triggered by climate (storm) and non-climate (tsunami) events. Seagrass loss and associated blue carbon emissions in WPP 572 is attributed to ocean acidification and anthropogenic causes including increased sedimentation due to construction, filling or dredging; terrestrial agriculture, and aquaculture practices³⁰. Blue carbon emissions from seagrass loss in WPP 572 are approximately 60% higher than those from mangrove loss (see **Annex 22**). Projected loss of seagrass in WPP 572 is approximately 6,183ha by 2030 and 16,938ha by 2060.
19. WPP 572 hosts 17% of all coral reef ecosystems in Indonesia. While coral reef ecosystems are not carbon sinks themselves, they are carbon sequestration catalyzers and provide critical ecosystem services. Coral reefs serve as buffers by acting as wave-dissipating barriers, which reduces coastal inundation and sedimentation of seagrasses and other coastal ecosystems.³¹ Coral reefs are also critical breeding grounds and habitats for the fisheries food chain. In Indonesia the rate of coral loss is estimated to be as high as 6.8% (Eddy et al., 2021), meaning Indonesia's coral reefs might lose up to 265,000 ha annually - in WPP 572, up to 11,600 ha annually (see **Annex 2, Section 3**) - also negatively affecting Indonesia's tourism industry. Local drivers of coral degradation include climate change (such as increased sea surface temperatures, sedimentation from erosion caused by increased runoff from extreme precipitation, and ocean acidification), overfishing and destructive fishing, coastal development, watershed-based pollution, agricultural expansion, land conversion for aquaculture, and marine-based pollution and damage.
20. There are currently 550,000 hectares of MPAs within WPP 572³², with plans to expand by an additional 10-20% by 2045. To achieve this, Indonesia's Ministry of Maritime Affairs and Fisheries (MMAF) prepared spatial plans identifying potential conservation areas and expansion of existing ones.³³ This planning combines technical mapping and spatial modeling with stakeholder consultations. The process focuses on ensuring that provinces understand MPA benefits and address potential conflicts in resource allocation early to avoid future disputes. These MPAs aim to enhance fisheries productivity, protect biodiversity, and increase resilience to climate change. Improved MPA management has been shown to lead to spillover benefits in terms of increased fish stocks and fish size^{34,35} and therefore improved MPAs can provide benefits beyond their immediate vicinity and potentially beyond Indonesia in the case of pelagic species.

Climate change exposure: historical and future projections

21. The Climate Change Vulnerability Assessment (see **Annex 2, Section 3**) focuses on the most important climate change impacts on the ecosystems and populations in WPP 572: SLR, SST, and extreme precipitation events.³⁶

²⁶ BPS Statistics Indonesia - <https://www.bps.go.id/en/pressrelease/2023/07/17/2016/indonesia-poverty-profile-in-march-2023.html>

²⁷ Global Mangrove Watch

²⁸ Ilman, M., Dargusch, P., & Dart, P. (2016). A historical analysis of the drivers of loss and degradation of Indonesia's mangroves. *Land use policy*, 54, 448-459.

²⁹ Alongi, D. M. (2015). The impact of climate change on mangrove forests. *Current Climate Change Reports*, 1, 30-39.

³⁰ IPCC 2014

³¹ Guerra-Vargas, L., Gillis, L. and Mancera-Pineda, J. (2020) Stronger Together: Do Coral Reefs Enhance Seagrass Meadows "Blue Carbon" Potential? *Front. Mar. Sci.* 7:628. doi: 10.3389/fmars.2020.00628

³² MMAF. Sidako – Sistem Database Konservasi. Retrieved March 2025 from <https://sidako.kkp.go.id/sidako/sebaran-kawasan>.

³³ MMAF (2024). Perancangan Spasial bagi Perluasan Liputan Kawasan Konservasi untuk Mencapai Visi Kawasan Konservasi 30x45. Jakarta: Direktorat Jenderal Pengelolaan Kelautan dan Ruang Laut, Kementerian Kelautan dan Perikanan.

³⁴ Franceschini et al., 2024. A global test of MPA spillover benefits to recreational fisheries *Sci. Adv.* 10, eado9783 (2024)

³⁵ Cheung et al., 2024. Projecting contributions of marine protected areas to rebuild fish stocks under climate change. <https://doi.org/10.1038/s44183-024-00046-w>

³⁶ Hewitt, J., Ellis, J., & Thrush, S. (2016). Multiple stressors, nonlinear effects and the implications of climate change impacts on marine coastal ecosystems. *Global Change Biology*, 22. <https://doi.org/10.1111/gcb.13176>

Observed climate trend	SST anomalies >1°C more frequent (2011–2022).	Sea Level Rise (SLR) with higher rates in the north (0.43 cm/yr) than south (0.39 cm/yr).	Variable Rainfall / Extreme rainfall events, measured as number of days with rainfall of more than 50 mm (R50mm), is high with an average of 3.2 days (1991-2020). High precipitation events lead increased water run-off rates
Projected climate trends 2021–2060	Mean SST anomaly of 0.51 to 1.27 °C between 2021-2040 and 2041-2060 with deviation $\pm$ 0.39 °C 2021-2040 SSP 2-4.5: 30.37 °C SSP 3-7.0: 30.76 °C 2041-2060 SSP 2-4.5: 31.07 °C SSP 3-7.0: 31.46 °C	Mean sea level rise from 0.24 to 0.55 cm/yr (2021-2040); SSP 2-4.5: 0.12 m Mean sea level rise to 0.67 cm/yr and total increase of 20 cm (2041-2060). SSP 2-4.5: 0.20 m	Number of days with rainfall of more than 50 mm (R50mm) rising along the western coast of Sumatra and the southwestern part of WPP 572 (2021-2040) while noting provincial variability. Projections for increased water runoff for Sumatra ³⁷ : 2011-2041 SSP 2 – 4.5: +18% 2041-2070: SSP2 – 4.5: +29%
Ecosystem Impacts	More frequent and severe IOD events leading to coral bleaching.	Reduced mangrove photosynthesis and health decline; increased coastal flooding and coastal soil salinization, harming aquaculture and agriculture.	Increased deposition of waste (run off) in coastal areas. Increased sedimentation of coastal ecosystems
Population Impacts	Reduced fisheries productivity, leading to decreased livelihoods and reduced food security.	Reduced fisheries productivity (livelihoods / food security); coastal infrastructure damage; increased coastal flooding; reduced agricultural productivity (salinization) leading to reduced water and food security.	Increased risk of coastal flooding; reduced water quality; reduced food security (due to effects of waste and sedimentation on coastal ecosystems)

Table 1: Summary of the historical and projected climate impacts in WPP 572

Sea Surface Temperature (SST)

22. Historical: Sea-surface temperatures have varied considerably between 1991 and 2020. However, the frequency of temperature changes and the intensity of temperature fluctuations has increased relative to pre-1991 SST and indicate an upward trend in SST anomalies in WPP 572.

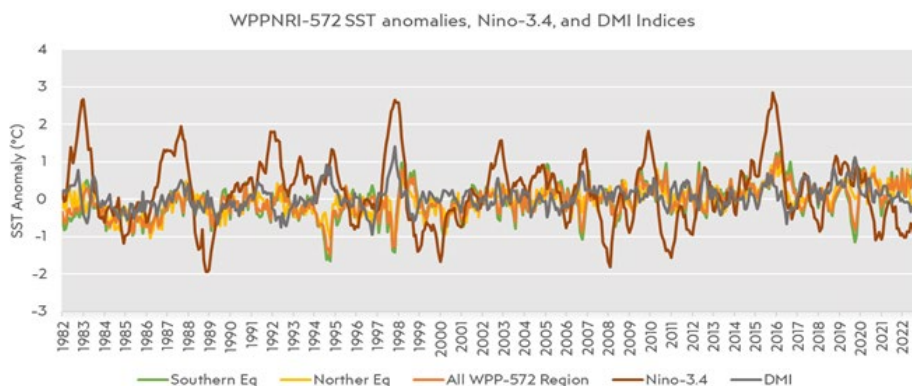


Figure 2: Sea surface temperature trends and anomaly in WPP 572. Coupled Model Intercomparison Project Phase 6 – CMIP6).

³⁷ SMHI, Climate Information, <https://climateinformation.org/>, last accessed: April 10, 2025.

23. **Projections:** SST in WPP 572 is projected to increase 0.51 °C between 2021-2040 to 1.27 °C between 2041-2060 $\pm$ 0.39 °C across three socioeconomic pathways (SSPs) against the 1995-2020 reference period (see Figure 3). This SST forecast aligns with the World Bank (2023) projection for the western Indonesian region.³⁸

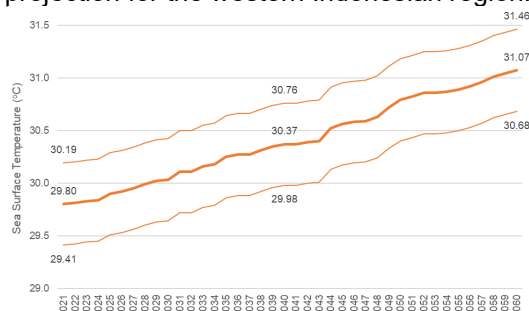


Figure 3: Projected annual mean sea surface temperature at WPP 572 region between 2021-2060 under three SSP scenarios against 1995-2020 reference period. Source: Coupled Model Intercomparison Project Phase 6 – CMIP6

24. **Impact:** Rising SST will increase the number and severity of coral bleaching events^{39,40}, reducing biodiversity and fisheries productivity⁴¹, reduce the wave buffering capacity of reef ecosystems, and will force fish populations to migrate to cooler (deeper) waters further from the coast⁴², reducing the ability of coastal communities to fish and maintain their livelihoods. Rising SST will also negatively impact the health of mangrove and seagrass ecosystems with consequent negative impacts on fisheries productivity and coastal protection.

Sea Level Rise (SLR)

25. **Historical:** An upward trend in annual Sea Level Rise (SLR) is observed in the historical data, as indicated in Fig. 4. In WPP 572, the northern area has a higher rate of SLR (0.43 cm/yr) than the southern area (0.39 cm/yr).

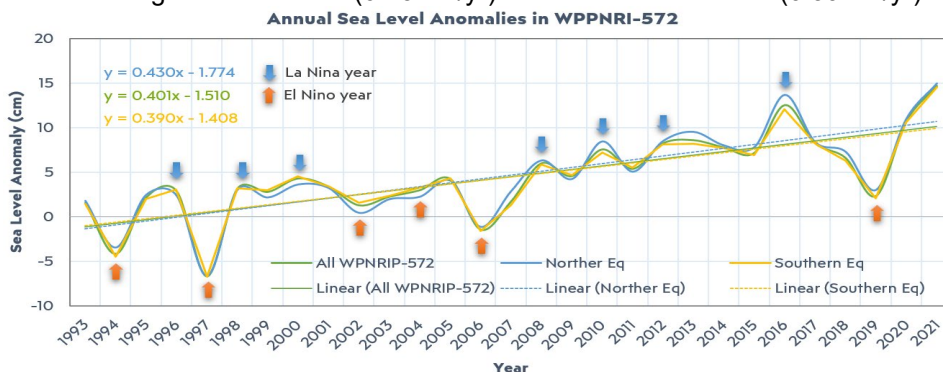


Figure 4: Annual variability and trends of sea level anomalies in WPP 572.

26. **Projections:** Projected mean sea level from a multi-model ensemble indicates a continued increase in sea level in WPP 572. The trend is expected to rise from 0.24 to 0.55 cm per year during the 2021–2040 period, and to 0.67 cm per year during the 2041–2050 period (Fig 5. See **Annex 2, Section 3**).

map image removed

Figure 5 Mean Sea Level for 2021-2040 (a) and 2041-2050 (b) at WPP 572 Region from CMIP6 Multi-Model Ensemble.

27. **Impact:** SLR will result in increased flooding, saline intrusion, erosion, and damage to infrastructure. Coastal ecosystems, particularly mangroves, are also affected by rising sea levels, leading to habitat loss, coral reef damage, and changes to the productivity of these ecosystems and resulting degradation of fisheries.

Variable Rainfall / Extreme Precipitation Events

³⁸ Kaczan, D., Nurhabni, F., Cheung, W., Frölicher, T., Kuswardani, A., Lam, V., Muawanah, U., Puspasari, R., Reygondeau, G., Sumaila, U., & Teh, L. (2023). *Hot Water Rising: The Impact of Climate Change on Indonesia's Fisheries and Coastal Communities*. The World Bank, Washington, D.C.

³⁹ Abram, Nerilie J., et al. (2003) "Coral Reef Death during the 1997 Indian Ocean Dipole Linked to Indonesian Wildfires." *Science*, 301-5635, pp. 952–55. JSTOR

⁴⁰ Ibid

⁴¹ Based on BPS 2019-2021 marine fishery data for six provinces in WPP 572.

⁴² Barange, M., Bahri, T., Beveridge, M., Cochran, K., Funge-Smith, S. & Poulain, F. (2018). Impacts of climate change on fisheries and aquaculture: Synthesis of current knowledge, adaptation, and mitigation options. FAO Technical Paper No. 627. <http://www.fao.org/3/i9705en/i9705en.pdf>

28. Historical: WPP 572 exhibits spatial variations in monthly rainfall across provinces from 1991 to 2020, with Aceh and West Sumatra provinces showing the highest increase in rainfall and extreme precipitation events (**Annex 2, Section 3**).
29. Projections: The spatial trends in WPP 572 indicate a noticeable decrease in the number of CDD (Consecutive Dry Days) in most parts of this region. Conversely, the number of CWD (Consecutive Wet Days) is increasing in many areas within WPP 572. Additionally, the frequency of heavy rainfall events (measured as R20mm and R50mm) is rising on the western coast of Sumatra and the southwestern part of WPP 572 (**Annex 2, Section 3**).
30. Impact: Extreme precipitation events contribute to climate risks as they create erosion in coastal areas and increase flooding and waste runoff, which contributes significantly to ocean pollution and sedimentation of ecosystems. Heavy rainfall also contributes to climate vulnerability by triggering flash floods and landslides, impacting coastal infrastructure, disrupting fishing activities, and degrading marine ecosystems. Prolonged dry periods during the dry season can lead to water shortages and the salinization of estuaries, negatively impacting aquacultural productivity. Models largely agree that water run-off will increase under all RCP/SSP scenarios in Sumatra⁴³, negatively impacting coastal ecosystems and increasing deposition of both terrestrial waste and sediment into coastal ecosystems.

Table 2: Summary of climate rationale framework

Other factors contributing to coastal community and ecosystem vulnerability

Socio-Economic Vulnerability

31. Coastal communities in WPP 572 are highly reliant on the blue economy, with approximately 450,000 individuals formally employed in the fisheries sector (noting that informal participation is significant).⁴⁴ Poverty is high⁴⁵ with three provinces in WPP 572 (Aceh, Bengkulu, and Lampung) experiencing poverty rates (~14%) which are higher than the national average (9.4%).⁴⁶ Small Island communities within WPP 572 also face limited economic opportunities due to restricted market access. Women, marginalized groups, and Indigenous populations face additional socio-economic vulnerabilities (see **Annex 2, Section 3**, and **Annexes 6, 7**, and **8** for more detailed information).

Earthquakes, Tsunamis and Volcanic Activity

32. Communities adjacent to WPP 572 face disaster risks from earthquakes and resulting tsunamis, due to low elevation coastal topography, high coastal population densities, and proximity to the Barisan Mountains which limits population mobility during tsunamis. The 2004 tsunami, caused by a 9.3 magnitude earthquake, destroyed 380,000 hectares of mangroves and extensive coral reef ecosystems, along with over 80,000 homes in Banda Aceh.

Marine resource management

33. The limited application of sustainable fisheries management plans, alongside destructive fishing practices and unsustainable aquaculture, contributes to ecosystem loss and threatens the long-term livelihoods of coastal communities in WPP 572. Without effective management, fisheries remain exposed to threats from overfishing. Field observations

⁴³ SMHI, Climate Information, <https://climateinformation.org/>, last accessed: April 10, 2025

⁴⁴ Based on data from National Statistical Agency (BPS, 2020) number of household population for six provinces and 36 coastal regencies in WPP 572.

⁴⁵ Yulhendri, I. S. M., Mama, J. E., & Softazia, W. (2020). The Analysis of the Economic Inequality of the Coast Regions. Economics Development Analysis Journal, 9(1). Retrieved from <http://journal.unnes.ac.id/sju/index.php/edaj>

⁴⁶ World Bank (2023). Poverty & Equity Brief Indonesia. https://databankfiles.worldbank.org/public/ddpext_download/poverty/987B9C90-CB9F-4D93-AE8C-750588BF00QA/current/Global_POVEQ_IDN.pdf

indicate the use of low-explosive coral bombing (blast fishing) and trawling with fine mesh in shallow waters, destroying coral reef ecosystems and capturing endangered / banned species, including sharks. Despite being prohibited by Law 45/2009 and the Omnibus Law on Job Creation, weak enforcement and insufficient local financing impede efforts to prevent illegal, unreported, and unregulated (IUU) fishing in WPP 572 provinces (**Annex 2, Sections 1 and 2**).

34. MPA management also suffers from inadequate financing and capacity, which reduces the effective implementation of natural ecosystem protection measures. A recent study on management effectiveness across 61 MPAs in Indonesia indicates that the majority of MPAs are not sustainably managed, and/or regulations are inadequately enforced due to deficiencies in infrastructure, facilities, and human resources.⁴⁷
35. Intensive aquaculture further threatens mangrove and seagrass ecosystems, particularly in Lampung province. Field observations indicate that untreated wastewater from shrimp aquaculture pollutes mangrove and seagrass ecosystems, which are already struggling with climate-driven sedimentation. The most significant threats from aquaculture are wastewater discharge into the ocean and conversion of mangroves into aquaculture areas.⁴⁸ Figure 6 below illustrates land use and land cover change across WPP 572 between 2000 and 2024, highlighting the extent of deforestation and landscape degradation in coastal regions.

map image removed

Figure 6. Land use change, settlement, and ecosystem degradation within the 6 provinces in WPP 572 (2000–2024), showing areas of deforestation. Source: Ministry of Environment and Forestry. Land Cover Map, 2025; Tree cover loss (Hansen et al., 2025)

Marine pollution

36. Terrestrial waste degrades coastal ecosystems, and waste deposition is increased by elevated storm activity and higher flooding rates caused by climate change. During storms and floods, untreated waste from urban areas and industrial facilities is washed into rivers and transported to the coast, overwhelming waste management infrastructure and leading to direct release into coastal waters.⁴⁹ This pollution compromises water quality and biodiversity, endangering marine life through entanglement, ingestion, and habitat degradation. Pollutants from untreated waste further contaminate coastal waters, impacting aquatic species and human populations that are reliant on coastal resources for livelihoods and sustenance.⁵⁰

Blue Economy in WPP 572

37. In Indonesia, the 'blue economy' is defined as "*an approach to promoting sustainable marine management and the conservation of marine and coastal resources and their ecosystems to generate economic growth through community engagement, resource efficiency, minimizing waste, and multiple incomes.*" (Law 32, 2014). Most blue economy enterprises in WPP 572 are micro/small and focus on fishing, fish processing, and tourism. Most lack formal business registration, access to markets, collateral, and capacity to fulfil the loan requirements of commercial banks. WPP 572 provinces have relatively fewer ports than other parts of the country and are isolated from both national (especially Javanese) and regional markets (Malaysia and Singapore). Enterprises located on remote islands with low connectivity to the mainland face even greater challenges in accessing markets. Technological innovations in marine biotechnology, maritime decarbonization, green shipbuilding, and other research-driven entrepreneurship are lacking in WPP 572, with startups mainly focusing on digital marketplaces and aquaculture automation.
38. While financial liquidity is high in Indonesia, the lack of investment-ready deal pipelines and perceptions that WPP 572 presents high risks limit capital allocation in the blue economy. Despite several government-funded micro-credit schemes⁵¹, BLU LPMUKP, which provides subsidized loans to marine and fisheries MSMEs, faces significant operational barriers, including complicated paper-based procedures, the absence of an integrated digital loan management system, and limited outreach capacity, resulting in low disbursement absorption and restricted access for vulnerable coastal communities. Consequently, loan sharks (providing micro-loans at high interest rates - generally outside the law) are the most common

⁴⁷ Meilana, L., Fang, Q., Susanto, H. A., Widiastutik, R., Syaputra, D. E., Ikhumhen, H. O., Sholihah, R., Hakim, A., Yang, S., Liu, Z. (2023) How Indonesia marine protected areas (MPAs) are doing: A management performance-based evaluation. *Biol Conserv* 282: 110033.

⁴⁸ Ilman, M., Dargusch, P., Dart, P., & Onrizal (2016). A historical analysis of the drivers of loss and degradation of Indonesia's mangroves. *Land Use Policy*, 54, 448-459. <https://doi.org/10.1016/j.landusepol.2016.03.010>

⁴⁹ Kusuma, Anma Hari, Amril Ma'ruf Siregar, Helvi Yanfika, Puspita Yulindari, Muhammad Havis, Lusmeilia Afriani, and Rudy Rudy. 2022. 'Struktur Komunitas Karang Pasca Tsunami Di Desa Kunjir, Kecamatan Rajabasa, Kabupaten Lampung Selatan, Provinsi Lampung'. *Jurnal Perikanan* 12 (2): 245–55. <https://doi.org/10.29303/jp.v12i2.301>.

⁵⁰ Earp, H. S., Prinz, N., Czieielski, and Andskog, M. (2018) For a World Without Boundaries: Connectivity Between Marine Tropical Ecosystems in Times of Change' in *YOUMARES 8 – Oceans Across Boundaries: Learning from each other*, edited by Simon Jungblut, Viola Lieblch, and Maya Bode, pp 125-144. Kiel Germany: SpringerOpen,

⁵¹ LPMUKP (*Lembaga Pengelola Modal Usaha Kelautan dan Perikanan*, a public service agency under MMAF), LPDB-KUMKM (*Lembaga Pengelola Dana Bergulir Koperasi Usaha Mikro, Kecil dan Menengah*, a financial institution under the Ministry of Cooperatives and SMEs), and Ultra-Micro Loans

source of financing. Complicated paperwork and a lack of support to fishers to complete loan applications contribute to the popularity of loan sharks. Bank Perkonomian Rakyat (BPRs) (rural banks) are another source of capital that have slightly less stringent lending criteria than conventional banks. However, BPRs face several operational challenges, including high rates of non-performing loans, limited internal capacity, and applicant capacity constraints.

B.2 (a). Theory of change narrative and diagram (max. 1500 words, approximately 3 pages plus diagram)

BEAM Goal statement:

*IF key regulatory frameworks are improved, communities design and implement adaptation measures, carbon-rich ecosystems are conserved, and better access to finance is facilitated for blue economy actors **THEN** a sustainable protection and production model of coastal and marine management will be realized, resulting in improved climate resilience for coastal communities and reduced GHG emissions **BECAUSE** enabling conditions will be in place, communities will be empowered to create resilience and mitigate emissions, and the private sector will be able to expand sustainably.*

Outcomes:

39. The BEAM Project seeks to achieve the following Outcomes:

- 1) *Improved legal, regulatory, and financial conditions that facilitate climate responsive protection and production in coastal & marine areas.*
 - A total of 11 improved enabling policies, regulatory frameworks, and innovative financing mechanisms will be developed at the provincial and national levels that enable sustainable ecosystem protection and improved fisheries production. Together with Outcome 4 below, BEAM will result in 10 million indirect beneficiaries in coastal communities across Indonesia.
- 2) *Strengthened climate resilience of coastal communities in WPP572 through improved livelihoods and food security.*
 - Project activities are expected to lead to food security improvements for 169,340 unique individuals and more climate resilient livelihoods for 65,220 unique individuals.
- 3) *Improved condition and extent of coastal ecosystems in WPP572 resulting in reduced GHG emissions.*
 - Through Project activities, the rate of loss of blue carbon ecosystems in WPP 572 will be halved. This impact will result from the restoration / rehabilitation of approximately 291ha of critical coastal ecosystems, alongside improved management, protection, and enforcement measures that will reduce ecosystem loss and degradation over the Project implementation period and beyond.
- 4) *Improved economic performance and climate resilience of blue economy in WPP572.*
 - Technical assistance to BLU LPMUKP will be provided to increase microfinance lending in WPP572 and action-oriented research papers will be developed to reduce businesses' and investors' perceived risk / promote business expansion into WPP572.

Key Barriers: (See **Annex 2, Section 6** for further details)

Regulatory and Policy:+

40. Regulatory and policy barriers in WPP 572 stem from fragmented governance, conflicting mandates, and outdated frameworks that hinder development, management, and effective marine conservation efforts, including efforts to protect and manage blue carbon ecosystems under MPAs. These barriers include policy misalignment among government agencies, administrative crowding, and poor data management (See **Annex 2, Section 4**). For example, although MMAF Regulation No. 31/2020 mandates MPA legalization, implementation has been slow in WPP 572 due to delays and limited funding at the provincial government level. As a result, less than 2% of the area has been legally designated as MPAs. Additionally, climate adaptation measures are inconsistently integrated into policies - while the mid-term planning document RPJMN 2025-2029 includes blue economy goals, Indonesia's NDC lacks binding marine mitigation targets. This results in insufficient protection of blue carbon habitats. Current regulatory systems informing management practices, including MPAs, are also outdated, as they do not fully incorporate climate change impacts. Financing remains another critical barrier where MPAs rely heavily on national and regional budgets, but funding is inadequate. Innovative financing mechanisms,

such as blue bonds and payments for ecosystem services, remain underutilized due to unclear incentives under Government Regulation No. 21/2021.

41. Activities under Component 1 will address these legal and regulatory barriers by supporting the national government and relevant sub-national entities in the creation, improvement, and implementation of new regulatory frameworks and policies for ecosystem protection, sustainable fisheries management, and innovative financing. BEAM will also address regulatory weaknesses in the protection of blue ecosystems at national and sub-national levels by providing technical assistance and capacity building to improve coordination and data management. This includes strengthening the Public-Private Partnership (PPP) framework for MPA management, led by MMAF as the technical policy lead and implemented on the ground by provincial Marine and Fisheries Agencies (DKP – *Dinas Kelautan dan Perikanan*). An improved PPP framework will enhance coordination among government, the private sector, and local communities, enabling more inclusive investment, better infrastructure for fisheries and tourism, and sustainable access to marine resources. This PPP framework will be applied in WPP572 and nationally across Indonesia.
42. Lessons learned will be shared to enhance knowledge creation and facilitate the development of the blue financing ecosystem through industry advocacy and the establishment of standardized regulatory guidance. Several initiatives have made progress in addressing similar barriers. For instance, the Peat and Mangrove Restoration Agency (BRGM), established under Presidential Regulation No. 120/2020, rehabilitated 600,000 hectares of mangroves nationwide through 2024, though inter-ministerial coordination challenges persist. Debt-for-nature swaps, such as the US – Indonesia TFCCA Coral Reef Program, demonstrate how debt relief can fund MPA expansion, which is a model that could be replicated in WPP 572.

Technical:

43. Consultations with communities, local fishing associations, academic researchers, international research organizations, and government fisheries management institutions (**Annex 7**) indicate that significant gaps exist in current fisheries data, resulting in ineffective fisheries management strategies (e.g. maximum sustainable yield and total allowable catch) and fishing management area plans for WPP 572, which lead to inadequate fishing quota enforcement and overfishing. Weak community-based monitoring and insufficient technical capacity to manage fisheries data are also barriers.
44. Current data collection and analysis for fisheries is very costly due to protocols that rely on many dedicated and trained enumerators. Data collection and management can be enhanced through innovation to improve and simplify these practices. This could include fisher-centered products, such as cellphone-based data collection and reporting apps, camera-based identification, and measurement apps. Experience from other projects shows promising results. The Scientific Forum for Sustainable Fisheries (FIP2B – *Forum Ilmiah Pengelolaan Perikanan Berkelanjutan*) in West Nusa Tenggara Province developed a fisheries improvement platform, a digital system that integrates catches data, vessel tracking, and market linkages to promote sustainable fishing practices⁵². Similarly, Yayasan Konservasi Alam Nusantara uses FishFace, a camera-based AI tool for species identification, which cut monitoring costs by 40%.⁵³ Grant-based technical assistance will support such approaches, as elaborated in Activity 1.1.2. Coupled with technical assistance and capacity building to government entities to improve data management systems, BEAM will create a sustainable fisheries data mechanism that will continue beyond the life of the Project.
45. To address technical barriers that currently deter investor capital allocation to WPP572, including lack of market intelligence, weak cooperative systems, limited green shipping frameworks, and unclear marine tourism investment pathways, BEAM will support production of action-oriented blue economy research for businesses, investors, and other key stakeholders. These papers will provide critical technical information on market segmentation of blue economy enterprises in WPP 572, better enabling fisheries cooperatives, blue economy sub-sectoral opportunities, and marine investment roadmaps. The findings will be actively disseminated to a variety of stakeholders including financial intermediaries, development partners, and policymakers.

Social:

46. Coastal communities in WPP572 rely on fisheries for subsistence and income, but they have few economic opportunities due to limited financial resources, market access, and information availability. Community options for adaptation are further limited by lack of financing to undertake adaptive interventions, including diversification of livelihoods. Project provinces also have a higher average percentage of female-headed households, which are characterized by having lower adaptive

⁵² <https://fip2b-ntb.org/>

⁵³ <https://www.ykan.or.id/en/publications/articles/perspectives/the-fishface-system-is-a-breakthrough-for-preserving-fish-populations-in-indonesia/>

capacity to respond to climate change and higher vulnerability due to less access to assets, climate information, and credit than male-headed households (**Annex 8**).

47. The Project will address these barriers by providing grants for sustainable and inclusive climate change adaptation and mitigation activities designed by communities and their representative organizations while ensuring access for vulnerable, indigenous, and disadvantaged groups (**Annex 8 and Annex 6f**), as well as grants to promote investment readiness to participate in the blue economy. Strengthening the adaptive capacity of coastal populations, including women, will both directly strengthen climate resilience and provide a foundation for more inclusive blue economy investments in the future.
48. New data collection practices under Activity 1.1.2 will allow for Gender Equality, and Social Inclusion (GESI) surveys for the fisheries sector to more accurately capture the role of women in fisheries, and the roles of other socioeconomically vulnerable groups. The availability of improved data is expected to enable relevant stakeholders to understand the diversity of roles in fisheries value chains, including common gender-based task allocation, and create plans that address the needs of women and vulnerable groups.

Financial:

49. Government budget allocations are currently insufficient to undertake expansion or improvement of existing MPAs and environmental restoration activities. The collection of fishing revenues is done by entities not directly involved in MPA management and revenue is allocated to central or provincial budgets without earmarking funding for MPAs and fishery support, leading to insufficient financial resources for effective management of MPAs and fisheries.
50. Many local enterprises face challenges like lack of formal registration, market access, and collateral for commercial financing. Additionally, remote locations and low internet coverage hinder market access. The lack of investment-ready projects and the perception that sites in WPP 572 face high risks also limits capital allocation by the private sector. Government micro-credit schemes exist, but loan sharks remain a common financing source due to micro-credit paperwork complexities. Rural banks offer some capital but face operational challenges and have a higher risk perception of the fisheries sector. Venture capital investment in blue economy startups is occurring, but there is a need for sector-specific understanding and data transparency to foster blue financing growth at scale.
51. To address these barriers, BEAM will support the development of innovative MPA financing mechanisms under Component 1 to increase the number of sources and the volume of finance available for MPA and coastal management both in WPP572 and across Indonesia. In addition, under Component 2, BEAM will provide targeted technical assistance to the Marine and Fisheries Business Capital Management Agency (BLU LPMUKP), streamlining its microcredit processes by introducing an IT-based loan management system, simplifying disbursement methods, and training staff, thereby increasing affordable credit flows to small-scale fishers and fish farmers in WPP 572. Through this support, BEAM will stimulate lending to sustainable production models that increase local employment and support the growth of a sustainable and climate-resilient blue economy.

Key Assumptions and Risks:

52. The Theory of Change relies on several underlying assumptions for the success of the project:
 - 1) Improvements to regulation and policy will have a direct impact on coastal ecosystems and their management.
 - 2) Government agencies will use improved data to inform management and harvest strategies.
 - 3) The protection-production model for coastal/marine ecosystems remains a strategic priority for government.
 - 4) Government continues to prioritize and fund microfinance lending to fishers and coastal communities.
 - 5) The global economy and political situation in Indonesia remains stable.
53. Key risks include (described in **Section F**):
 - R1: Political Prioritization of the Project and its objectives
 - R2: Lack of policy coherence among national and subnational government entities
 - R3: Large-scale natural disasters significantly affect WPP 572
 - R4: ESS and Gender negatively impacted by societal or institutional results of activities
 - R5: Risk of fraud, collusion, obstruction, corruption, retaliation, money laundering (i.e. Prohibited Practices)
54. In addition to the Key risks above, several risks associated with on-granting facilities are recognized by the Project and mitigated through Component 2 design to reduce their impact. These granting risks include:

- Complicated applications and reporting processes leading to limited uptake.
- Comprehensive oversight required to meet Project targets given undefined grantee interventions.
- Challenges in effectively monitoring and evaluating grant impacts.
- Determination of sustainability and long-term impact of funded sub-projects.
- Compliance with regulations and audits given the many different types of applicant organizations.
- Accessibility for a diverse range of applicants, including under-represented or marginalized groups.

Project Theory of Change:

55. The BEAM Project is designed to address the systemic barriers described above through an integrated protection-and-production approach that simultaneously strengthens the enabling environment for sustainable marine resource management, empowers communities to design and lead climate action including conservation of carbon-rich coastal ecosystems, and improves access to finance for blue economy actors.
56. The BEAM Project is founded on a climate risk framework that recognizes climate impacts as a function of hazards, exposure, and underlying vulnerabilities (see Table 1 above). Coastal communities, ecosystems, fisheries, and blue economy enterprises in WPP 572 are exposed to increasing climate hazards including sea-level rise, coastal erosion, extreme weather events, ocean warming, and resulting negative effects on fisheries productivity. Climate projections indicate continued increases in sea surface temperatures and sea level throughout the Project area, alongside increasing rainfall variability and heavy precipitation events that contribute to sedimentation, flooding, and degradation of coastal ecosystems. Climate risk is exacerbated by vulnerabilities resulting from fragmented governance, weak ecosystem protection, insufficient climate-responsive financing, limited access to information and markets, inadequate livelihood diversification, and constrained adaptive capacity among vulnerable groups, as well as high levels of poverty. BEAM's interventions are designed to reduce climate risk by strengthening institutions and governance systems, reducing ecosystem degradation, supporting ecosystem restoration, enhancing adaptive capacity and livelihood resilience, and improving access to finance and investment. Through these measures, the project reduces institutional, ecological, social, and economic vulnerability while also lowering the exposure of coastal communities and ecosystems to climate-related impacts, thereby strengthening long-term climate resilience in WPP 572.
57. Regulatory barriers in WPP 572 (B1) prevent the adequate protection of blue carbon. These challenges limit the effectiveness of MPAs, hinder protection of blue carbon ecosystems, and constrain sustainable fisheries management. To address these barriers, BEAM will work with national and sub-national government partners to develop and strengthen evidence-based policies, regulatory frameworks, and innovative financing mechanisms that support climate-responsive protection and production (Output 1.1). The project will improve coordination among government agencies, strengthen fisheries and ecosystem governance, enhance marine spatial management, and support implementation of public-private partnership (PPP) models for MPA management (Activity 1.1.1). Under Activity 1.1.1, the Project will support the establishment of a new national MPA and expansion of two provincial MPAs, strengthen fisheries management plans, and improve protection and enforcement systems. These measures reduce the exposure of marine ecosystems to overexploitation and degradation while safeguarding ecosystem services that support fisheries productivity and coastal livelihoods. Activity 1.1.1 also strengthens institutional adaptive capacity by improving coordination across government entities, supporting implementation of climate-responsive policies, and establishing innovative financing mechanisms that increase resources available for long-term ecosystem management.
58. In WPP 572, gaps in fisheries data, costly monitoring systems, weak enforcement, and limited technical capacity have contributed to unsustainable fishing practices and reduced effectiveness of management measures (B2). BEAM will address these barriers by supporting the development and deployment of innovative data collection and management systems, including fisher-centered digital platforms, mobile applications, artificial intelligence-enabled monitoring tools, and improved fisheries information systems (Activity 1.1.2). Capacity building and technical assistance will strengthen the ability of government agencies and fisheries stakeholders to collect, analyze, and use data to inform management decisions, harvest strategies, and conservation planning. Improved data systems will also generate better information on gender equality and social inclusion within fisheries value chains, allowing policymakers and stakeholders to better understand and respond to the needs of women and other vulnerable groups. These investments will create a sustainable fisheries knowledge ecosystem that supports evidence-based decision-making long after project completion and contributes to more effective management of coastal and marine resources across Indonesia. By supporting digital data collection, stock assessments, community-based monitoring, and integration of local and Indigenous knowledge, the BEAM Project enables

government agencies to make more informed and adaptive management decisions. Improved fisheries data allows for climate-responsive harvest strategies and quota-setting processes that can respond to fish stock conditions over time.

59. Lessons generated through implementation will be used to inform national policy dialogues and strengthen Indonesia's broader blue financing ecosystem (Activity 1.1.3). Activity 1.1.3 strengthens adaptive capacity beyond the life of the BEAM Project by establishing a knowledge management center and learning platform that facilitates replication, scaling, and continuous learning across WPPs and institutions. This center will be hosted by a local university and open to the public both online and in person to disseminate knowledge of climate change risks, climate-responsive adaptation approaches and innovations, and methods to conserve critical ecosystems.
60. As a result of Output 1.1. and Activities 1.1.1, 1.1.2, and 1.1.3, the project will achieve Outcome 1: Improved legal, regulatory, and financial conditions that facilitate climate-responsive protection and production in coastal and marine areas, including the development of 11 improved enabling policies, regulatory frameworks, and innovative financing mechanisms that support sustainable ecosystem protection and fisheries production nationally. The critical assumptions to achieve Outcome 1 include that government agencies adopt and operationalize improved policies and data systems to inform management and harvest strategies, and that these improvements will have a direct impact on coastal ecosystems. The key risks to achieving Outcome 1 are R1: political prioritization shifts away from project objectives and R2: lack of policy incoherence among national and subnational government entities.
61. Coastal communities in WPP 572 face increasing climate risks while possessing limited access to financial resources and market opportunities (B3). These challenges are particularly acute for women, Indigenous Peoples, and other vulnerable groups whose adaptive capacity is often constrained by inequitable access to assets, information, and finance. Through the BEAM on-granting mechanism, communities and their representative organizations will be empowered to design and implement locally led adaptation and mitigation initiatives that respond to their unique priorities and circumstances (Output 2.1). Adaptation grants will support sustainable livelihoods, ecotourism, collaborative MPA management, fisheries diversification, and waste management initiatives (Activity 2.1.1). The Adaptation grants also further strengthen local stewardship, monitoring and protection of critical ecosystems, contributing to the long-term maintenance of these ecosystem-based protective functions. BEAM will emphasize locally led solutions that incorporate traditional knowledge and ensure meaningful participation of women and marginalized groups.
62. At the community level, adaptation grants under Activity 2.1.1 increase livelihood resilience by supporting diversified income opportunities through ecotourism, sustainable fisheries, community enterprises, and waste management initiatives. Diversification reduces dependence on incomes from climate-sensitive fisheries and creates additional livelihood options that can withstand climate and environmental shocks. Technical assistance provided to grantees further strengthens their ability to implement and sustain these interventions. The Project also explicitly reduces vulnerability among women, Indigenous Peoples, and other marginalized groups through targeted outreach, accessible grant mechanisms, GESI-responsive project design, and participatory approaches. Improved inclusion helps address inequalities in access to information, assets, finance, and decision-making that contribute to elevated climate vulnerability among women (co-benefit 2). Grants empower communities to identify climate risks, design solutions that respond to local priorities, and implement interventions that improve economic resilience and food security. Evidence from locally led adaptation initiatives globally demonstrates that community-driven approaches are often more sustainable and effective because they are tailored to local environmental and socioeconomic conditions. The project will provide technical support, training, monitoring, and safeguards oversight to improve the effectiveness of beneficiary-designed interventions.
63. By strengthening adaptive capacity, improving climate-resilient livelihood opportunities, and enhancing food security, Outcome 2: Strengthened climate resilience of coastal communities in WPP 572 will be achieved, resulting in improved food security for approximately 169,340 people, improved and/or new climate-resilient livelihood options for approximately 65,220 people, and adoption of innovations that strengthen climate change resilience for approximately 121,240 people. See Table 3 in Section B2(a) for more detail on the Project's adaptation causal pathways. The critical assumptions to achieve Outcome 2 include that the protection-production model for coastal/marine ecosystems remains a strategic priority for government and that the government continues to prioritize and fund microfinance lending to fishers and coastal communities. Key risks are R3: large-scale natural disasters significantly affect WPP 572, R4: ESS and Gender negatively impacted by societal or institutional results of activities and R5: fraud, collusion, obstruction, corruption, retaliation, and money laundering.

64. The degradation of mangroves, seagrasses, and other coastal ecosystems undermines biodiversity, reduces ecosystem services, weakens community resilience, and contributes to greenhouse gas emissions (B4). Existing management and financing mechanisms have proven insufficient to halt ecosystem loss (B1 and B3). To address these barriers, BEAM will support community-led blue carbon and renewable energy projects (Output 2.2). Under Activity 2.2.1, mitigation grants will support the restoration and rehabilitation of mangrove and seagrass ecosystems and energy solutions that reduce pressure on coastal ecosystems while contributing to climate mitigation objectives. These restoration efforts also support improved biodiversity and habitat quality in WPP 572 (co-benefit 1) and provide adaptation benefits for coastal communities.
65. By providing mitigation grants to local organizations and improving management frameworks and enforcement, the project expects to achieve Outcome 3: Improved condition and extent of coastal ecosystems in WPP 572 resulting in reduced greenhouse gas emissions. By slowing the loss of blue carbon ecosystems and restoring approximately 291 hectares of critical coastal habitats, BEAM contributes to greenhouse-gas mitigation objectives and Indonesia's broader climate commitments. These same activities deliver substantial climate adaptation benefits. Mangroves and seagrasses function as natural coastal defenses that reduce wave energy, limit coastal erosion, decrease flooding and storm-surge impacts, and protect coastal settlements and infrastructure from climate-related hazards. Healthy coastal ecosystems also improve fisheries productivity by providing critical breeding, nursery, and feeding habitats for commercially important fish species. Improving ecosystem health and extent strengthens food security, supports livelihoods, and increases the resilience of fisheries-dependent communities to climate-induced declines in fish stocks and changing ocean conditions. As sea-level rise, increasing sea-surface temperatures, and more extreme weather events continue to affect WPP 572, healthy ecosystems help communities adapt by reducing exposure to hazards, lowering vulnerability, and maintaining the ecosystem services that underpin local economies (see Table 3). The critical assumptions to achieve Outcome 3 are the same as for Outcome 2 (that the protection-production model for coastal/marine ecosystems remains a strategic priority for government and that the government continues to prioritize and fund microfinance lending to fishers and coastal communities). The key risks are R3: large-scale natural disasters significantly affect WPP 572 and R5: Risks of fraud, collusion, obstruction corruption, retaliation, money laundering (Prohibited Practices).
66. The BEAM Theory of Change is supported by a quantified mitigation framework, detailed in Annex 22. The Project's mitigation impact is achieved through the three intervention pathways, which collectively are projected to reduce 483,322 tCO₂e over the 6-year implementation period and 1,298,901 tCO₂e over the Project's 20-year lifespan. The baseline for these estimates is derived from localized historical loss rates of mangroves and seagrass in WPP 572 (average of 0.2% and 2.82% annually, respectively). The additionality of the Project's mitigation outcomes is demonstrated through regulatory, financial, technological, institutional, and market barriers that prevent these interventions from occurring without GCF support. These barriers, and the Project's approach to overcoming them, are elaborated in Annex 22, and are further reflected in the Project's logical framework which presents quantified emissions reduction targets by intervention pathway.
67. Despite the economic potential of WPP 572, many blue economy enterprises face barriers to growth due to weak market information, insufficient access to affordable finance, and perceptions of high investment risk (B3). BEAM will address these challenges through targeted support to improve access to finance, and produce knowledge products to support expanded operations among blue economy actors in WPP 572 (Output 2.3). The Project will provide technical assistance to the Marine and Fisheries Business Capital Management Agency (BLU LPMUKP) to streamline lending processes, strengthen loan management systems, and increase access to affordable credit for small-scale fishers and fish farmers. In parallel, action-oriented research and market intelligence products will provide investors, businesses, financial institutions, and policymakers with better information on opportunities in fisheries, tourism, cooperatives, and other blue economy sectors (Activity 2.3.1).
68. By improving existing lending systems and providing better market intelligence, BEAM will achieve Outcome 4: Improved economic performance and climate resilience of the blue economy in WPP 572 by enabling enterprises to access capital, expand operations sustainably, and generate employment while supporting climate-resilient economic development. The critical assumptions to achieve Outcome 4 include that the global economy and political situation in Indonesia remain stable and the government continues to prioritize and fund microfinance lending to fishers and coastal communities. The key risks are R4: ESS and Gender negatively impacted by societal or institutional results of activities and R5: Risks of fraud, collusion, obstruction corruption, retaliation, money laundering (Prohibited Practices).
69. While previous government, donor and NGO initiatives have generated important progress in coastal ecosystem conservation, fisheries management and community resilience, the barriers noted above remain in WPP 572 because

interventions have often addressed individual constraints rather than interconnected, regulatory, technical, social and financial factors that undermine sustainable coastal and marine management. For example, national initiatives such as the Peat and Mangrove Restoration Agency (BRGM) successfully rehabilitated extensive mangrove areas across Indonesia, demonstrating the feasibility of large-scale ecosystem restoration; however, challenges related to inter-agency coordination sustainable financing, and long-term management, have continued to constrain the effectiveness and durability of conservation outcomes (see Annex 2, Section 4.2.1). Similarly, MPA expansion efforts have been limited by slow implementation of existing regulations, weak coordination between national and provincial authorities and insufficient operational funding. As a result, less than 2% of WPP 572 has been legally designated as MPA despite existing national policy mandates.

70. In fisheries management, previous investments have improved scientific understanding and piloted innovative data systems, including digital fisheries monitoring tools and AI-supported species identification; however, these approaches have generally remained localized or project-specific and have not been sufficiently integrated into government management systems, limiting their broader application and long-term sustainability. Significant data gaps therefore continue to undermine evidence-based harvest strategies, quota setting, and enforcement.
71. Likewise, existing microcredit and enterprise development programs have improved access to finance in some areas, but structural barriers remain, including cumbersome lending procedures, limited investment readiness of local enterprises, inadequate market intelligence, and persistent perceptions of high investment risk among financial institutions and investors. These factors continue to constrain growth of the blue economy in WPP 572.
72. Finally, many previous community resilience initiatives have focused on predetermined activities rather than community-driven solutions, limiting local ownership and reducing opportunities to incorporate local knowledge and address context-specific adaptation priorities. Women, Indigenous Peoples, and other vulnerable groups have also frequently faced barriers to accessing climate finance, information, and decision-making processes. Women often have less access to assets and credit, making it harder for them to adapt to climate change, and they are often underrepresented in decision-making processes that affect them, and the female-headed households, which account for approximately 15.5% of coastal households in WPP 572, face heightened vulnerability due to limited access to assets, climate information, and credit compared to male-headed households (see Annex 2, Section 3.7.2),
73. The causal pathways underpinning the Theory of Change recognize that progress toward sustainable coastal and marine management depends not only on the delivery of outputs, but also on critical assumptions regarding policy uptake and institutional coordination. These assumptions are explicitly reflected within the results chain and supported by targeted risk management measures. By addressing regulatory, technical, social, and financial barriers simultaneously, while incorporating lessons learned from previous initiatives, the project is expected to generate mutually reinforcing outcomes that improve ecosystem health, strengthen community resilience, support climate-resilient growth of the blue economy in WPP 572, and demonstrate effectiveness to support national scaling and replication.
74. The BEAM Project adopts an integrated protection-production approach that recognizes the strong interdependence between climate adaptation, climate mitigation, biodiversity conservation, and sustainable livelihoods in coastal and marine ecosystems. Rather than treating adaptation and mitigation as separate objectives, the BEAM Project is designed so that interventions generate mutually reinforcing benefits across relevant dimensions - improved ecosystem protection, sustainable fisheries management, climate-resilient livelihoods, and enhanced access to finance collectively reduce climate vulnerability while also conserving and restoring carbon-rich coastal ecosystems. This integrated approach reflects the reality that the resilience of coastal communities in WPP 572 is intrinsically linked to the health and productivity of mangroves, seagrasses, coral reefs, and marine ecosystems upon which livelihoods, food security, and local economic development depend. Through its interconnected interventions, the Project seeks to establish a self-reinforcing system in which governments, communities, and private sector actors collectively support sustainable marine resource management, climate resilience, and inclusive economic growth. This will result in a sustainable protection-and-production model for coastal and marine management in WPP 572 and provide lessons that can be replicated across Indonesia.

Project Structure:

Component 1: Strengthen Enabling Conditions

75. Component 1 will address identified barriers by working with the GoI to improve the regulatory, financial and policy environment to allow for effective protection and production in WPP 572. This enabling environment will improve the

effectiveness of the grant-based support delivered under Component 2. Component 1 activities will equip relevant stakeholders with adequate training and resources to sufficiently support fisheries science, evidence-based fisheries policy, and marine ecosystem management.

76. Completion of the Activities under Component 1 (see **B.3** for detail) will lead to achievement of Project Output:
- 1.1: *Development and deployment of evidence-based regulatory frameworks and knowledge products for ecosystem protection, fisheries sustainability, and innovative financing*

Component 2: Locally Led Climate Action + Investment Readiness

77. Component 2 will support Locally Led Climate Action through adaptation and mitigation interventions designed and implemented by communities and representative organizations who will utilize local and traditional knowledge; and provide needs-based technical and capacity assistance to the Marine and Fisheries Business Capital Management Agency (BLU LPMUKP) to stimulate and improve investment readiness of the blue economy in WPP 572. The sub-windows within the Component 2, indicated below, were designed through extensive consultation with local NGOs, CSOs, and community groups to identify and target the sectors where support is most needed to build climate resilience through improved food security and livelihoods.
- Adaptation grants (Activity 2.1.1) will support four priority areas: (1) eco-tourism development; (2) collaborative MPA management support; (3) sustainable and diversified fishing livelihoods; and (4) sustainable waste management practices.
 - Mitigation grants (Activity 2.2.1) will support two priority areas: (1) restoration and rehabilitation of blue carbon ecosystems; and (2) renewable energy technologies to support coastal livelihoods.
 - Investment readiness support (Activity 2.3.1) includes two main interventions: (1) action-oriented research, producing knowledge products on market segmentation, enabling fisheries cooperatives, and marine tourism investment roadmaps in WPP 572; and (2) technical assistance to BLU LPMUKP to enhance access to finance for small-scale fishers and fish farmers in WPP 572.
78. Completion of the Activities under Component 2 (See **B.3** for detail) will lead to achievement of Project Outputs:
- 2.1 *Locally-led climate adaptation projects are effectively implemented and monitored, resulting in enhanced climate resilience of vulnerable communities,*
 - 2.2 *Blue carbon and renewable energy projects are effectively implemented and monitored, resulting in reduced GHG emissions, and*
 - 2.3 *Blue economy enterprises have improved access to finance and expand operations in WPP 572.*

Co-benefits:

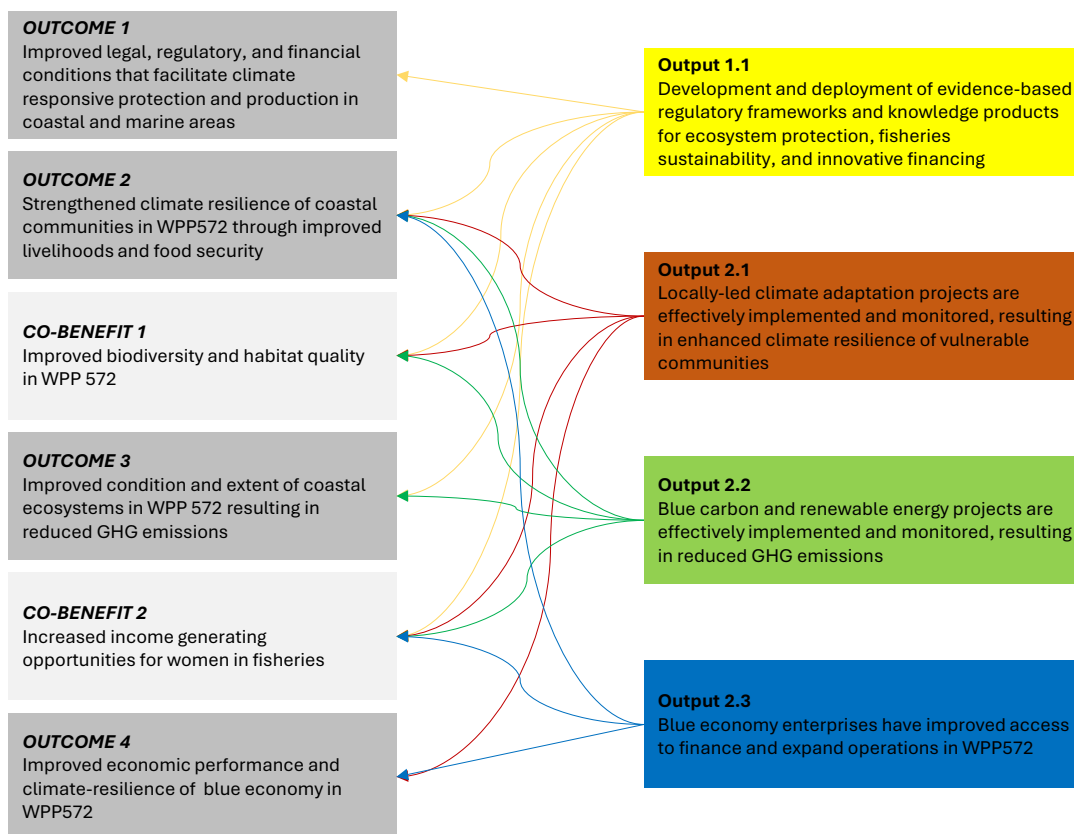
79. The Project interventions will lead to two co-benefits, which will be measured during the Project's implementation:
- 1) Improved biodiversity and habitat quality in WPP 572, and
 - 2) Increased income generating opportunities for women in fisheries.

Climate Change Adaptation Causal Pathway:

Table 3: BEAM adaptation intervention pathways

The **Theory of Change: Diagram (Figure 7)** follows on next page

Figure. 8. Detail from the Theory of Change showing how outputs contribute to multiple outcomes and co-benefits



B.2 (b) Mapping outcomes to GCF result areas and co-benefit categorization

Outcome number	GCF mitigation result areas (MRAs 1–4)				GCF adaptation result areas (ARAs 1–4)			
	MRA 1	MRA 2	MRA 3	MRA 4	ARA 1	ARA 2	ARA 3	ARA 4
Outcome 1: Improved legal, regulatory, and financial conditions that facilitate climate responsive protection and production in coastal & marine areas	☐	☐	☐	☒	☒	☐	☐	☒
Outcome 2: Strengthened climate resilience of coastal communities in WPP572 through improved livelihoods and food security	☒	☐	☐	☐	☒	☒	☐	☐
Outcome 3: Improved condition and extent of coastal ecosystems in WPP572 resulting in reduced GHG emissions	☐	☐	☐	☒	☒	☒	☐	☒
Outcome 4: Improved economic performance and climate resilience of blue economy	☐	☐	☐	☐	☒	☒	☐	☒
Co-benefit number	Co-benefits							
	Environmental	Social	Economic	Gender	Adaptation	Mitigation		
Co-benefit 1: Improved biodiversity and habitat quality in WPP 572	☒	☐	☐	☐	☒	☒		
Co-benefit 2: Increased income generating opportunities for women in fisheries	☒	☐	☐	☒	☒	☐		

B.3. Project/programme description (max. 2500 words, approximately 5 pages)

Overview: *Additional detail on Project implementation available in Annex 02, Section 6*

80. BEAM is designed to support the GoI to reduce the impacts of climate change while also driving inclusive, sustainable growth and development of the marine and coastal economy. BEAM aims to establish a protection–production model in WPP 572 to address climate impacts on vulnerable coastal communities, mitigate GHG emissions, and facilitate investment in a climate-resilient blue economy. By demonstrating the effectiveness of the protection production model in this under-invested region of Indonesia and disseminating lessons learned to government, the private sector, and other stakeholders the model can be replicated in other regions of Indonesia to support climate responsive growth of the blue economy while reducing ecosystem degradation.
81. BEAM is a key mechanism of the larger **Blue Halo S Initiative** which seeks to scale the protection production model of conservation and economic growth across Indonesia and beyond. Blue Halo S currently has a pilot project in Nias, North Sumatra which is undertaking ecosystem restoration, MPA management, and reforms to the fisheries sector to increase sustainability and improve outcomes for fishers. Blue Halo S also has an ongoing project funded by OceanX, Blue Nature Alliance, Becht Family Foundation, Global Fund for Coral Reefs, and Philanthropy Asia Alliance to collect primary data and help inform MPA policy, design, and preliminary fishery stock assessments in WPP 572.
82. The BEAM Project aims to achieve a paradigm shift to a protection-production blue economy model through two components: Component 1 will focus on enhancing regulatory frameworks for MPAs, fisheries management, and sustainable financing across government levels; and Component 2 will allocate grants and technical assistance through three distinct interventions: an Adaptation Window – targeting food security and livelihood improvements, a Mitigation Window – focused on ecosystem restoration and small-scale renewable energy technology, and Investment Readiness interventions – which provides technical assistance to BLU LPMUKP and production of action-oriented research papers supporting growth of a climate-responsive blue economy. The impact of Component 2 will be increased by the enabling environment established through Component 1. For example, by increasing MPA management capacity through regulatory reforms, the community fishing operations supported under Component 2 will be more effective in increasing livelihoods. Similarly, the fisheries data collection interventions under Component 1 will support MPA management grants provided under Component 2. Under Windows 1 and 2 in Component 2, grant funding will be provided to local community enterprises for climate adaptation and mitigation activities. The technical assistance to BLU LPMUKP under the Investment Readiness intervention complements these direct grants by strengthening the supply of affordable, accessible microcredit, enabling community enterprises that receive Project grant support to better access follow-on working capital or investment loans without reverting to informal loan sharks. While the Project will be implemented in WPP 572, its approaches and its influence on the policy and regulatory environment are expected to scale across Indonesia's blue economy and its impacts extend well beyond the implementation period of the Project.

Component 1: Strengthen Enabling Conditions

83. Component 1 will establish the enabling conditions necessary for the long-term protection of marine and coastal ecosystems, enhancement of sustainable fisheries management, and implementation of viable inclusive, sustainable financing mechanisms. This will be achieved through comprehensive support to developing regulatory frameworks, improving fisheries and marine ecosystem data, fostering capacity building, and facilitating knowledge sharing with national and sub-national governments. KI as Executing Entity (EE) will collaborate with key government ministries and partner organizations with expertise and experience in regulatory affairs, data collection / dissemination, communication, and knowledge management. KI will be supported by Technical Partner organizations and contracted technical experts for Project implementation support. This support will include specialized technical assistance to be provided by CI Foundation under a grant agreement managed by KI. CI's technical partner role is separate from CI's Accredited Entity role and will be subject to fiduciary, oversight, and conflict-of-interest controls.

Output 1.1 Development and deployment of evidence-based regulatory frameworks and knowledge products for ecosystem protection, fisheries sustainability, and innovative financing.

84. KI will support national and sub-national government entities in establishing, enhancing and overseeing new regulatory frameworks and policies for the protection of marine and coastal ecosystems; sustainable fisheries

management; and sustainable, inclusive blue financing mechanisms. KI will also address regulatory deficiencies at both national and sub-national levels by providing technical assistance and capacity building. These efforts will foster coordination and enhance management capabilities for marine and coastal resources in WPP 572 and beyond.

85. Output 1.1 relies on close collaboration with national entities, including the Ministry of Marine Affairs and Fisheries (MMAF), and sub-national partners in WPP 572. This collaboration is key for developing regulatory frameworks, strengthening MPA management, and advancing sustainable fisheries management as key enabling conditions for the blue economy.
86. BEAM's substantial co-financing underpins the work under this Output. MMAF is investing in MPA unit operations, fishing port infrastructure (which will facilitate better fisheries data collection and overall growth of the blue economy), and national M&E of the sector's development. Four provincial governments' direct co-finance (North Sumatra, West Sumatra, Bengkulu, and Lampung) are contributing to spatial planning, MPA zoning, surveillance, ecosystem mapping, and port development among other relevant interventions. A local university in WPP 572 (University of Bung Hatta) supports establishment of a Knowledge Learning Center for the blue economy. Finally, Konservasi Indonesia's direct co-finance contributes to OECM recognition, MPA establishment, BLUD financing mechanisms, and MPA-PPP feasibility studies. Project co-financiers contributions will directly advance regulatory reforms, data systems, institutional capacity, and innovative financing, the core pillars of Output 1.1.
87. The national and sub-national government agencies pre-identified to benefit from Output 1.1 are listed in Annex 7. These include national partners: MMAF; Bappenas; the Coordinating Ministry for Food Affairs; and national technical units located in WPP 572, such as the Fisheries Management Agency (LPP – *Lembaga Pengelola Perikanan*). Other partners have Provincial and District-level responsibilities: Provinces of WPP 572 (Aceh, West Sumatra, North Sumatra, Bengkulu, Lampung, and Banten); Provincial Regional Development Planning Agencies (BAPPEDA); Provincial Marine and Fisheries Agencies (DKP); Regional Technical Implementation Units (UPTD - *Unit Pelaksana Teknis Daerah*). Partners will be supported to develop regulatory frameworks, strengthen MPA and fisheries management, and translate national blue economy policies into effective local action. MMAF and Bappenas hold the mandate to formulate, revise, and enforce national policies on marine conservation, fisheries management, and blue economy development. Provincial and district governments translate these policies into action on the ground, enforcing regulations and leading community engagement to ensure effective implementation in WPP 572. By strengthening evidence-based regulatory frameworks in WPP 572, Output 1.1 creates a replicable model for sustainable fisheries governance that can be scaled across Indonesia. Technical assistance to MMAF will inform national policy revisions (e.g., fisheries quota-based policy, MPA enforcement, inclusive financing) that apply nationwide. Multistakeholder coordination at the provincial levels will serve as templates for other provinces, helping to reduce illegal fishing and increase fish stock resilience. Ultimately, this leads to more stable catches, improved livelihoods for millions of fishers, and enhanced climate adaptation across Indonesia's marine fisheries sector.
88. **Activity 1.1.1: Enhance ecosystem protection and fisheries sustainability through policy reform and creation of innovative financing mechanisms** will address identified regulatory weaknesses in the management of marine and coastal ecosystems and fisheries, as well as improve the regulatory environment for blue financing mechanisms in WPP 572 across a variety of national and provincial government ministries, agencies, and departments. The project will support provincial governments to implement national strategies locally, allocating resources for marine conservation fisheries management, and improved land management policies to reduce sedimentation and run-off into critical coastal ecosystems. This will include developing one new national MPA (approximately about 3 million hectares) and expanding two provincial MPAs (MPA Muara Batang Toru about 70,000 hectares and MPA Pulau Pagai Utara and Pulau Pagai Selatan about 643,000 hectares), reducing fish exploitation rates, promoting sustainable fisheries management, and conducting feasibility studies for blue financing. Through support to MPA management units, their capacity to design and enforce effective MPA regulations will be built, resulting in higher productivity fisheries in these coastal regions. Critical to this effort is the development of financial mechanisms to allow for the flow of funds to long term management of MPAs and enforcement of relevant regulations. The project will support a Public-Private Partnership (PPP) framework for MPAs, led by MMAF and implemented by provincial Regional Marine and Fisheries Agencies (DKPs). The framework improves coordination among government, private sector, and communities, enabling inclusive investment, better infrastructure, and sustainable resource access. It catalyzes private capital into blue economy businesses (fisheries, mariculture, ecotourism), benefiting local communities adjacent to MPAs and indirectly enhancing food security and diversified livelihoods across Indonesia's coastal villages. Technical assistance will be provided to national and provincial staff, with support from specialist organizations to enhance regulatory frameworks (specified in **Annex 2, Sections 4 & 6 and Annex 4**). To ensure inclusive policy development, the activity will prioritize engagement with women and vulnerable groups, including

Indigenous Peoples, as identified in **Annexes 7 and 8** through participatory tools that maximize engagement. This Activity includes the sub-activities:

- Sub-Activity 1.1.1.1 Provide technical assistance to provincial governments for effective implementation of national vision and policies.
- Sub-activity 1.1.1.2 Support the development, gazettement, and management of new and existing MPAs and OECMs.
- Sub-activity 1.1.1.3 Reinforce the current Fisheries Management Plan (*Rencana Pengelolaan Perikanan – RPP*), including its Fisheries Harvest Strategy at WPP 572.
- Sub-activity 1.1.1.4 Advance sustainable blue/green finance through the development of innovative financing mechanisms and the development of policies related to integrated protection–production and sustainable funding resources.

89. **Activity 1.1.2. Improve the production and use of data on fisheries and ecosystems by governmental and non-governmental entities.** This Activity will address insufficient and outdated information on key parameters (degree of degradation of mangroves, coral reefs, and seagrass, and on fish stocks in WPP 572) as identified from stakeholder consultations and the climate analysis presented in **Annex 7** and **Annex 2**. This activity is linked to Activity 1.1.1, and particularly Sub-Activities 1.1.1.2 (assisting regulatory frameworks on MPAs) and 1.1.1.3 (assisting the regulatory framework related to fisheries management). Under Sub-Activity 1.1.2.1, KI will support the Government of Indonesia's ongoing initiatives to enhance data utilization in existing and proposed MPAs and OECM sites. Traditional, local, and indigenous ecological knowledge will be systematically integrated into data systems where applicable and appropriate. Community members, including traditional fishers and local knowledge holders, will be actively involved through participatory assessments and validation workshops conducted in collaboration with MMAF, local governments, and academic partners. Where relevant, the project will also support the co-development of grant-level indicators that reflect both scientific and community-based understanding of ecosystem health. KI will enhance government data collection practices and plans relating to ecological and socioeconomic data and fisheries that will allow decision makers to implement climate-adaptive MPA and fisheries management practices.

90. The Project will support training of data collectors to ensure they are equipped with the necessary skills and knowledge to conduct surveys effectively, accurately, and inclusively, and develop a comprehensive plan for conducting GESI-responsive data surveys. KI will engage fisheries data specialists to: (i) design standardized data collection protocols that align with MMAF's quota based fisheries framework; (ii) train enumerators and local partners in digital tools and basic stock assessment; (iii) conduct stock assessments for priority species in WPP 572, directly feeding into the Fisheries Harvest Strategy (Sub Activity 1.1.1.3); and (iv) establish a data feedback loop with MMAF's fisheries management units to support annual quota setting and adaptive management. This enables a science based, climate-responsive quota system that balances environmental conservation with preserving community livelihoods. The Activity includes the sub-activities:

- Sub-activity 1.1.2.1 Support the GoI's existing data collection initiatives to improve and utilize data on ecological and socioeconomics in MPAs and for areas for potential MPA expansion and OECMs.
- Sub-activity 1.1.2.2 Gather data on the targeted fish commodities (biodiversity, volume, spatial distribution) to support sustainable fisheries management within WPP 572.

91. **Activity 1.1.3 Establish knowledge management and learning center for scaling and replication.** This mechanism will share and amplify information for capacity building, transferring lessons learned, and for replicating successful practices in other WPP areas in Indonesia. Lessons and best practices from Components 1 and 2 will be disseminated for future project replication and scaling up by stakeholders (CSOs, NGOs, Government) beyond the BEAM Project. A physical knowledge center will be established in an existing local university facility, featuring a comprehensive database system and a dissemination strategy. KI will work collaboratively with Bung Hatta University (in Padang, West Sumatra), MMAF, and provincial governments. KI will also launch a "protection and production campaign" at national & provincial levels and implement a road show to improve dissemination / reach. The Activity includes the sub-activities:

- Sub-activity 1.1.3.1: Design and develop a knowledge center to enhance project knowledge sharing, capacity building, and replication efforts.

- Sub-activity 1.1.3.2: Collaborate with GoI (at the national, provincial, and local levels) and non-governmental agencies in amplifying, enhancing, and replicating lessons learned in other Fisheries Management Areas/WPPs through national and subnational awareness campaigns.
- Sub-activity 1.1.3.3: Capture and disseminate learning reports from project implementation amongst project stakeholders and partners to inform refinement, replication and scaling up.

Component 2: Locally Led Climate Action + Investment Readiness

92. In Component 2, a BEAM on-granting mechanism will be established to provide financial support and capacity building to organizations to conduct Adaptation and Mitigation interventions in WPP 572. KI will serve as EE and will establish, operate, and manage the on-granting mechanism with support from Technical Partners and specialized consultants. Component 2 will have two grant windows to provide funding via subgrants for work in climate Adaptation (Window 1) and Mitigation (Window 2). Investment readiness interventions are also included in this Component, with pre-identified interventions and targeted support to existing institutions. All grants will follow KI, CI, and GCF-compliant safeguards and gender practices. The design of the on-granting windows for Adaptation and Mitigation was informed by extensive stakeholder consultations undertaken during the PPF phase (Annex 07), involving national and sub-national government agencies, local communities, women's groups, CSOs, MSMEs, academia, and private-sector actors across WPP 572. Consultation findings, together with the Climate Change Vulnerability Assessment (CCVA), were used to identify priority geographies and thematic intervention areas and informed the design of the grant windows and sub-windows. Stakeholder inputs helped shape the adaptation sub-themes, the mitigation sub-themes, and the eligibility, safeguards, gender and social inclusion, and capacity support provisions reflected in **Annexes 26 and 27**. Across on-grant interventions, emphasis will be placed on providing support to vulnerable and disadvantaged groups as identified in the GEDSI analysis (see **Annexes 6, 7, 8, 26**).
93. KI will solicit applications and issue sub-grants to a diverse set of beneficiary organizations, including GoI public service agencies, NGOs and CSOs, research institutions, universities, and enterprises operating in, or targeting, provinces within WPP 572. The targeted beneficiaries will include organizations owned by and/or working with women and other vulnerable or under-represented groups, including indigenous peoples, in coastal communities.
94. BEAM will issue subgrants in specific climate-related thematic areas described below, and grantees will be selected based on their project's impact in these areas in accordance with Eligibility Criteria (see **Annex 26**). The grant mechanism for Adaptation (Window 1) and Mitigation (Window 2), will provide both large grants (more than USD 40,000 up to USD 400,000) and small grants (up to USD 40,000), with appropriate procedures - designed to be accessible for smaller organizations to facilitate **Locally Led Climate Action**. In addition, the on-granting mechanism is designed to provide support and technical assistance to potential grantees in order to increase accessibility and impact. (See **Annexes 2 and Annex 26** for more details). All granting will be done via GCF-compliant grant agreements and in compliance with KI, CI, and GCF requirements (see **Annex 27**).
95. Under the Investment Readiness Window, KI will procure and manage expert consultant services to develop (i) action oriented blue economy research on market segmentation of blue economy enterprises in WPP 572, enabling fisheries cooperatives and marine tourism investment roadmaps to close critical knowledge gaps that deter investor capital allocation; and (ii) technical assistance to the Marine and Fisheries Business Capital Management Agency (BLU LPMUKP), targeting operational improvements to streamline microcredit processes, introduce an IT-based loan management system, simplify disbursement methods, and train staff, thereby increasing affordable credit flows to small-scale fishers and fish farmers in WPP 572, including those supported under the Project's Adaptation and Mitigation windows (See Activity 2.3.1, **Annex 02**).
96. KI will lead the granting process from solicitation to selection, award, disbursement, grants management and oversight, and close-out. KI will also conduct monitoring and evaluation (M&E), learning, and dissemination of lessons from the awarded projects. KI will be supported by Technical Partner organizations and contracted technical experts for grant proposal review and project implementation support. Certain specialized technical assistance will be provided by CI Foundation under a grant agreement managed by KI. CI's technical partner role is separate from CI's Accredited Entity role and will be subject to appropriate fiduciary, oversight, and conflict-of-interest controls. More details are included below under **BEAM Grant Cycle, Implementation Arrangements** and in **Annex 2, Section 6, Annex 26, and Annex 27**.
97. A key feature of Component 2 is its responsiveness to local needs and market demand. Within stipulated thresholds, the Project will allocate funding and support to thematic areas with more demand (further detail in **Annex 2, Section**

6). This adaptive process will be determined by the Grant Committee and KI who will ensure that the overall distribution of grant awards / projects will lead to achievement of BEAM logical framework targets. Local community representatives will participate in the Grant Committee to provide contextual input, strengthen procedural transparency, and inform the assessment of community relevance and implementation risks.

98. Each round of on-granting will function as a learning cycle for the Project. KI, the Grant Committee, Technical Partners, and the M&E team will review grantee reports, field monitoring results, local stakeholder feedback, safeguards and gender monitoring, proposal demand, and grant window performance reports to identify implementation barriers, capacity gaps, and emerging local priorities. These lessons will inform subsequent calls for proposals, including refinements to outreach, eligibility criteria, selection guidance, technical assistance, monitoring requirements, and indicative allocations across windows and sub-windows, while remaining within approved budget thresholds and ensuring achievement of BEAM logical framework targets.

Output 2.1 Locally-led climate adaptation projects are effectively implemented and monitored, resulting in enhanced climate resilience of vulnerable communities

99. Grants issued under the Adaptation Grant Window (Grant Window 1) will support vulnerable coastal communities in WPP 572 to implement Locally Led Adaptation interventions to respond to the impacts of climate change on their livelihoods and food security. Grantees will demonstrate how proposed projects will deliver climate adaptation impacts (detailed eligibility criteria provided in **Annex 26**).

100. **Activity 2.1.1 Deploy grants for sustainable climate change adaptation in coastal communities.** KI will issue an estimated \$6.48M in subgrants to support climate adaptation across four thematic areas: ecotourism, collaborative MPA management, sustainable and diversified fishing livelihoods, and sustainable waste management. The grants will be distributed as large grants for high-impact projects, and small grants to better address local needs / support organizations with more limited capacity. The grants will be selected through calls for proposals and selected in accordance with eligibility criteria as described in **Annex 26**. The Activity includes the sub-activities:

- Sub-Activity 2.1.1.1 Manage grants for ecotourism enterprises for community development.
- Sub-Activity 2.1.1.2 Manage grants for collaborative MPA management.
- Sub-Activity 2.1.1.3 Manage grants for sustainable and diversified fishing livelihoods (community-based economic activities).
- Sub-Activity 2.1.1.4 Manage grants for sustainable waste management.
- Sub-Activity 2.1.1.5 Establish and operate the adaptation and mitigation windows
- Sub-Activity 2.1.1.6. Provide technical assistance and support to adaptation grantees on cross-cutting subjects (including GESI and Safeguards)
- Sub-Activity 2.1.1.7. Monitor adaptation grant window performance

101. KI will issue calls for proposals; provide capacity building and technical assistance to all grantees who require support on preparing grant applications with support from Penabulu, a Technical Partner; lead and manage the grant selection process (with guidance from the Grants Committee) using the Window 1 eligibility criteria; conduct due diligence on applicants; assess grant applications for environmental and social safeguards; enter into sub-grant agreements with successful applicants; and undertake grant management and oversight (see details in **Annex 2, Section 6 and Annex 27**). KI and Penabulu will implement outreach through targeted workshops, community meetings, and collaboration with local networks to ensure equitable access, including identification of women-led and indigenous peoples organizations. A standardized GESI assessment tool will be applied in grant selection process to ensure the consideration of specific needs and interest of women and vulnerable groups (See **Annex 8, Annex 26, Annex 27**). Penabulu will provide capacity building and technical assistance to prospective and selected sub-grantees throughout the project cycle, including developing training modules and materials for proposal writing, conducting training sessions on proposal preparation, gender analysis training, and participatory project management approaches for sub-grantees. Penabulu will provide capacity building to sub-grantees during implementation and will oversee a learning process across the project. Specialized technical consultants will be engaged to facilitate the GESI assessment process, provide technical review during grant selection and conduct monitoring visits to ensure compliance with GESI principles.

102. The Adaptation Grant Window will fund projects that contribute to climate change adaptation in four priority areas of work/thematic areas identified through consultations and vulnerability analyses (see **Annexes 2 and 6**):

103. **Ecotourism Development:** Supporting businesses and local communities in shifting to, developing, or incorporating eco-tourism activities into their livelihoods. As climate change affects fishing profits and coastal ecosystems, ecotourism can emerge as a dual solution, offering new livelihood options (e.g., scuba-diving tours of coral reefs) and incentivizing ecosystem health monitoring practices.
104. **Collaborative MPA Management:** Providing equipment and supplies to aid national and sub-national governments in expanding and managing MPAs (linked to Component 1). The grantees may undertake interventions like monitoring ecosystems and fisheries, and grants may include monitoring equipment, including buoys, laptops, and remote sensing tools.
105. **Sustainable and Diversified Fishing Livelihoods:** Enhancing community-based economic activities through the grants to build capacity for, or equipment to, facilitate improved fishing practices, aquaculture enterprises, and other sustainable, climate-resilient livelihoods.
106. **Sustainable Waste Management:** Partnering with local organizations and/or private sector entities for enhanced waste management and monitoring, grantee projects will focus on developing waste management plans that respond to the impacts of climate change, training on waste management practices, and data collection practices for monitoring waste management at the local and provincial level. The selected grantees will assess current waste management practices and marine pollution levels, and implement community-led management plans and interventions. Reducing the quantity of waste deposited in coastal ecosystems will improve the food and water security of coastal populations.
107. Detailed information on priority areas of work, target geographies, and eligibility criteria for the Adaptation Grant Window can be found in **Annex 2, Section 6** and **Annex 26**. The number of grants and grant sizes are indicative only and may be adjusted during implementation based on applications received from beneficiary communities and to respond to project needs and priorities. Prior to the formalization of grant agreements, applicants will be subject to a series of pre-award requirements to ensure compliance with GCF, CI and KI policies, risk management standards, and applicable safeguards.

Thematic Area/Grant type description	Number of grants	Indicative Grant size (USD)	Indicative total (USD)	Cycle
2.1.1.1. Ecotourism development	4	Large (From 40,001 and up to 400,000)	1,600,000	On-cycle applications
	3	Small (Up to 40,000)	120,000	On-cycle applications
	2	Small (Up to 40,000)	80,000	Off-cycle applications
2.1.1.2. Collaborative MPA Management	4	Large (From 40,001 and up to 400,000)	1,600,000	On-cycle applications
	5	Small (Up to 40,000)	200,000	On-cycle applications
	2	Small (Up to 40,000)	80,000	Off-cycle applications
2.1.1.3. Sustainable and Diversified Fishing Livelihood	3	Large (From 40,001 and up to 400,000)	1,200,000	On-cycle applications
	3	Small (Up to 40,000)	120,000	On-cycle applications
	2	Small (Up to 40,000)	80,000	Off-cycle applications
2.1.1.4. Sustainable Waste Management	3	Large (From 40,001 and up to 400,000)	1,200,000	On-cycle applications
	3	Small (Up to 40,000)	120,000	On-cycle applications
	2	Small (Up to 40,000)	80,000	Off-cycle applications
Total			6,480,000	

Table 4: *Indicative Climate Adaptation Grants to be issued under Window 1*

Output 2.2 Blue carbon and renewable energy projects are effectively implemented and monitored, resulting in reduced GHG emissions

108. Grants issued under the Mitigation Grant Window (Grant Window 2) will support low-carbon, climate resilient development pathways to enhance the climate change mitigation capacity of marine ecosystems in WPP 572. This grant window will primarily target projects that address restoration and rehabilitation of mangroves and seagrass beds, and renewable energy deployment in local communities.
109. **Activity 2.2.1 Deploy grants to improve ecosystems and achieve sustainable climate change mitigation impact.** KI will issue approximately \$3.52M in grants in two thematic areas: ecosystem restoration and deployment of renewable energy interventions. The Activity includes the following sub-activities:
- Sub-Activity 2.2.1.1 Manage grants for high carbon ecosystem restoration.
 - Sub-Activity 2.2.1.2. Manage grants for small-scale renewable energy deployment/installation.
 - Sub-Activity 2.2.1.3. Provide technical assistance and support to mitigation grantees on cross-cutting subjects (including GEDSI and Safeguards)
 - Sub-Activity 2.2.1.4. Monitor mitigation grant window performance
110. KI will issue a call for proposals, provide capacity building and technical assistance to all grantees who require support on preparing grant applications with support from Penabulu (a Technical Partner), lead and manage the grant selection process (along with the Grants Committee), conduct due diligence on applicants, enter into sub-grant agreements with successful applicants, and perform grant management and oversight for grants issued under the Mitigation Grant Window (see details in the “Grant cycle” section and logframe sub-activities). Penabulu will provide capacity building to sub-grantees during implementation and will oversee a learning process for each project under the grant window to improve projects funded under this grant window. KI will also engage specialized technical consultants via a contract agreement to support the selection process and monitoring of grants under Window 2.
111. The Mitigation Grant Window will focus on projects in two priority areas of work, identified based on consultations and vulnerability analyses (see **Annexes 2, 7, and 22**):
112. **Nature restoration:** Restoration and rehabilitation of seagrass and mangrove ecosystems in WPP 572. Grant projects in this thematic area will focus on interventions that retain and increase the ability of ecosystems to provide carbon sequestration and other ecosystem services (fish breeding grounds, reduction in coastal inundation) needed for low-carbon development. Grantees under this window could undertake the following indicative interventions: (1) collecting data on the existing extent and health of ecosystems (baseline assessments informed by remote sensing, site-visits to collect samples in known locations), data processing, remote sensing; (2) developing ecosystem restoration and/or conservation plans in each of the relevant ecosystems; and (3) undertaking on-the-ground restoration and/or conservation work based on these plans. The mitigation window will seek to ensure that ecosystems are sufficiently restored and healthy for economic activities such as eco-tourism and other investable economic activities to be supported through the Investment Readiness Window.
113. **Renewable energy deployment:** Deployment of renewable energy technologies, targeting local communities. Projects will deliver renewable energy equipment (e.g. solar panels), equipment that runs on renewable energy (e.g. ice production units for fish processing), and training on the use and maintenance of renewable energy equipment and hardware. These grants will improve livelihoods by increasing fish catch value and reducing loss and waste.
114. The Mitigation Grant Window will apply mitigation-related eligibility criteria to ensure contributions to the Project's overall GHG mitigation targets (see **Annex 22**). However, technology deployment grants made within this window will not contribute significantly to Project GHG targets as the contribution in tonnes of CO₂e are small. The grants are cross-cutting, contributing both to improved livelihoods due to reduced loss of fish catch and a small contribution to the Project's GHG mitigation targets.
115. A needs-based approach prioritizes areas with the highest mitigation potential while also addressing climate adaptation considerations including livelihoods benefits and disaster risk reduction for coastal communities. Detailed information on priority areas of work, target geographies, target populations, and eligibility criteria for the Mitigation Grant Window can be found in **Annex 26**.

Thematic Area/Grant type description	Number of grants	Indicative Grant size (USD)	Indicative total (USD)	Cycle
2.2.1.1. Nature Restoration	4	Large (From 40,001 and up to 400,000)	1,600,000	On-cycle applications
	7	Small (Up to 40,000)	280,000	On-cycle applications
	2	Small (Up to 40,000)	80,000	Off-cycle applications
2.2.1.2. Renewable Energy Deployment	3	Large (From 40,001 and up to 400,000)	1,200,000	On-cycle applications
	7	Small (Up to 40,000)	280,000	On-cycle applications
	2	Small (Up to 40,000)	80,000	Off-cycle applications
Total			3,520,000	

Table 5: Indicative Climate Mitigation Grants to be issued:

116. BEAM's mitigation contributions are distributed across multiple activities under both Components 1 and 2. BEAM's mitigation framework targets emissions reductions from the protection and restoration of blue carbon ecosystems (mangroves and seagrass) in WPP 572. The mitigation framework consists of three interconnected intervention pathways: (i) Policy and regulatory strengthening (Activity 1.1.1, Sub-Activity 1.1.1.2) which improves MPA management effectiveness and reduces ecosystem loss; (ii) Community-based adaptation grants (Activity 2.1.1, Sub-Activities 2.1.1.1, 2.1.1.2, 2.1.1.3) which reduce pressure on blue carbon ecosystems through alternative livelihoods and collaborative management; and (iii) Direct ecosystem restoration and renewable energy application (Activity 2.2.1, Sub-Activities 2.2.1.1, 2.1.1.2) which restores degraded mangroves and seagrass beds, sequestering additional carbon, and application of renewable energy technologies. The methodological chain, including baseline establishment, project boundary definition, additionality assessment, quantification methodologies, and MRV arrangements, is presented below and is detailed in Annex 22.

Element	Activity 1.1.1	Activity 2.1.1	Activity 2.2.1
Emission Source/Sink	Avoided loss of mangroves and seagrass	Avoided loss of mangroves and seagrass	Enhanced sequestration from restored mangroves and seagrass
Baseline Scenario	Historical loss rate for mangroves and seagrass in intervention areas	Historical loss rate for mangroves and seagrass in intervention areas	No restoration (BAU)
Project Boundary	Spatial: existing and expanded MPAs in WPP 572; Operational: policy and enforcement improvements	Spatial: MPA areas and 10km buffer; Operational: community-led conservation activities	Spatial: selected restoration sites; Operational: replanting, nursery development, rehabilitation
Additionality	Regulatory and financial barriers prevent MPA effectiveness without BEAM; co-financing and technical assistance are essential	Community lack of access to finance and capacity; grants are essential for interventions	High upfront costs and limited private sector interest; grants are essential
Methodology	Tier 2 IPCC Wetlands Supplement (2013) with country-specific emission factors; GIS-based extent monitoring	Same methodology as Activity 1.1.1 with effectiveness index applied to intervention areas	Tier 2 IPCC Wetlands Supplement (2013) for restoration; direct measurement of sequestration
MRV Arrangements	MPA management effectiveness (EVIKA) tool, remote sensing; independent verification	Grantee reporting; remote sensing; field surveys; independent verification	Grantee reporting; remote sensing; field surveys; independent verification

Quantified Results (End of 6 Years)	98,680 tCO ₂ e	365,534 tCO ₂ e	19,108 tCO ₂ e
Quantified Results (20-year lifespan)	298,028 tCO ₂ e	848,975 tCO ₂ e	151,899 tCO ₂ e

Table 6: Summary of Climate Mitigation Framework Elements:

Output 2.3: Blue economy enterprises have improved access to finance and expand operations in WPP572

117. **Activity 2.3.1 Improve the Investment Readiness of the Blue Economy.** This activity supports blue economy enterprises in WPP 572 by addressing two critical barriers: the supply-side constraint limiting small-scale fishers' and fish farmers' access to affordable microcredit, and the knowledge gap that currently deters investor capital allocation to WPP572. To address these barriers, the Project deploys two complementary interventions: technical assistance to strengthen BLU LPMUKP's institutional capacity to make concessional loans in WPP 572 and beyond; and action-oriented blue economy research to generate the market intelligence needed to attract and guide private investment into the region.
118. The Project will provide technical assistance to BLU LPMUKP, targeting operational improvements to the Marine and Fisheries Business Capital Management Agency (BLU LPMUKP), MMAF's microcredit provider for the fisheries sector. Current outreach is constrained by a shortage of extension officers relative to the geographic scale of the region, complex paper-based loan procedures that are prohibitive for remote fishing communities, and the absence of an integrated digital system to manage the loan pipeline at scale. In line with BLU LPMUKP's recent shift in origination strategy, the institution is increasingly prioritizing established marine and fisheries cooperatives as aggregators, through which financing can be channeled to cooperative members, including during off-season income gaps. Activity 2.3.1 will engage a service provider to conduct a diagnostic assessment of BLU LPMUKP's process, design and implement an end-to-end IT-based loan management system, and train staff on simplified disbursement methods – directly increasing BLU LPMUKP's institutional capacity to identify, process and approve loan applications from WPP 572 enterprises. The diagnostic analysis will also assess whether current loan terms (repayment schedule, collateral requirements) match the needs of small-scale capture fisheries, and the feasibility of a limited extension-outreach pilot to address BLU LPMUKP's current staffing constraints, with a scale-up/transition decision to be made a mid-term review. This technical assistance strengthens BLU LPMUKP's existing client promotion and outreach function – already delivered through its extension offices, accompanied-lending model, and partnerships with local microfinance intermediaries – by expanding staff capacity and improving the systems and procedures that support it.
119. BLU LPMUKP is the government's primary microcredit provider for the marine and fisheries sector, offering subsidized working capital and investment loans ranging from IDR 30 million to IDR 1 billion (USD 1,700 – 56,000) with a loan tenor of 1 – 8 years to eligible MSMEs across marine sectors, including capture fisheries, aquaculture, fish processing, salt production, ecotourism, and other coastal livelihoods. Currently, loans carry a flat interest rate of up to 3% per annum – well below commercial lending rates – plus a one-time provision fee of 1.5% of the loan value, with total charges capped at 4% per annum in accordance with prevailing regulations. There is a current underservice of WPP572 provinces, reflecting a supply-side institutional bottleneck, not a lack of demand: fishers and MSMEs in WPP 572 need and want affordable credit, but are excluded by complex paper-based application procedures that are prohibitive for remote communities, and the absence of a digital system to manage the loan pipeline at scale.
120. With BEAM technical assistance, BLU LPMUKP will develop a digitized loan management platform, streamline its application workflows, and train extension officers on simplified disbursement methods. The expected outcome is a measurable increase in BLU LPMUKP's institutional capacity to process loan applications from WPP 572, expanding access to formal financial services for small-scale fishers and fish farmers who currently rely on informal lenders at significantly higher rates. Improved digital portfolio monitoring will also enable BLU LPMUKP to identify and respond to early warning signs of loan distress more effectively. The Project will further strengthen the pipeline by working with fishers collectives and MSMEs supported under the adaptation and mitigation windows of Component 2 to access BLU LPMUKP loan finance – creating a direct link between BEAM's conservation and livelihood interventions and formal financial inclusion.

121. The Project will also fund the development of action-oriented blue economy research on topics such as market segmentation of blue economy enterprises in WPP 572, sectoral analysis and business plan validation, the enabling of fisheries cooperatives, and marine tourism investment roadmaps. These papers will address critical knowledge gaps that currently deter investor capital allocation and will be actively disseminated to stakeholders within government, financial institutions, and industry.
122. KI will implement this Activity by procuring specialized service providers for the BLU LPMUKP technical assistance and for the research papers. All support will be delivered through in-kind contributions or service contracts directly procured by KI, in compliance with KI, CI, and GCF requirements. The sub-activities include:
- Sub-Activity 2.3.1.1 Provide technical assistance to BLU LPMUKP
 - Sub-Activity 2.3.1.2. Develop action-oriented research papers on sustainable blue economy themes
 - Sub-Activity 2.3.1.3. Monitor investment readiness intervention performance

BEAM Grant Cycle:

Figure 8: KI Grant cycle process to administer grants (detailed information can be found in **Annex 2, Section 6**)

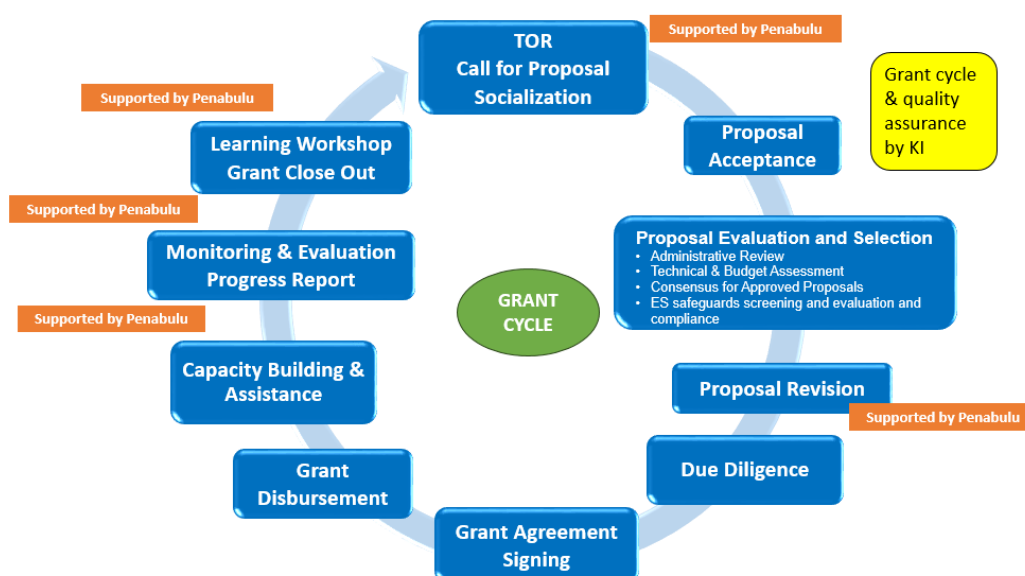
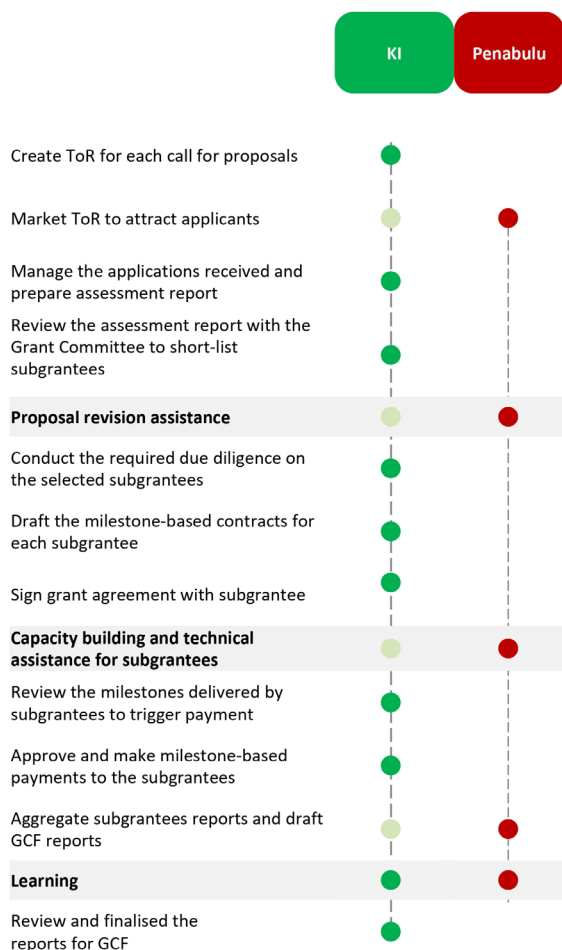


Figure 9: BEAM Technical Partner Penabulu will provide technical support to KI in the implementation of Component 2 Windows 1 and 2 according to their expertise and the needs of grantee organizations (described in **Annex 2, Section 6**).



B.4. Implementation arrangements (max. 1500 words, approximately 3 pages plus diagrams)

National Designated Authority and Government Partner

123. Indonesia's Director General of Financial Sector Stability and Development at the Ministry of Finance (DJSPSK – *Direktorat Jenderal Stabilitas dan Pengembangan Sektor Keuangan*) is the GCF National Designated Authority as of August 2025. The NDA ensures that activities implemented by the Project align with strategic national objectives, priorities, and standards, and help advance ambitious action on adaptation and mitigation in line with country programming, national goals, and needs. The EE will engage with the NDA throughout Project implementation through consistent reporting on Project progress and to solicit feedback and guidance based on GoI priorities. The NDA will also support BEAM through disseminating information (e.g., website) of call proposal openings of the grant facility under Component 2 and knowledge of product dissemination. Indonesia's Ministry of Marine Affairs and Fisheries (MMAF) will be the lead technical ministry as this Project supports MMAF's long-term priority programs (i.e. MPA Vision 30x45, coastal waste management, and quota-based fisheries). MMAF will act as Chair for the technical and steering committees to provide valuable guidance to the EE.

Accredited Entity

124. Conservation International Foundation (CI), through its CI-GCF Agency, will serve as the Accredited Entity (AE) for the Project. The CI-GCF Agency will be responsible for the overall oversight of this project, as defined in the Accredited Master Agreement (AMA) between the GCF and CI, including technical, financial, and administrative monitoring and supervision (through reporting, audits, and annual site visits) and review and approval of the EE's

annual workplans and budgets. CI-GCF will also be responsible for providing support and guidance to the EE as mutually agreed; monitoring the achievement of Project results and Outputs; reporting to the GCF; and project closure and evaluation. CI-GCF will conduct these responsibilities, and disburse GCF funds to the EE, in line with CI's AMA with the GCF. The CI-GCF Agency serves as AE for three GCF projects currently under implementation, FP158, FP235, and FP259.

Executing Entity

125. Konservasi Indonesia (KI) will be the Executing Entity for the BEAM Project. The EE will be responsible for the following: Project execution and management; monitoring of subsidiary agreements of sub-grantees and service providers receiving GCF funds and their related activities; reporting to the AE; and collaborating with the GoI partners to optimize alignment of their respective components with national and regional climate policy priorities to achieve Project outcomes and GCF-level goals, and sustainability of Project interventions. The EE will also participate in the PMU and governance arrangements, as described below.
126. KI will serve as the EE for the Project. It will also participate in the BEAM grant selection committee, Project Steering Committee (PSC), Project Technical Committee (TC) and PMU; and provide all required reporting to the AE.
127. KI is a national foundation, independently registered organization in Indonesia (Yayasan) that supports the sustainable development and protection of critical ecosystems and is CI's main delivery partner in Indonesia. KI focuses on three main areas: 1) maintaining climate stability through nature conservation; 2) conserving marine and fishery resources; and 3) implementing an environmentally friendly approach in economic development. KI partners with GoI, indigenous communities, companies, academia, media, and CSOs to achieve sustainable development in Indonesia. KI has extensive experience of working on fisheries and marine management issues and has an office in WPP 572. KI has a successful track record of managing the disbursement of funds to local NGOs, community groups, and research institutions for marine conservation, livelihood development, and climate resilient initiatives.
128. KI established and supports the Blue Abadi Fund, a conservation trust fund devoted to the preservation of the Bird's Head Seascape MPA networks. It also provides capacity building to government, local communities and NGO partners on MPAs to strengthen local economies through tourism and establishing MPA sustainable financing mechanisms. KI is also the convening agent for the Global Fund for Coral Reefs that, in partnership with CI Ventures, created financial instruments to support coral reef conservation and mobilize recoverable grants to reef-positive businesses in sectors including reef fisheries, aquaculture, mariculture, ecotourism, restoration, blue carbon, and waste management. To date, five companies have been supported through this instrument to improve seaweed mariculture, mud crab, shrimp, and lobster aquaculture. KI, with CI and other partners, is also currently developing the Climate Smart Shrimp Fund that will fundraise and mobilize capital for farmers to transform shrimp ponds into integrated mangrove restoration areas and intensive ponds. More broadly, KI has received and successfully managed donor funds from foundations, NGOs, United Nations agencies, bilateral public donors and international corporations. Since 2025, KI currently serves as the Administrator for the TFCCA (Tropical Forest and Coral Reefs Conservation Act) program, the first debt for nature swap amounting US\$35M for coral reef conservation in Indonesia. The TFCCA funds focus on three key geographies in eastern Indonesia, including the Bird's Head Seascape, the Lesser Sunda Seascape, and the Banda Seascape. As Administrator, KI oversees a transparent and competitive grant-making process, issuing grants to qualified local and national civil society organizations through open calls for proposals, supported by technical review, fiduciary screening, and ongoing oversight.
129. The AE has assessed the capacity of KI and has determined that they are capable of applying CI and GCF policies in the execution of this Project. The AE will enter into a Subsidiary Agreement with the EE for execution of Project activities, in accordance with the FAA and AMA. Accountability for the use of financial resources will be assured through the AE's monitoring of the project, including quarterly and annual financial reporting, site visits, and financial audits.

Project Management Unit

130. The PMU will be based in Jakarta, Indonesia, headed by a full-time BEAM Project lead employed by KI, who will be responsible for coordination with all stakeholders and successful implementation of the Project and attainment of the results specified in the project's funding proposal, to the required standards of quality and within the specified

constraints of time and cost. The PMU will be responsible for overall project management and planning, providing support to the execution of day-to-day activities, coordinating with the national government and project partners, and coordinating with the AE. The PMU will also include full-time staff employed by KI for Project-wide functions, such as project M&E, gender, safeguards, and finance. KI is the legal entity responsible for establishing, hosting and managing the PMU.

131. Additional Project staff employed by KI will be responsible for executing Components 1 and 2 of the Project, as detailed in **Annex 4 and Annex 23**. CI global staff will provide subject-matter expertise and support to KI as its delivery partner in the region. KI and the relevant CI divisions—which both follow all CI policies and procedures—will enter into an appropriate contractual agreements for this support (see **Annex 23**).
132. The PMU will check application completeness and eligibility. KI's Safeguards Specialist will screen eligible proposals, confirm the risk category, and review required safeguards instruments before Grant Committee consideration. The Grant Committee will assess the safeguards, technical, and fiduciary recommendations before approval. The PMU will cover safeguards, GESI, M&E, grievance management, reporting, incident response, and corrective actions.

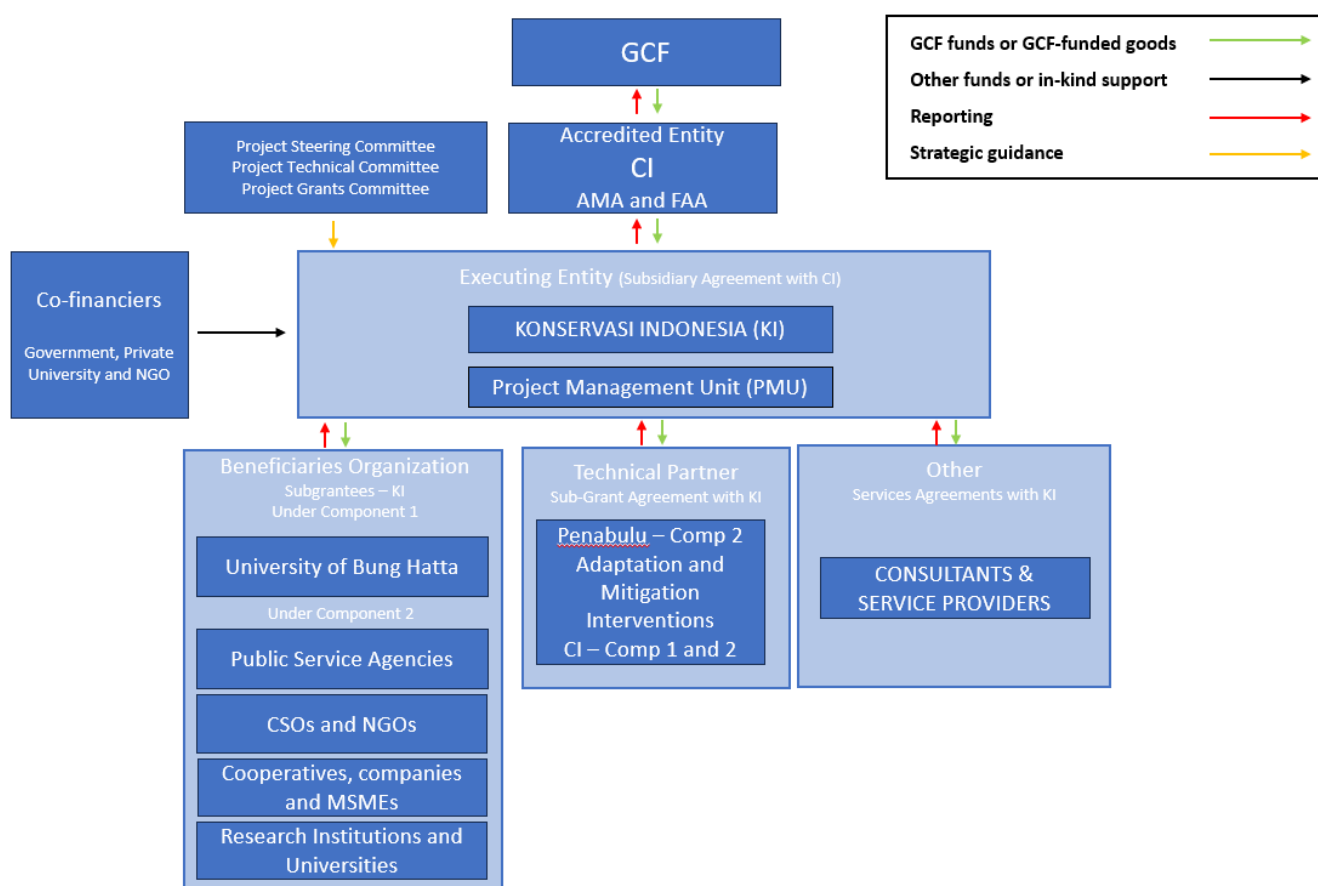


Figure 10: Project implementation arrangements and financial flows (more detail available in **Annex 23**)

Implementing Partners

133. As the EE, KI will engage with an array of Implementing Partners (IPs) to support implementation of Project activities or sub-activities. Of these IPs, KI will provide GCF resources to Technical Partners, Beneficiary Organizations, and other Service Providers (collectively, “sub-awardees”) in compliance with GCF requirements. KI may also coordinate with implementing partners who do not receive GCF funds or resources like the Ministry of Marine Affairs and Fisheries.
134. The EE will provide GCF funding to procured parties (subgrantees and services providers, collectively, “sub-awardees”) supporting project implementation in compliance with EE, CI, and GCF requirements for sub-awards.

During identification, and before entering into agreements, the EE will undertake due diligence of sub-grantees and services providers, and funds will be administered in accordance with EE procedures as approved or modified by the AE, to meet GCF requirements. KI will engage sub-grantees via sub-grant agreements or the equivalent which outline activities, deliverables, timetable, monitoring, assessment, and compliance requirements. Service providers will be engaged using the approved procurement policies and procedures of the EE (which CI assessed to meet GCF requirements).

Technical Partners

135. KI will engage Penabulu as a Technical Partner organization to support the implementation of Component 2 (see Annex 23). For Grant Windows 1 and 2, Penabulu will provide technical and management support for delivering capacity building and technical assistance to sub-grantees, including training on proposal development, project management, organizational strengthening, safeguarding, and grant management. Penabulu, under the guidance and direction of KI, will also develop training curricula, provide ongoing mentoring throughout the grant cycle, and support KI on monitoring and evaluation. In implementing the on-granting mechanism under Component 2, KI conducts a capacity assessment for all prospective grantees as part of the due diligence process. The depth of assessment is differentiated by grant size: small grants (up to USD 40,000) undergo streamlined desk review, while large grants (up to USD 400,000) undergo more comprehensive assessment, including on-site verification where required. Assessment results inform grant award decisions, determine monitoring frequency, and identify capacity gaps requiring targeted support. Recognizing that the large-grant category spans from USD 40,001 to USD 400,000 (there could be exceptions above this threshold which will be reviewed on a case-by-case basis according to the Grants Manual) and may therefore represent significantly different levels of financial management and implementation complexity, sub-grantees transitioning from small to large grants will receive dedicated transition support based on both the grant amount and the sub-grantee's capacity assessment. This graduated approach ensures that organizations build capacity commensurate with their grant size, reducing fiduciary and implementation risks while fostering institutional growth. KI will retain responsibility for safeguards clearance and grant approval.
136. KI will enter into a grant agreement with Penabulu, which will include contractual terms to ensure compliance with KI, CI, and GCF requirements, including safeguards and prohibited practices. KI will manage and monitor Penabulu's performance throughout project implementation and will retain ultimate approval authority over its activities, including annual workplans and budgets.
137. Penabulu, an Indonesian NGO, will support KI in the implementation of Grant Windows 1 and 2. Penabulu has a track record of more than two decades of strengthening the financial management of non-profit organizations. Its Grant Management division has extensive experience of mobilizing and managing grant funds and providing thematic training, technical assistance and organizational capacity building to partners to support grants from other donors. Penabulu has received and managed donor funds from foundations, NGOs, bilateral, and multilateral public donors.
138. In limited circumstances, CI may provide technical assistance on safeguards, gender, grantee management, legal and security to the Project in its capacity as an Implementing Partner. Where such support is required, KI will enter into a grant agreement with CI for the delivery of clearly defined activities. Any such arrangements will be subject to the same fiduciary controls, reporting requirements, oversight mechanisms, procurement standards, and conflict-of-interest management measures applied to other project implementing partners. These arrangements are distinct from CI's role as the Accredited Entity and do not alter the overall accountability framework under which KI remains responsible for Project execution.

Co-financiers

139. The Project includes direct co-financing contributions from the national government (MMAF), four provincial governments, the University of Bung Hatta, and KI. All co-financiers have distinct legal personality and are able to enter into appropriate co-financing arrangements with KI. These co-financing arrangements will be established by KI with each co-financier to formalize their commitment and to ensure reporting of co-finance contributions.

Beneficiary Organization Grantees

140. Under Component 2, KI will also provide GCF funding to Beneficiary Organization Grantees through their respective Grant Windows of the BEAM Granting Facility under Outputs 2.1–2.3 of Component 2. Grantees will be competitively selected via the relevant eligibility criteria detailed in **Annex 26**, and grants will be administered as described in the

“Grant Cycle” section of **Annex 2 and Annex 27**. Eligible beneficiary organizations include public service agencies; local, regional, national or international NGOs and CSOs; universities and research organizations; and private sector MSMEs. Under Component 1, the University of Bung Hatta will be engaged by KI via a grant agreement as a Beneficiary Organization Grantee.

141. KI, as applicable, will enter into a grant agreement with each Beneficiary Organization Grantee that will include contractual terms to ensure compliance with KI, CI, and GCF requirements. KI will manage and monitor these sub-grants and will approve grantees’ workplans and budgets.

Service Providers

142. KI will procure additional consultants, vendors, and service providers to support the implementation of their respective Project activities (see **Annexes 2, 4, 23, and 10** for more details). The EE will follow CI procurement policies, supplemented with additional procurement terms as required by the AE to meet GCF standards in procuring these goods and services and will enter into a service agreement with each contracted entity.

Other Implementation Partners

143. As described in Section B.3, some partners will contribute to the implementation of the Project but will not receive GCF resources. KI will coordinate implementation of the Project with these implementation partners (detailed in **Annex 23**) and will enter into agreements with them as appropriate to ensure clarity on the roles and responsibilities of each party.

Project Governance

144. The Project’s governance structure includes the Project Steering Committee (PSC), Technical Committee (TC), and Grants Committee. Government employees sitting on these committees will not be remunerated by GCF funds for their participation.
145. The PSC will be composed of representatives from GoI and appointed stakeholders. It will provide strategic guidance to the EE, support adaptive management of Project implementation, review progress and evaluation reports, discuss problems or strategic issues that might arise during implementation, and provide support for the necessary inter-institutional coordination and contributions to Project activities. Government representatives on the PSC may also invite key stakeholders or advisors to support relevant elements of the Project.
146. The PSC will hold annual meetings, beginning in Year 1, to review Project progress and to advise the BEAM Project Lead on strategic and policy-related decisions. Ad hoc meetings of the PSC may also be convened at the request of one of its members. The PSC may adopt its own rules of procedure, if appropriate, and will follow mutually agreed terms of reference that will be developed in Year 1 of the Project. The PMU will provide logistical and administrative support to the PSC. The Project’s annual reports will be shared with PSC members by the EE and will be made freely available to GoI departments. The PSC will be comprised of representatives of the following entities: Ministry of Marine Affairs and Fisheries (MMAF), the Coordinating Ministry for Food Affairs (CMFA), Bappenas, Ministry of Home Affairs, Ministry of Environment.
147. The TC will provide expertise and guidance to the EE and ensure technical coordination with GoI agencies. The TC will oversee the Project to guarantee its alignment with national strategies. The TC will specifically support the EE in guiding Project activities and will serve as a communication channel to support the implementation of activities, particularly with government agencies.
148. The TC will meet twice a year to provide direction for activity implementation, stimulate stakeholder buy-in, and provide feedback on GoI policies and pronouncements. The TC will be comprised of representatives of the following entities: MMAF, CMFA, Bappenas, Ministry of Finance, the Ministry of Environment, Ministry of Home Affairs, Provincial Governments in WPP 572, and KI.
149. The Grants Committee will review and select the sub-grant project proposals for the BEAM grant windows under Component 2 of the project, with KI providing final approval authority as EE. The Grants Committee will consider and approve the assessments and recommendations of the first-level review of grantees carried out by KI and Technical

Partners. The Grants Committee, through the participation of the EE, will make funding decisions to select an appropriate balance and selection of grantees to ensure achievement of overall BEAM targets as described in the logical framework; ensure access to BEAM funding for women-led organizations; ensure participation by indigenous communities and other marginalized groups; and ensure that all selected grantees are compliant with CI, GCF, and EE policies, particularly ESS. Please see **Annex 26** for more information on Eligibility Criteria.

150. The Grants Committee will include representatives from KI and national ministries. It will also include representation of subject matter experts from universities and research institutions to ensure that the selection, supervision and implementation of grants are informed by the latest academic research and expertise, fostering innovation and evidence-based decision making. The EE will develop this roster of experts, which will be verified and agreed by the TC. The Grants Committee will be comprised of Project staff from KI along with subject matter experts (e.g. one or two staff from universities/research institutions). Representatives from MMAF and CMFA will also be invited to the Grants Committee meetings. Local community representatives will also be included in the Grant Committee to provide community-level perspectives, transparency, and help ensure that grant decisions remain responsive to local needs and realities. Community representative participation (including women and identified vulnerable groups) will enable relevant feedback on proposed activities, potential social and environmental risks, and community engagement considerations.

B.5. Justification for GCF funding request (max. 1000 words, approximately 2 pages)

151. Analysis of climate exposure, sensitivity risk, and vulnerability profile in WPP 572 shows the imperative to address the escalating impacts of climate change to marine and coastal communities and ecosystems. The coastal economic sectors, particularly fisheries, aquaculture, and tourism which rely on stable and healthy marine ecosystems, are experiencing negative effects from climate change, these impacts are projected to become worse in the future, affecting ecosystems and the human populations that rely on nature for their food, livelihoods, and well-being. Strategies for adapting to these changes and enhancing resilience should be designed and implemented by the communities most affected - funding from the GCF will catalyze and incentivize the creation of a sustainable blue economy that relies on both protection and production to support vulnerable populations in the long term.
152. It is essential to deploy multilateral finance alongside national efforts to bolster infrastructure, engage communities in resilience-building efforts, utilize technology for effective adaptation, and embed climate resilience into comprehensive policy planning. While the Gol has integrated climate resilience into policy planning, provincial and national budgets remain insufficient to finance the necessary adaptation infrastructure, community-based resilience programs, and ecosystem restoration at scale. The private sector, meanwhile, is reluctant to invest due to perceived risks and long payback periods as demonstrated by negative trends in both Domestic Direct Investment and FDI in the fisheries sector in recent years (see Annex 02, Section1). The GCF's grant-based support is critical to bridge this gap, enabling interventions that reduce climate risks while unlocking sustainable blue economy growth.
153. There is a considerable gap between current national spending from Gol's national budget and the resources needed to meet the RPJMN targets for marine ecosystem protection (through MPA creation and management). The Gol currently spends 16.4% of the necessary funding to meet these targets, which is considerable but insufficient to achieve the impact targeted in the RPJMN. MMAF and provincial governments are providing most of the co-financing for the Project, but GCF resources will also unlock investments (target \$20-50M) in blue economy sectors that rely on natural ecosystems and the sustainability of productive fishing areas. While Indonesia's economy is growing, resulting in its recent uplisting to upper-middle income status, sustained support and investment are necessary to avoid setbacks and address threats including climate vulnerability and global political instability – as demonstrated by the recent cancellation of USAID programming. National-level economic categorization masks deep subnational inequalities, particularly in remote coastal and island regions like WPP572. These communities are among the poorest and most climate-vulnerable in the country, with limited access to services, infrastructure, or adaptive capacity. Indonesia's UMIC status reflects macroeconomic progress, but it has not yet translated into widespread private sector confidence in the blue economy, especially in adaptation-focused or ecosystem-dependent ventures. GCF's role is uniquely catalytic, not because Indonesia lacks capital, but because GCF funding can unlock that capital by addressing risk perceptions, market readiness, and institutional capacity. Climate change is already reversing

development gains in vulnerable coastal zones, and without early, concessional investment, the costs of inaction will escalate dramatically. The GCF's grant-based support is essential to ensure that Indonesia's economic transition is inclusive, climate-resilient, and equitable.

154. Currently, MPA management costs across Indonesia are estimated to be \$50.7M/yr with the GoI and other international NGO financing contributing \$8.3M/yr. The GCF can play a key role in closing that gap through grant assistance to fund enabling condition interventions, which will directly assist GoI and relevant stakeholders to improve the effectiveness of MPA management, thereby reducing management costs, and developing financial mechanisms and sustainability strategies to ensure that MPAs have the resources they need to manage ecosystem protection and restoration effectively. Private sector investors lack direct incentives to fund public goods like MPAs, but GCF grant-based assistance can deliver a paradigm shift towards self-sustaining MPAs for the people of Indonesia. Under Component 1, BEAM will support national and provincial governments to establish and operationalize Regional Public Service Agency (BLUD) units, which are legally mandated entities that can retain and reinvest revenues for conservation. Through Activity 1.1.1, the project provides technical assistance to strengthen regulatory and institutional frameworks, enabling MPAs to generate and manage revenue streams (e.g., tourism fees, ecosystem services) and reinvest them into site-level management. This reduces reliance on external funding and lays the foundation for financially self-sustaining, resilient MPAs.
155. The GoI and Indonesian financial sector (including national banks and private sector actors / creditors) have made considerable strides to establish the country's blue economy, through institutionalization of sustainable financing regulations,^{54,55} and fostering partnerships between ministries and national financial institutions designed to facilitate investments in nature conservation. However, critical gaps remain, particularly in WPP572, that hinder the full realization of a climate-resilient, sustainable blue economy in Indonesia. These gaps persist due to structural limitations in public funding, low private sector capacity which deters investment, and a lack of solutions that explicitly de-risk investments while scaling ecosystem protection. This GCF intervention is essential to address these challenges, as neither the government nor the private sector can mobilize sufficient capital under current conditions.
156. The main financing instruments used in Indonesia's blue economy sector are loan-based. However, their uptake remains severely limited, particularly for small-scale fishers and fish farmers in WPP 572. Commercial banks perceive high risks in lending to remote, informal, climate-exposed communities, while existing government microcredit schemes, such as those offered by BLU LPMUKP, struggle to reach their intended beneficiaries. BLU LPMUKP provides subsidized loans (~3% per annum) to marine and fisheries MSMEs, but its outreach is constrained by complex paper-based procedures and the lack of an integrated IT system, resulting in low disbursement absorption and limited access for vulnerable coastal groups. GCF grant funding is essential because neither commercial banks (which avoid high-risk, low-return microcredit) nor the government budget alone (which cannot cover the upfront costs of digitization, training, and process redesign) can address these operational barriers.
157. A commercial loan to BLU LPMUKP would be inappropriate, as the agency operates on a not-for-profit mandate with subsidized rates, and any additional debt would undermine its affordability objective. GCF grants will directly finance the development of a digital loan management system, streamlined disbursement protocols, and extension officer training, enabling BLU LPMUKP to channel affordable credit to thousands of previously unreached small-scale fishers and fish farmers. This support is highly catalytic: once the system is operational, BLU LPMUKP can sustainably recycle loan repayments into new lending, multiplying the impact of the initial GCF investment without ongoing donor support. Without such technical assistance, the existing financing gap for small-scale blue economy actors will persist, perpetuating reliance on predatory informal lenders and limiting climate resilience

Scaling logic, financing flows and long-term sustainability

158. BEAM is designed not as a stand-alone grant program, but as a catalytic intervention that establishes the institutional, financial, and market foundations required to sustain and scale climate resilience investments beyond the Project period. The Project's scaling strategy operates at three mutually reinforcing levels: (i) institutional scaling through

⁵⁴ POJK (OJK Regulation) No. 51/POJK.03/2017 (Ketentuan mengenai Keuangan Berkelanjutan / OJK Regulation on Sustainable Finance-P51/2017); POJK (OJK Regulation) No. 60/POJK.04/2017 Green Bond/OJK Regulation on Green Bond issued by private banks or financial institutions.

⁵⁵ In January 2005, Bank Indonesia issued Regulation No.7/2/PBI/2005 on Asset Quality Rating for Commercial Banks. This regulation requires banks to appraise the "measures taken by the debtor to conserve the environment" as part of an assessment of the debtor's business prospects.

government systems and policies; (ii) financial scaling through sustainable financing mechanisms and increased capital mobilization; and (iii) geographic scaling through replication across other Fisheries Management Areas in Indonesia.

159. At the institutional level, BEAM invests in permanent government systems rather than temporary project structures. Through Activity 1.1.1, the Project supports regulatory reform, MPA expansion, fisheries management improvements, and the development of innovative financing mechanisms that will continue to operate after GCF funding has ended. Support to Regional Public Service Agencies (BLUDs), improved MPA governance systems, strengthened Public-Private Partnership (PPP) frameworks, and enhanced fisheries management plans are expected to become embedded within government planning and budgeting processes. Similarly, Activity 1.1.2 strengthens national and provincial fisheries data systems, stock assessment processes, and adaptive management mechanisms, creating long-term institutional capacity that supports climate-responsive management beyond the Project implementation period.
160. At the financial level, the Project creates a transition from external grant finance toward sustained domestic and private-sector financing. GCF grants are used to address market failures and investment barriers that currently prevent capital from flowing into conservation, adaptation, and sustainable blue economy activities. Through Activity 1.1.1, BEAM supports the development of sustainable financing mechanisms for MPAs and ecosystem management, including improved revenue retention through BLUD structures, tourism-related revenues, ecosystem-service financing opportunities, and PPP arrangements. These mechanisms create recurring revenue streams that can finance ecosystem protection and management long after Project completion. Consequently, GCF funding is not intended to permanently finance MPA management, but rather to establish the conditions under which MPAs can progressively become financially self-sustaining.
161. The Project creates a financing continuum for local enterprises and communities. Adaptation and mitigation grants provide early-stage support for community organizations, cooperatives, and MSMEs that are typically unable to access traditional financing due to limited capacity, high perceived risk, or lack of collateral. These grants allow beneficiaries to test climate-resilient business models, establish operational track records, build organizational capacity, and develop investment-ready projects. Through Activity 2.3.1, beneficiaries are then connected to BLU LPMUKP's concessional credit facilities, creating a pathway from grant funding to sustainable loan financing. As BLU LPMUKP modernizes its lending systems and expands outreach, loan repayments will be recycled into future lending, creating a revolving financing mechanism that continues generating impact beyond the Project lifespan.
162. BEAM also addresses barriers that currently constrain larger-scale investment in WPP 572. The Project's blue economy research, market intelligence products, investment roadmaps, and cooperative development support reduce information asymmetries and perceived investment risk. These interventions are expected to facilitate additional investment into sustainable fisheries, mariculture, ecotourism, and other blue economy sectors. By improving the enabling environment, generating investment-ready opportunities, and strengthening financial intermediation, BEAM establishes the conditions necessary for significantly greater capital mobilization over time than can be achieved through grants alone.
163. BEAM's geographic scaling strategy is supported by the national nature of many Project Outputs. Regulatory reforms, PPP frameworks, fisheries management approaches, financing mechanisms, and knowledge products developed under Component 1 are intended for application beyond WPP 572. Activity 1.1.3 establishes a formal knowledge management and learning platform with government and university partners to document lessons learned, disseminate best practices, and support replication in coastal communities and other Fisheries Management Areas across Indonesia. As a result, WPP 572 serves as a demonstration landscape for Indonesia's protection-production model, with successful approaches expected to inform future government, donor, and private-sector investments nationwide.
164. Taken together, these sustainability mechanisms create a clear financing and scaling pathway in which GCF funding initially addresses critical market and institutional failures, government systems and financing mechanisms progressively assume greater responsibility for implementation, private and concessional finance expand as risks decline, and successful models are replicated nationally. This approach ensures that project benefits continue beyond the grant period and that climate resilience, ecosystem protection, and sustainable blue economy investments can be sustained and scaled over the long term.

Justification for prioritizing blue carbon interventions:

165. The BEAM Project prioritizes blue carbon interventions, mangroves and seagrass conservation and restoration, based on a multi-faceted evidence base that considers carbon value, co-benefits, policy alignment, feasibility, and the project's core approach of "protection-production". WPP 572 contains approximately 36,000 ha of mangroves and 24,854 ha of seagrass beds (Annex 2, Section 2), representing a large, accessible, and rapidly deteriorating carbon stock. In addition, healthy mangroves and seagrass deliver broad co-benefits beyond carbon sequestration, including coastal protection, fish nursery habitats, biodiversity conservation, and livelihood support for vulnerable coastal communities, directly contributing to adaptation objectives and social and environmental co-benefit indicators. Blue carbon interventions also directly align with Indonesia's national policy priorities, including the Enhanced NDC, FOLU Net Sink 2030, MPA Vision 30x45, and National Blue Economy Strategy, ensuring complementarity with government programs and securing long-term country ownership.
166. Alternative mitigation pathways such as offshore renewable energy, green shipping, or industrial aquaculture decarbonization face substantial technical, regulatory, and financial barriers in WPP 572, where the blue economy is dominated by MSMEs with limited access to capital and markets, and existing microcredit schemes are underutilized due to operational constraints. Blue carbon interventions maximize mitigation impact, deliver extensive co-benefits, align with national strategies, respect regional feasibility constraints, and reinforce the protection-production approach, making them the most effective, efficient, and sustainable use of GCF resources for achieving the Project's climate goals.
167. The additionality of BEAM's mitigation outcomes is demonstrated across multiple dimensions. Regulatory additionality arises because BEAM provides technical assistance, capacity building, and policy support that address documented regulatory gaps, where less than 2% of WPP 572 has been legally designated as MPA despite existing mandates, and MPA management effectiveness remains low due to inadequate financing and capacity. Financial additionality is demonstrated by the high upfront costs of ecosystem restoration (USD 4,730-4,825/ha for mangroves; USD 66,944/ha for seagrass), limited access to concessional finance for coastal communities, and insufficient government budget allocations, with BEAM's grant funding filling a financing gap that neither the government nor the private sector can currently address. Technological additionality is evident in Sub-Activity 2.2.1.2, where solar-powered chillers require significant upfront capital and technical capacity not currently available to small-scale fishers, with BEAM providing both the capital investment and technical assistance needed to overcome these barriers. Institutional additionality is demonstrated through BEAM's capacity building and institutional strengthening that addresses weak coordination between national and subnational agencies, limited capacity of MPA management units, and lack of community engagement mechanisms. The Project's approach is additional to existing practices in Indonesia, which have typically addressed individual constraints rather than the interconnected regulatory, technical, social, and financial factors that undermine sustainable coastal and marine management.

Grant mechanism:

168. BEAM will facilitate deployment of existing capital and non-grant finance by strengthening Indonesia's blue economy regulations, ensuring the vitality of marine ecosystems, and through direct support to private sector actors. BEAM is designed to optimally deploy grants to support this set of actions because climate adaptation and mitigation activities, including work on marine ecosystem protection and enabling conditions, are not directly financially profitable or bankable. Grants are more suitable to funding such initiatives and BEAM is designed to create a virtuous cycle by directly improving climate resilience in the areas more desired by beneficiaries and mitigating GHG emissions by protecting and conserving key ecosystems, thereby building local capacities and creating an enabling environment that can attract further private sector investments and deployment of non-grant instruments.
169. BEAM will deploy grant assistance now to reduce the costs of ecosystem restoration which will be higher in the future. Scenario modelling analysis compared three rates of natural resource depletion (0%, 1.5%, and 3%) and GDP contributions to blue economy sectors (7% and 12.45%) found that as ecosystems become more degraded the investments needed in the future nearly double, from about USD 121.5 billion per year (0% depletion, 12.45% investment) to about USD 208.3 billion per year (3% depletion, 12.45% investment).⁵⁶ Therefore, investments in ecosystem protection today will not only be cheaper than costs for ecosystem protection in the future but will also decrease the extent of ecosystem degradation in the long run. Financing this gap will not yield a direct return, so a non-debt instrument is best suited to address the ecosystem protection financing gap.

⁵⁶ UNDP, Coordinating Minister for Maritime Affairs and Investment, (2022)., Blue Financing Strategic Document, p. 30-31

170. GCF's grant-based assistance will provide funds directly to local community enterprises under Windows 1 and 2 for locally led climate action - activities that may not generate a direct financial return on investment but are essential for climate adaptation and mitigation. These activities may include ecosystem-based adaptation, adoption of low-emissions technologies, climate-resilient livelihood practices, and community-led restoration. Given the high risks associated with innovative climate projects, especially in countries like Indonesia, grants can absorb initial risks, making subsequent investments more attractive to private financiers.⁵⁷ In the past, grants in the blue economy sector have been largely limited to philanthropic CSR direct grants, which are limited in scope and size rather than targeting a systemic shift to a protection–production model. The scale of the grants to be deployed directly to community enterprises under Windows 1 and 2 will enable local actors to lead interventions to achieve wider paradigm shift.

Grant funding for private sector actors:

171. GCF funding for early stage ventures, cooperatives, and MSMEs under grant Window 1 (Adaptation) and Window 2 (Mitigation) will be catalytic to the blue economy in WPP 572. Mechanisms for providing this early stage funding, along with the technical assistance required to reduce risk and increase impact, does not currently exist in Indonesia. Local community enterprises, including small-scale fishers, fish farmers, and coastal tourism operators, face high upfront costs, limited access to affordable credit, and insufficient capacity to develop bankable climate resilience projects. Without direct grant support, these enterprises cannot overcome the initial barriers to adopting climate-smart practices or deploying low-emission technologies. GCF grant funding will fill this gap by enabling vulnerable communities to implement adaptation and mitigation activities that are not commercially viable but are essential for long-term resilience and emissions reductions. Grant funding will also build the capacity of these MSMEs to access concessional loan finance from BLU LPMUPK, allowing for longer term growth beyond the BEAM Project.

B.6. Exit strategy (max. 500 words, approximately 1 page)

172. The ambitions and impacts of BEAM will not end with GCF funding. The Project aims to support catalytic interventions by deploying a combination of policy reforms, innovative financing mechanisms, and private sector engagement that will create a protection–production paradigm for WPP 572, with applicability across Indonesia. Tools, inclusive and innovative financing mechanisms, and training and capacity-building approaches deployed by BEAM will support scaling and replication across the country. The Project integrates policy reforms, innovative financing mechanisms, the private sector, and direct government engagement to strengthen marine and coastal governance and financial sustainability. The Project is therefore structured to create enabling conditions for national replication.

173. The Project's technical assistance and policy support to provincial governments under Component 1 is expected to result in the creation and adoption of improved work plans and strategies, including development of sustainable / ongoing financing mechanisms for MPA management, a key gap identified by stakeholders. These plans and the policy recommendations for MPA establishment and expansion will be used to create regional zoning plans and to request ongoing allocations of government budget resources for implementation.

174. BEAM is designed to build long-term institutional, policy, and financial sustainability for both adaptation and mitigation efforts beyond the Project's implementation period. Component 1 will support government partners in strengthening enabling conditions through legal and policy reform, institutional capacity building, and the development of sustainable financing mechanisms such as the Regional Public Service Agency (BLUD) model which will be retained / utilized well beyond the Project period of performance. This approach enables subnational governments to manage and reinvest revenues (e.g. tourism levies, user fees) to MPA management units to effectively design, update, and enforce MPA regulations, reducing long-term dependency on external grants.

175. MPA, sustainable fisheries, and education programs engage fishing communities, fostering collaboration for enhanced MPA co-management and buy-in from communities. Community-led governance models, including locally managed marine areas, and fisher cooperatives will be central to ensuring long-term climate resilience. Capacity-building programs will empower coastal communities to directly manage adaptation and mitigation activities, integrating traditional knowledge with scientific approaches in the design and implementation of interventions. It is vitally important to utilize the extensive local knowledge of ecosystems and the threats that communities face to

⁵⁷ Mitigation Action Facility (2023) https://mitigation-action.org/wp-content/uploads/230303_Financial_Mechanisms_Factsheet_MAF.pdf

create solutions that are locally appropriate and feasible to implement. As communities experience increased incomes and food security, they will be better positioned and incentivized to sustain marine conservation efforts beyond the Project implementation period. To reduce dependency on grants, policies on integrated protection–production and sustainable financing mechanisms will promote a more sustainable funding for MPA co-management by providing support to provincial public service agencies (BLUD) capable of generating revenue from services fees, grants, cooperation with third parties, and local government funding, to ensure continuous financing for MPAs. These funds will be replenished through service fees, eco-tourism revenues, and public-private partnerships. It is expected that these measures will ensure effective long-term MPA management and sustainable financing.

176. For ecosystem restoration interventions under Component 2, restored areas will be maintained and managed to remain intact from future degradation, such as destructive fishing or unregulated coastal development. This will be achieved by integrating regulatory enforcement and local community surveillance into funded interventions, with sustainability mechanisms clearly identified in grant applications. For data systems, the Project will institutionalize data collection and management within local and national agencies (e.g., MMAF and provincial governments), provide technical guidance, and work with universities to embed knowledge management in their long-term programming, ensuring continuity after BEAM concludes.
177. The Project will deliver grant-based initiatives to drive sustainable and locally led climate adaptation and mitigation impacts in the WPP 572 region. These investments will apply eligibility requirements to focus support on community-identified blue economy needs, such as sustainable fisheries and low-carbon climate-resilient livelihoods that will be sustained beyond the grant implementation period. Sub-project sustainability will be essential criteria under the Project's Grant Facility: applicants will be required to outline their project's exit strategy. Even for procured goods, such as renewable energy equipment grants under the Mitigation Window, proposals will detail how generated income will maintain / replace procured equipment.
178. Under Activity 2.3.1, BLU LPMUKP, the government's primary microcredit provider for the marine and fisheries sector, will receive targeted support to digitize its loan management system, streamline disbursement procedures, and train extension officers. BLU LPMUKP's lending program is already backed by recurring government budget allocations, ensuring a stable source of loan capital. However, its current low disbursement absorption and limited outreach are due to operational inefficiencies, not lack of funds. Through the BEAM Project, once reforms are in place, the existing government funding will be far more effective and better utilized, reaching thousands more small-scale fishers and fish farmers in WPP 572 and across Indonesia. The improved IT system and streamlined workflows will be maintained by BLU LPMUKP using its own operational budget, while loan repayments from borrowers will be recycled into new lending, creating a self-sustaining cycle that does not depend on future donor support.
179. The Project-supported exchange of knowledge and lessons learned among sub-grantees will promote future impactful projects, and a regional knowledge center, hosted by a University which plans to continue operating the knowledge center beyond the Project implementation period, will support consistent learning and dissemination of practical information to a wide variety of stakeholders. Recommendations for replicating the BEAM model of protection-production across Indonesia and the region will be developed and embedded in national plans and strategies (e.g., the National Climate Adaptation Plan). This ensures that BEAM's legacy extends beyond WPP 572, influencing marine conservation and sustainable fisheries nationwide.
180. Sustainability will be further supported through the managed closure of Project activities, with the outputs and outcomes of BEAM sustained by Indonesian country partners including government and private sector actors who are involved and embedded as project owners from the outset. Beyond the lifetime of the Project, its impacts are expected to unlock and build the enabling conditions for further private-sector finance solutions to help protect blue carbon and biodiversity, build climate resilience, and promote sustainable livelihoods in perpetuity. The Project's exit strategy is rooted in financial diversification, private-sector engagement, and institutional ownership, ensuring that its impact endures long after the GCF funding period concludes.

SECTION C: FINANCING INFORMATION						
C.1. Total financing						
(a) Requested GCF funding	25.49M			USD		
GCF financial instrument	Amount	Tenor		Grace period	Pricing	
(i) Senior loans						
(ii) Subordinated loans						
(iii) Equity						
(iv) Guarantees						
(v) Reimbursable grants						
(vi) Grants	25.49M					
(vii) Results-based payments						
(b) Co-financing information	Total amount			Currency		
	36.25			million USD (\$)		
Name of institution	Financial instrument	Amount	Currency	Tenor and grace	Pricing	Seniority
Bengkulu Provincial Gov't	<u>In-kind</u>	<u>19.02</u>	<u>million USD (\$)</u>			
Lampung Provincial Gov't	<u>In-kind</u>	<u>0.52</u>	<u>million USD (\$)</u>			
North Sumatra Provincial Gov't	<u>In-kind</u>	<u>0.50</u>	<u>million USD (\$)</u>			
West Sumatra Provincial Gov't	<u>In-kind</u>	<u>1.87</u>	<u>million USD (\$)</u>			
Bung Hatta University	<u>In-kind</u>	<u>0.11</u>	<u>million USD (\$)</u>			
Ministry of Marine Affairs & Fisheries	<u>In-kind</u>	<u>13.63</u>	<u>million USD (\$)</u>			
Konservasi Indonesia	<u>In-kind</u>	<u>0.60</u>	<u>million USD (\$)</u>			
Total financing	61.74			Million USD (\$)		
(d) Other financing arrangements and contributions (max. 250 words, approximately 0.5 page)	As indicated in the table above, MMAF and provincial governments will be providing the majority of the co-finance. Contributions from other Project stakeholders can be considered parallel finance, complementing the project. In addition, in-kind contributions of time or other resources to support the Project are expected from local communities and local government bodies. CI will endeavor to track such parallel financing for final project reporting as detailed in the GCF Policy on Co-financing.					

C.2. Financing by component

Component	Output	Indicative cost million USD (\$)	GCF financing (indicative)		Co-financing (TBD)		
			Amount million USD (\$)	Financial instrument	Options million USD (\$)	Financial instrument	Name of Institutions
Component 1: Strengthen enabling conditions	Output 1.1: Development and deployment of evidence-based regulatory frameworks on ecosystem protection, fisheries sustainability, and innovative financing	41.26	6.87	Grants	18.07	In-kind	Bengkulu Provincial Gov't
					0.41	In-kind	Lampung Provincial Gov't
					0.46	In-kind	North Sumatra Provincial Gov't
					1.64	In-kind	West Sumatra Provincial Gov't
					0.06	In-kind	Bung Hatta University
					13.15	In-kind	Ministry of Marine Affairs & Fisheries
					0.60	In-kind	KI
Component 2: Locally Led Climate Action + Investment Readiness	Output 2.1: Locally-led climate adaptation projects are effectively implemented and monitored, resulting in enhanced climate resilience of vulnerable communities	8.83	8.83	Grants			
	Output 2.2 Blue carbon and renewable energy projects are effectively implemented and monitored, resulting in reduced GHG emissions	5.47	5.47	Grants			
	Output 2.3: Blue economy enterprises increase investment and expand operations in WPP572.	1.75	1.75	Grants			

	PMC	2.95	1.16	Grants	0.95	In-kind	Bengkulu Provincial Gov't
					0.11	In-kind	Lampung Provincial Gov't
					0.04	In-kind	North Sumatra Provincial Gov't
					0.23	In-kind	West Sumatra Provincial Gov't
					0.05	In-kind	Bung Hatta University
					0.41	In-kind	Ministry of Marine Affairs & Fisheries
	M&E	1.48	1.41	Grants	0.07	In-kind	Ministry of Marine Affairs & Fisheries
Indicative total cost (million USD)⁵⁸		61.74	25.49		36.25		

C.3 Capacity building and technology development/transfer

C.3.1 Does GCF funding finance capacity building activities? Yes ☒ No ☐

C.3.2. Does GCF funding finance technology development/transfer? Yes ☒ No ☐

181. The Project places substantial emphasis on capacity building and technology development/transfer as integral components of an integrated and sustainable production and protection model for the blue economy. The Project's strategic investment aims to enhance both institutional, market-based and community-level capabilities. At the institutional level, capacity building initiatives will foster improved governance structures and sustainable practices (See **Annex 2, Section 6**). Local communities, including women and other vulnerable groups, will receive targeted capacity building and technologies including solar-powered chiller systems on fishing boats, and AI-powered fisheries data monitoring systems empowering them to actively participate in ecosystem protection and improve livelihoods.
182. The Project will allocate resources to advance technology development and transfer, particularly enhancing information systems to improve the integration of climate and environmental data, contributing to evidence-based decision-making (Activity 1.1.2). Additionally, the project will reinforce effective MPA management practices through strengthening surveillance capacity for MPAs (Activity 1.1.1). Activities relating to testing and deploying new technologies that deliver more resilient livelihoods, such as improved cold chains (renewable energy technology) or reduced waste, will also be supported under Grant Windows 1 and 2 of Component 2. Under Activity 2.3.1, capacity building and technology transfer will be provided to BLU LPMUKP, the government's primary microcredit provider for the marine and fisheries sector. This intervention will deliver a digital loan management system (technology transfer), streamline disbursement procedures to enhance access to credit.
183. While the exact amount of funding allocated for capacity building and technology transfer is contingent on sub-grants issued by the Project, preliminary estimates based on research and market engagement activities conducted during Project design indicate there will be a substantial allocation of Project grant funds to these essential components.

⁵⁸ Budget figures are estimated figures provided by the Executing Entities for this draft and are under assessment by the Accredited Entity. Budget figures are subject to change in next submission to the GCF.

EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

This section refers to the performance of the project/programme against the investment criteria as set out in the GCF's Initial Investment Framework.

D.1. Impact potential (max. 500 words, approximately 1 page)

184. This Project will contribute to the following mitigation and adaptation result areas:

- **MRA1 – Energy generation and access:** The project will contribute to this result area through the deployment of small-scale renewable energy technologies for coastal fisheries, particularly through solar-powered cold-chain and fish preservation systems supported under Activity 2.2.1. These technologies reduce reliance on fossil-fuel-based energy sources and conventional ice production while improving energy access, reducing post-harvest losses, and strengthening the climate resilience and economic viability of small-scale fisheries.
- **MRA 4 – Forestry and land use:** The Project will contribute to this through ecosystem restoration and reduced loss of coastal and marine ecosystems (mangroves, seagrass), which will reduce GHG emissions and increase carbon sequestration (Outcome 2). Protection of coastal and marine ecosystems will also be strengthened by improvement in the management of MPAs via policy support and capacity building (Outcome 1).
- **ARA 1 – Most vulnerable people and communities:** Vulnerable coastal communities will be the primary beneficiaries of grant-based assistance for activities that will strengthen their resilience to climate change through improved livelihoods and food security (Outcomes 1 and 3).
- **ARA 2 – Health, well-being, food, and water security:** Participatory development of improved fisheries, fish preservation techniques, management areas, and reduced pollution will improve the food security of local communities (Outcome 3).
- **ARA 4 – Ecosystems and ecosystem services:** As outlined under MRA 4, the Project will improve the state of marine and coastal ecosystems, which will increase provision of ecosystem services, such as improved habitats for fish species (Outcomes 1 and 2).

Climate change mitigation impacts: see **Annex 22** for more detail

185. The Project's mitigation impact is achieved through three complementary pathways: (i) improved MPA management effectiveness (Activity 1.1.1) contributing 98,680 tCO₂e by the end of the implementation period; (ii) community-led conservation and livelihood interventions (Activity 2.1.1) contributing 365,534 tCO₂e; and (iii) direct ecosystem restoration and renewable energy application (Activity 2.2.1) contributing 19,108 tCO₂e. The baseline for these estimates is derived from localized historical loss rates of mangroves (average 0.2% annually across WPP572) and seagrass (2.82% annually), as detailed in Annex 22. The Project's interventions are designed to be synergistic: the enabling environment established by Component 1 enhances the effectiveness of community interventions under Component 2, while Component 2 restoration activities directly rehabilitate ecosystems that will benefit from improved management conditions.
186. Mangrove and seagrass ecosystems act as critical carbon sinks in WPP 572's (**Annex 22**). The baseline scenario (without Project) indicates that over the next 6 years emissions from loss of intact mangrove and seagrass ecosystems is expected to exceed 941,841 tCO₂e in WPP 572. Over the coming 20-year period blue carbon emissions are projected to be 2.75 million tCO₂e in WPP 572.
187. The BEAM Project, with an implementation period of 6 years (~2027 to 2032) and a lifespan of 20 years until 2046, will reduce blue carbon ecosystems loss through the improvement of marine and coastal ecosystem management outlined in Activity 1.1.1 (Sub-Activity 1.1.1.2) of Component 1, Activity 2.1.1 (Sub-Activity 2.1.1.1, 2.1.1.2, 2.1.1.3), and Activity 2.2.1 (Sub-Activity 2.2.1.1) of Component 2. The activities include support to GoI in improving management effectiveness of the existing MPAs and expansion of new MPAs and OECMs, which will maintain and enhance the health of existing mangrove and seagrass ecosystems in WPP 572. Reinforcing these conservation measures will significantly contribute to protecting existing marine blue carbon stocks and expanding their reach, thereby enhancing the regions' potential as a blue carbon sink.
188. Ecosystem restoration activities outlined in Activity 2.2.1 of Component 2 will also reduce the loss of carbon-rich blue ecosystems. Restoring blue carbon ecosystems through protection, rehabilitation, and replanting will yield both GHG emissions reductions and ecosystem services including improved fisheries breeding grounds, mitigation of erosion, and reduced coastal flooding. BEAM's mitigation interventions are projected to prevent 483,322 tCO₂e over the Project implementation period and 1,298,901 tCO₂e over 20 years.

Climate change adaptation impacts: see **Annex 24** for more detail

189. The Project will provide adaptation benefits to vulnerable communities in WPP 572, including fishers, coastal communities in low-lying areas, local organizations, and women. An estimated 355,800 direct beneficiaries in provinces adjacent to WPP 572 and 10M indirect beneficiaries across Indonesia will be positively impacted over the project lifespan. The regulatory reforms undertaken under Component 1 and 2 will positively impact fishers who operate in and around MPAs across Indonesia (indirect beneficiaries) and interventions under Component 2 will directly increase the climate resilience of local communities in WPP572 by increasing their food security and livelihoods. Interventions supported to achieve this reduction in vulnerability include improving catch value from more sustainable fisheries, increased coastal and marine eco-tourism, collaborative management of MPAs, sustainable waste management to reduce pollution, and improved low-carbon climate-resilient livelihoods. See the **Logical Framework** and **Annex 24** for more details.

D.2. Paradigm shift potential (max. 500 words, approximately 1 page)

190. While the concept of the sustainable blue economy has existed and been promoted in Indonesia since at least 2014, the application of the concept has not yet been undertaken at scale. BEAM is designed to address identified barriers and capacity constraints to achieve a **paradigm shift from unsustainable exploitation of marine resources to a climate responsive protection-production model of coastal and marine management**. Key to this vision is the development of scalable, inclusive, and sustainable finance for the blue economy. The Project aims to establish the financial and legal standing necessary for blue enterprise activities while enhancing the enabling environment for ecosystem protection, fisheries sustainability, and innovative financing by improving data collection and governmental regulatory frameworks at both national and sub-national levels. These measures will increase investor confidence in Indonesia's blue economy.

191. The Project will deploy grants in WPP 572, targeting climate adaptation interventions, ecosystem rehabilitation and restoration, and marine and coastal management to achieve reduced vulnerability to climate change, reduced GHG emissions, and create the social and environmental conditions on which blue investments and economic growth rely. The Project design is based on thorough stakeholder engagement, aligns with the GoI policies, and will be implemented in close coordination with the GoI and the private sector - making its interventions adaptable and replicable in other regions of the country to achieve a wider paradigm shift across Indonesia.

192. Recommendations for replicating the BEAM model of protection-production across Indonesia and the region will be developed based on lessons learned from implementation. The Project will seek to embed these recommendations in national strategy documents (e.g., National Climate Adaptation Plan) to ensure replication and scaling of interventions, an approach that is supported by the GoI. To further grow the sustainable blue economy, practitioner-oriented papers and blueprints will be developed to disseminate learnings from the IRW across WPP 572 and Indonesia. Knowledge exchange among sub-grantees under Component 2 will promote future impactful projects, and a regional knowledge center will support ongoing learning.

193. A key element of the desired paradigm is effective and sustainable MPA management. This will be achieved by developing the necessary regulatory framework, inclusion of communities in monitoring, building the capacities for data collection and utilization to inform harvest strategies, and developing financial mechanisms for ongoing effective management of MPAs. With these interventions in place, MPAs will be an effective tool for ensuring the productivity and inclusive economic benefits of the blue economy for all stakeholders. This work in WPP572 will serve as a blueprint for national implementation, demonstrating the potential of well-managed MPAs to enhance fish species diversity and stock volume. Interventions include expanding MPAs' scale to provide benefits to more ecosystems, and creating avenues for blue economy financing of the marine protection–production model.

194. For the Project to achieve a durable paradigm shift, all stakeholders – from community members to national government institutions – must have ownership and experience benefits from the sustainable use of marine resources. BEAM is designed to reflect this requirement by supporting locally-led adaptation and mitigation interventions which are identified and implemented directly by recipients, that address the needs of local communities and utilize local and traditional knowledge to increase their food security, livelihoods, and the quality of the ecosystems on which they depend. Complementing these interventions, the Project will support the government's efforts to improve the enabling environment to support the growth, financial sustainability, and inclusive development of the blue economy in Indonesia. By ensuring that the Project responds to the needs of all stakeholders and is aligned with GoI strategy, a paradigm shift to protection/production in WPP 572, and eventually across Indonesia can be achieved.

D.3. Sustainable development (max. 500 words, approximately 1 page)

195. Sustainable development is the cornerstone of the protection-production model to be implemented by the Project. The overarching goal of BEAM is to move from an economic model where fisheries and other marine resources are under managed and over exploited, leading to poverty and food insecurity; to one where long-term economic growth is achieved for all stakeholders without damaging the critical ecosystems that the coastal economy depends on. BEAM is fully aligned with Indonesia's 2030 Sustainable Development Agenda (*Presidential Regulation No 59*).
196. The Project directly supports progress towards the following United Nations SDGs:
- No Poverty (#1),
 - *Increased and diversified livelihoods of coastal communities in WPP572*
 - Zero Hunger (#2)
 - *Improved food security of coastal communities in WPP572*
 - Good Health and Well Being (#3)
 - *Improved food security and reduced pollution from waste management interventions and improved ecosystem services*
 - Gender Equality (#5)
 - *Gender responsive interventions across BEAM and increasing the capacities of women to more fully participate in the blue economy*
 - Clean Water and Sanitation (#6)
 - *Improved waste management and reduced pollution in coastal ecosystems*
 - Affordable and Clean Energy (#7)
 - *Provision of renewable energy technology through targeted grants to improve fisheries livelihoods and reduce loss/waste*
 - Decent Work and Economic Growth (#8)
 - *Diversified and improved livelihoods for coastal communities; increasing investment in the blue economy to deliver economic growth for all stakeholders.*
 - Reduced Inequalities (#10)
 - *Increasing the role of women in fisheries and providing targeted grants to vulnerable populations and communities.*
 - Responsible Consumption and Production (#12)
 - *Increasing sustainable production through more effective management practices and reducing over-exploitation of limited marine resources.*
 - Climate Action (#13)
 - *GHG emissions reductions and reduced climate vulnerability of beneficiary populations*
 - Life Below Water (#14)
 - *Improving the quality and extent of critical coastal and marine ecosystems, improved management of fish stocks and fisheries practices.*
 - Peace, Justice, and Strong Institutions (#16)
 - *Capacity building of provincial and national level government and community institutions to manage and sustainably build the blue economy.*

D.4. Needs of recipient (max. 500 words, approximately 1 page)

197. Indonesia is home to some of the most biodiverse marine ecosystems in the world - these ecosystems play critical roles in mitigating GHG emissions, offer numerous climate resilience benefits to coastal communities, and are a key source of income and food security. Within WPP 572, coastal and marine ecosystems and fisheries are projected to experience negative impacts from climate change (**Annex 2, Sections 2 and 3**). Continued degradation of these ecosystems from climate and non-climate factors will result in higher GHG emissions, higher disaster risk for coastal populations, and lower economic productivity. Compounding the impacts of climate change and inadequate management policy is underinvestment in the region, which limits sustainable growth and economic activity that supports both communities and ecosystems.
198. The population adjacent to WPP 572 is more vulnerable than most of the coastal population of Indonesia, with higher rates of poverty and higher reliance on ecosystem services for food security and livelihoods. This reliance on nature makes the population more exposed to climate risk, with rising sea levels, increased sea surface temperatures, and more variable rainfall / extreme precipitation events directly affecting the well-being of coastal populations. Through extensive consultation involving stakeholders at all levels, but focusing on community

representatives, identification of specific challenges was undertaken and approaches were selected and integrated into BEAM design to address local risks and needs.

199. Rather than utilize pre-identification of all Project interventions, it was determined that the most efficient and effective mechanism to sustainably respond to the vulnerabilities of populations and ecosystems is to support locally-led climate action. Through BEAM, communities (including representation from vulnerable and marginalized groups as identified in the GEDSI analysis), local organizations, and the private sector will design interventions that address their needs directly. These interventions will be funded through the Adaptation and Mitigation grant windows under Component 2 and be implemented by the communities and institutions who are most in need of support. Proponents will be encouraged to submit proposals demonstrating a deep understanding of their communities' and businesses' challenges. By empowering local stakeholders to identify and address these needs, the Project will ensure that proposed projects are responsive and tailored to the specific contexts and requirements of each target group.
200. The Project interventions under Component 1 were developed with government partners to directly address the enabling conditions and regulatory needs present in WPP 572. Through engagement with these stakeholders, the suite of activities and deliverables was developed to respond to identified barriers and capacity gaps as identified by the government agencies responsible for the effective management of natural ecosystems and growth of a climate-resilient blue economy that serves coastal populations and helps achieve national objectives. The provision of significant co-finance from Provincial and National government to support the work of Component 1 is a strong indication that the Project is aligned with and responding to the needs of these key stakeholders.
201. The BEAM Project seeks to respond to the needs of vulnerable coastal populations, the government of Indonesia, and the private sector to create a holistic set of interventions whose impact is greater than the sum of its parts. In this way, the Blue Halo S protection-production model can be shown effective at scale, and further replicated and expanded across Indonesia to meet even greater needs.

D.5. Country ownership (max. 500 words, approximately 1 page)

202. The Project was designed in close collaboration with the GoI and its design reflects country ownership through its support for achievement of national climate-relevant objectives. In particular, the Project is aligned with Indonesia's Second Nationally Determined Contributions (SNDC 2025), which is aligned with the RPJMN 2025-2029, the RPJPN 2025-2045, and the LTS-LCCR 2050, and maintains Indonesia's pathway toward net zero emissions by 2060 or sooner. The Project is also aligned with Indonesia's National Adaptation Plan (NAP) submitted to the UNFCCC in 2025, which covers the period 2026-2030 and sets out the pathway toward 2035, including strengthened resilience in economic, social and livelihood, and ecosystem and landscape systems. In addition, the project also supports implementation of Indonesia's FOLU Net Sink 2030 agenda, relevant marine spatial planning and blue carbon policies, and Indonesia's blue economy priorities.
203. BEAM will contribute to reducing the loss of carbon-rich blue ecosystems through the improvement of marine and coastal ecosystem management under Component 1 and through the restoration of blue carbon ecosystems (mangrove and seagrass) under Component 2. These interventions are consistent with the Second NDC, which recognizes the role of integrated terrestrial, coastal, and marine ecosystem management, including blue carbon, marine spatial planning, and the protection and restoration of key ecosystems as part of Indonesia's mitigation and resilience strategy. The Project will also contribute to Indonesia's National Climate Change Adaptation Plan (NAP) 2025 by providing climate adaptation benefits in marine and coastal sectors and increasing the climate resilience of communities, particularly fishers and others who rely on ecosystem services for their livelihoods and food security. In line with the evolving national adaptation framework for 2026-2030 and the pathway toward 2035, the Project will support resilience-building across ecosystem, livelihood, and local economic systems in vulnerable coastal areas.
204. The Project will support the achievement of the MMAF's program on blue economy development. MMAF's program includes the MPA Vision 30x45 (a national initiative to conserve 30% of territorial waters by 2045) and ensuring sustainable, quota-based fisheries. MMAF's work program will be facilitated by the Project's enabling condition activities under Component 1 and support from the Project is essential to fulfil the GOI's ambitious commitments on MPA Vision 30x45. MMAF's program to ensure sustainable fisheries will be supported by Sub-Activity 1.1.1.3 *Reinforce the current Fisheries Management Plan including its Fisheries Harvest Strategy at WPP 572*. The Project

will provide technical assistance to LPMUKP (Marine and Fisheries Capital Fund Agency), aiming to streamline loan disbursement to fishers and SMEs.

205. Indonesia has sought to provide blue economy sectors with various sources of financing and has made the blue economy the focus of national plans, strategies, and international commitments. The establishment of the Indonesia Financial Services Authority (OJK) in 2014 expanded the focus on green banking to include all financial services. OJK, alongside the Ministry of the Environment and Forestry, initiated programs and policies to integrate environmental protection in the financial sector. The introduction of the Sustainable Finance Roadmap (2015–2019), the issuance of green bonds and sukuks, and the establishment of the Indonesia Sustainable Finance Initiative underscore Indonesia's commitment to sustainable finance. Despite these important efforts to mobilize diverse financial instruments, the GoI needs to increase the climate resilience of blue economy sectors through livelihood protection, regulatory reform in ecosystem and marine management, and nature restoration activities. This will allow for more effective use of the financial instruments and facilities developed over the last 25 years. The project will provide policy recommendations, spatial planning outputs, investment priorities, and technical evidence that will feed into the Government's Climate Budget Tagging (CBT) and Regional Climate Budget Tagging (RCBT) policy tools, supporting central and subnational governments in tracking climate-related budget allocations and expenditures for marine and coastal action.
206. Indonesia's RPJMN underscores the country's prioritization of a robustly managed ocean-related sector as a catalyst for achieving national development goals. Specifically, the RPJMN highlights the role of tourism in achieving its overarching objectives, which aligns with one of this Project's key livelihood activities for coastal communities through support for eco-tourism activities. Tourism is a key focus area in Indonesia's quest to bolster its green and blue economic sectors and addressing threats to tourism from climate change is a priority for the GoI.
207. The Project also closely aligns with Indonesia's SDG priority areas including SDG 14: Conserve and sustainably utilize the oceans, seas, and marine resources for sustainable development. In 2020, Bappenas adapted the marine and ecosystem protection targets in SDG 14 to fit the Indonesian context, one of which is to prevent and significantly reduce marine pollution of all kinds from land-based activities, including marine debris and nutrient pollution, by 2025. This target is closely aligned with Project interventions which will reduce pollution of coastal ecosystems from climate change-increased storm activity by improving waste management practices.
208. The direct co-financiers of this Project are the National Government (through MMAF), the EE, a University, and four of the six participating Provincial Governments. Extensive engagements with these government entities have demonstrated and reinforced the alignment of priorities and interventions between ongoing government efforts and those of BEAM.

D.6. Efficiency and effectiveness (max. 500 words, approximately 1 page)

209. BEAM is designed with cost-effectiveness and efficiency as top priorities. By supporting direct climate interventions designed and deployed by local communities and by facilitating access to existing capital, concessional financing, and government programs, the Project will utilize local knowledge, resources, and current financial mechanisms to address climate impacts effectively. In addition, the protection-production model is fundamentally an approach that is designed to increase marine management effectiveness - the health and extent of ecosystems directly impacts the climate resilience of communities and the ability of the sustainable blue economy to grow.
210. The Project is publicly funded, time-limited and focused on delivering public goods and services. It is not designed to generate revenues for the project itself and so financial analysis for the overall project is not relevant. The economic analysis (**Annexes 3a and 3b**) demonstrates strong project viability. The high, positive NPV of USD 42.3 million indicates substantial net economic benefits to society. The Economic Internal Rate of Return (EIRR) of 29.1% substantially exceeds the 8% social discount rate used, indicating robust economic returns, and the Benefit-Cost Ratio of 1.67 demonstrates efficient use of funding. A financial analysis (see **Annexes 3b and 3c**) was developed for illustrative subprojects of the grant program Windows 1 (Adaptation) and 2 (Mitigation) that enable financial benefits for beneficiaries. The financial analysis demonstrates that the activities designed to achieve climate adaptation and mitigation while improving community livelihoods and strengthening small businesses can be financially viable and therefore self-sustaining.
211. BEAM's approach ensures cost efficiency by utilizing and enhancing existing institutions such as local government services and microfinance cooperatives, reducing the need for new structures and lowering execution costs. The long-term presence and prior work of KI in Indonesia mean the Project can build on a solid foundation with

experienced staff and established organizational frameworks. BEAM also incorporates activities aimed at identifying effective financial tools and support mechanisms to unlock investment in climate change adaptation and mitigation for MSMEs, CSOs, and private sector stakeholders. This strategic focus ensures that the Project remains agile, flexible, and capable of maximizing the impact, replication, and scaling of interventions, thereby enhancing overall cost-effectiveness and efficiency.

212. The complementarity of the Project's two components also contributes to overall efficiency and effectiveness. By building a solid regulatory and management foundation for protection and production in collaboration with government authorities while concurrently funding interventions to build and demonstrate that model, the Project will more effectively build the resilient, low emissions development pathway desired by both the GoI and vulnerable coastal communities. The investments and private sector engagement under Component 2 are supported by the enabling conditions built under Component 1, and the three grant windows under Component 2 complement each other to create the production-protection paradigm sought by the Project.
213. Adaptive management is integral to the Project, allowing for continuous refinement of data collection methods, evolving ecosystem understanding, and flexible community support. This commitment to ongoing learning and reflection will ensure the Project can efficiently adapt to new challenges and opportunities, thereby increasing its effectiveness and responsiveness over the course of implementation. To support adaptive management efforts, internal lessons will be systematically captured and shared across technical teams through the PMU. In parallel, insights and lessons from grantees under Component 2 will be disseminated through the knowledge management and learning hub under Component 1, and grant making decisions over the Project implementation will be informed by prior successes / challenges encountered.

LOGICAL FRAMEWORK

This section refers to the project/programme's logical framework in accordance with the GCF's Integrated Results Management Framework to which the project/programme contributes as a whole, including in respect of any co-financing.

E.1. Project/Programme Focus

Please indicate whether this proposal is for a mitigation or adaptation project/programme. For cross-cutting proposals, select both.

- ☒ Reduced emissions (mitigation)
☒ Increased resilience (adaptation)

E.2. GCF Impact level: Paradigm shift potential (max 600 words, approximately 1-2 pages)

Assessment Dimension	Current state (baseline)		Potential target scenario (Description)	How the project/programme will contribute (Description)
	Description	Rating		
Scale	The Blue Economy concept is relatively newly adopted in Indonesia. While Article 14 of Law 32 of 2014 on Marine⁵⁹, the country's Blue Economy Development framework was published in 2021⁶⁰, highlighting the need for innovative finance mechanisms and support for pipeline development to unlock the potential of the sector. The GOI expects that the implementation of the Blue Economy will support the country to meet its emission reduction target in the Enhanced NDC: 31.89% unconditionally and 43% conditionally against the 2030 BAU scenario⁶¹. The GoI divides Indonesia's fishery management areas (WPP) into eleven	Low	The project aims to create a climate responsive blue economy that supports vulnerable populations and the ecosystems on which they depend by enhancing ecosystem protection, fisheries sustainability, and innovative financing at the provincial level by aligning subnational policies and incentives with national goals: - Improve science-based management of marine protected areas and coastal ecosystems in Indonesia - Increase knowledge and capacity to develop innovative finance mechanisms for protection of blue carbon ecosystems and biodiversity conservation, thereby enhancing ecosystem services - Increase climate resilience of vulnerable coastal populations through improved/ diversified	The Project is designed to create a replicable model for climate-responsive blue economy development that can be scaled nationally, through: - Enhancing policies on ecosystem protection and fisheries sustainability, and innovative financing (Activity 1.1.1). In this activity, the project will provide necessary technical assistance to the national and local government for effective implementation of national vision and policies (RPJMN) and support the development of relevant policies. - Through Activity 1.1.1, the Project supports the establishment of a new national Marine Protected Area (approximately 3 million hectares) and the expansion of two provincial MPAs (approximately 713,000 hectares combined), significantly increasing the area of coastal and marine ecosystems under improved management. The Project also supports implementation of fisheries management measures across the entirety of

⁵⁹ Kelautan (Marine), Undang-undang Republik Indonesia Nomor 32 Tahun 2014 (Republic of Indonesia Constitution Number 32 Year 2014). <https://peraturan.bpk.go.id/Details/38710>

⁶⁰ Bappenas: (2021). Blue Economy Development Framework for Indonesia's Economic Transformation. In L. A. A. T. Sambodo, S. Yanti, D. D. P. Pane, & A. Sim (Eds.), [https://perpustakaan.Bappenas.go.id/e-library/file_upload/koleksi/dokumenBappenas/file/Blue Economy Development Framework for Indonesias Economic Transformation.pdf](https://perpustakaan.Bappenas.go.id/e-library/file_upload/koleksi/dokumenBappenas/file/Blue%20Economy%20Development%20Framework%20for%20Indonesias%20Economic%20Transformation.pdf)

⁶¹ Republic of Indonesia. (2022). *Enhanced Nationally Determined Contribution Republic of Indonesia*. [https://unfccc.int/sites/default/files/NDC/2022-09/ENDC Indonesia.pdf](https://unfccc.int/sites/default/files/NDC/2022-09/ENDC%20Indonesia.pdf)

	regions⁶², and there is potential for scaling-up successful interventions and policy improvements in other WPPs based on learning from this BEAM Project. The Ministry of Marine Affairs and Fishery launched a Blue Economy project in the eastern region of Indonesia (FMA 714, 715, 718), called Lautra, funded by the World Bank, under implementation since 2023^{63, 64}.		livelihoods and improved food security. • Create a successful model to scale to the rest of Indonesia and beyond	WPP 572, a fisheries management area covering approximately 94.3 million hectares and supporting approximately 14 million coastal residents. • Strengthen Indonesia's fisheries and ecosystem data systems (Activity 1.1.2) by training local universities, fisheries management units, and MPA technical units. This will ensure that science-based management approaches piloted in WPP 572 can be sustained, validated, and replicated in other WPPs. • The Knowledge Management and Information System (Activity 1.1.3) will serve as a centralized platform to document and disseminate methodologies, success stories, and lessons learned, which will be accessible to policymakers and practitioners nationwide. • A structured on-granting mechanism in the Component 2 will demonstrate how community-level interventions can deliver both climate adaptation and mitigation impacts, and enhancing the investment readiness and capacity of blue economy actors to sustainably create climate-responsive growth. These grant windows enable interventions to be implemented simultaneously across a broad geographic area, reaching vulnerable coastal communities, fisheries-dependent households, local organizations, cooperatives, and MSMEs. In parallel, Activity 2.3.1 strengthens BLU LPMUKP's lending systems, enabling affordable finance to reach a substantially larger number of small-scale fishers, fish farmers, and blue economy enterprises than is currently possible. • The Project's transformation pathway is based on three mutually reinforcing scaling mechanisms. First, the Grant Facility will fund and test locally led
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⁶² Jalur Penangkapan Ikan dan Alat Penangkapan Ikan di Wilayah Pengelolaan Perikanan Negara Republik Indonesia dan Laut Lepas (Fishing Routes and Fishing Equipment in the Fisheries Management Areas of the Republic of Indonesia and the High Seas), Pub. L. No. 59/PERMEN-KP/2020 (2020). <https://peraturan.bpk.go.id/Details/159488/permen-kkp-no-59permen-kp2020-tahun-2020>

⁶³ Tempo. (n.d.). Insan Terang Lautra: Jurus KKP Kembangkan Kawasan Konservasi (Insan Terang Lautra: MMAF Steps to Develop Conservation Areas). 2022. Retrieved September 4, 2023, from <https://nasional.tempo.co/read/1659056/insan-terang-lautra-jurus-kkp-kembangkan-kawasan-konservasi>

⁶⁴ World Bank. (2023). Lautan Sehat, Masyarakat Sehat: Proyek Baru akan Memperkuat Ketahanan Daerah Pesisir dan Ekonomi Biru di Indonesia (Healthy Oceans, Healthy Communities: New Project Will Strengthen Coastal Resilience and Blue Economy in Indonesia). <https://www.worldbank.org/in/news/press-release/2023/03/23/healthy-oceans-healthy-communities-new-project-will-boost-coastal-resilience-and-strengthen-blue-economy-in-indonesia>

				adaptation and mitigation models that demonstrate technical, social, and financial viability in WPP 572. Second, successful approaches will be documented through the Knowledge Management and Information System and integrated into government planning, MPA management systems, fisheries management frameworks, and provincial implementation guidance, creating pathways for replication beyond project-supported sites. Third, the Project will strengthen financing mechanisms for the blue economy by improving BLU LPMUKP's lending systems and investment readiness functions, creating a pathway through which successful grantees, cooperatives, MSMEs, and community enterprises can transition from grant finance to longer-term concessional credit and other financing sources. Under Output 2.3, this scaling pathway is operationalized directly through institutional strengthening of BLU LPMUKP's loan processing systems and financing functions. The resulting improvements are expected to increase BLU LPMUKP's loan disbursement capacity across multiple WPPs in Indonesia where the institution operates, rather than solely within WPP 572, providing an early and measurable demonstration of the Project's paradigm shift potential within the results framework itself, rather than only as a post-project replication aspiration. Together, these mechanisms are designed to support scaling beyond the Project geographic area and beyond the Project period of performance through government adoption, institutionalization, and increased access to sustainable finance. • All interventions will be undertaken in collaboration with the GoI and in alignment with national strategy and plans to ensure buy in, sustainability, and replicability.
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Replicability	The Gol is eager to develop the Blue Economy, considering the country's substantial ocean resources. It aims to generate more income, promote sustainable livelihoods for people living near the coast, and safeguard marine biodiversity by restoring the marine and coastal ecosystem. The Gol has addressed these aims in their policy documents including medium and long-term development plans (RPJMN and RPJPN). However, these national plans are not necessarily aligned with local plans, regulations, and budget. Without support from development partners, the replicability of the blue economy is 'medium'.	<u>Medium</u> Replication of the BEAM model will stem from the improved enabling environment (national institutional and regulatory frameworks that are aligned with the sub-national ones and supported with sufficient budget), developed standards, guidelines, systems, lessons learned, and best practices that could be implemented or adopted by similar projects in different WPP areas across Indonesia. Government and non-government organizations will replicate the following activities as they will be involved in and exposed to the Project: (i) guideline and selection criteria to choose grantees, (ii) management of Marine Protected Areas (MPAs) and coastal ecosystems, (iii) methods for effective adaptation and mitigation, (iv) management and technical best practices, for example, sustainable grant disbursement, stakeholder engagement strategies, and governance arrangement model, (v) blue enterprise development and innovative financing model. Financing schemes that might fund the project's replication include the state budget (APBN), the subnational budget (APBD), and the village fund (Dana Desa). Because governments at different levels see the advantages of implementing the blue economy, they will replicate the activities using these budgets. More specifically, the government will fund the project replications if they align with the national development plans. It is anticipated that the BEAM interventions will allow for / build the enabling conditions for	The Project will contribute to the replicability of interventions through: Component 1, which aims to improve the enabling environment for ecosystem protection, fisheries sustainability, and innovative financing. This component will strengthen the buy-in of the stakeholders by improving the financial and legal standing necessary for the implementation and replication of blue economy at the national and sub-national levels. This component covers: - Provision of technical assistance to government at all levels to develop policy and innovative financing (Activity 1.1.1). Under this activity, the Project will create tangible policy products that other provinces and WPPs can directly adopt or adapt. These includes: 1) provincial-level SOP and guidelines, a national-level policy recommendations for PPP (Public-Private Partnership) mechanisms in MPA management, and a Harvest Strategy for pelagic fisheries in WPP 572. - Building institutional capacity and systems for fisheries and relevant coastal and marine ecosystems data (Activity 1.1.2.). This activity will invest in human capital (through capacity building) and data infrastructure. - Establish a knowledge management and learning center for active dissemination of the project (Activity 1.1.3). The center will serve as centralized, accessible repository of methodologies, tools, and data. The center will also serves as a showcase, so that the project can demonstrate its achievements and success and the pathways to achieve them. Hence, stakeholders within and outside the project areas will benefit from lessons learnt and best practices on the issues supported and experienced by the project. Component 2 will manage grants for adaptation, mitigation, and catalytic blue economy investments. Government and non-government organizations including community members and businesses with
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			the deployment of other innovative financial mechanisms in the future (e.g. blue bonds)	sustainable protection and production knowledge and skills gained from the project interventions are expected to develop climate resilience-coastal ecosystems, livelihoods, blue enterprises and their expansion outside WPP 572. Emphasis / prioritization will be taken to support women led organizations and indigenous community organizations where possible. Capacity building and training throughout all activities. Participants with strengthened capacity can implement, or transfer their knowledge to their peer groups, in other projects.
Sustainability	The Blue Economy concept aligns with national policies, including the medium and long-term development planning documents (RPJMN and RPJPN). It also aligns with global initiatives (e.g. SDG 14). At the national level, some relevant institutional and regulatory frameworks are available and operational. The GoI also allocated some budget for Blue Economy development. However, these still need to be strengthened and aligned with those at the subnational level, which lacks institutional and regulatory frameworks and budget allocation. Moreover, practices and customs that are counterproductive towards or impede the achievement of national goals are experienced in WPP 572. Some examples are IUU fishing by foreign⁶⁵ and local⁶⁶ ships, and unsustainable developments (e.g., hydroelectric power	<u>Low</u>	The institutional and regulatory frameworks and resource allocation for ecosystem protection, fisheries sustainability, and innovative financing at the national level are improved (in quantity and quality), considering the country's wide area coverage and complex issues related to the Blue Economy development. Regulatory frameworks are aligned and coherent with and supported by the sub-national governments. Sub-national government will have relevant institutional and regulatory frameworks, allocate sufficient resource to ensure its effective implementation, and can seek external funding and establish innovative financing schemes to grant relevant project as necessary in the future. Blue economy enterprise partners (with increased income, assets, linked to market and financing access) as a result of the BEAM interventions, may become catalysts or guarantor for further investments, investors,	The project ensures that its policy outputs become part of Indonesia's permanent governance architecture. The Harvest Strategy being developed for key pelagic species will be integrated into Indonesia's quota-based fisheries policy, with built-in annual monitoring and evaluation that makes adaptive management a routine government function. Provincial-level SOPs and guidelines, along with formal working groups (Pokja) for MPAs and blue financing mechanisms, embed blue economy principles into permanent government structures and operations that continue functioning beyond the project timeline. At the institutional level, Activities 1.1.1 and 1.1.2 strengthen government capacity, fisheries management systems, MPA governance, and climate-responsive decision-making processes. These institutional improvements remain in place after Project completion and become part of routine government operations. The Project also supports the establishment and operationalization of Regional Public Service Agencies (BLUDs) and sustainable financing mechanisms that allow revenues from tourism, ecosystem services, and other sources to be retained and reinvested into MPA management and conservation activities. This reduces long-term dependence on donor financing and helps create financially sustainable MPA systems.

⁶⁵ Indonesia Ocean Justice Initiative. 2021. "Ancaman IUUF Dan Keamanan Laut Indonesia – September Oktober 2021 (IUUF Threats and Indonesian Maritime Security – September October 2021)." Retrieved May 28, 2024 (<https://oceanjusticeinitiative.org/2021/10/21/ancaman-iuuf-dan-keamanan-laut-indonesia-september-oktober-2021/>).

⁶⁶ Permana, Munzir. 2024. "Praktik Ilegal Dan Destructive Fishing Ancam Perairan Laut Aceh (Illegal and Destructive Fishing Practices Threaten Aceh's Sea Waters)." *Radio Republik Indonesia*. Retrieved May 28, 2024 (<https://www.rrl.co.id/hukum/548093/praktik-ilegal-dan-destructive-fishing-ancam-perairan-laut-aceh>).

	plants⁶⁷, land concessions⁶⁸ for palm oil and mining in the provinces of Aceh and North Sumatra) which can adversely affect coastal communities.		and donors or philanthropists who will provide grants to support similar projects. Healthier marine and coastal ecosystem, climate-resilient community with access to enhanced sustainable livelihood (human, natural, financial, physical, and social capital).	The project will invest in training that outlasts the intervention itself. Local universities and MPA technical units will receive training on ecological and socioeconomic surveys, ensuring scientific monitoring methods are embedded in local institutions that can train others. Fisheries enumerators and technical units are trained in data collection and stock assessment, building a permanent cadre of government and local experts who maintain monitoring systems and advise on management decisions. Technical assistance provided to all sub-grantees (Component 2) equips community organizations with enduring skills in project management, financial accountability, and sustainable practices that they retain and apply to future initiatives. The project will work closely with the national and sub-national governments, academia, private sectors, media, and marine and coastal communities and organizations to build their capacities and good governance arrangements towards and develop Blue Economy. Through the BEAM grant support to research and dissemination and project documentations (monitoring, evaluation, reporting, and learning) the project will learn about and improve practices that can be implemented and sustained. The project will ensure gender-balanced proportion in the involvement of stakeholders and to engage the most vulnerable groups in every stage of intervention, including indigenous communities / peoples. The project will also ensure that each intervention complies with the sustainability principles. For example, the project will ensure the quality and sustainability (eco-
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⁶⁷ Sulityo, Dwi Prayogi. 2018. "Pembangunan PLTA Batang Toru Rugikan Masyarakat Dan Lingkungan Sekitar (*The development of the Batang Toru Hydroelectric Power Plant is detrimental to the surrounding community and environment*)."
Kompas Media. Retrieved May 28, 2024 (<https://www.kompas.id/baca/utama/2018/09/20/pembangunan-plta-batang-toru-rugikan-masyarakat-dan-lingkungan-sekitar>).

⁶⁸ Doaly, Themmy. 2024. "*Lingkungan Sumatera Makin Terancam Masa Pemilu, Walhi Tuntut 7 Agenda Pemulihan (Sumatra's Environment Increasingly Threatened During Election, Walhi Demands 7 Recovery Agendas)*." *Mongabay*. Retrieved May 28, 2024 (<https://www.mongabay.co.id/2024/01/20/lingkungan-sumatera-makin-terancam-masa-pemilu-walhi-tuntut-7-agenda-pemulihan/>).

				friendly, certified) of the equipment and materials employed. Furthermore, the project will expect the active participation of the marine and coastal communities to plan, implement, manage and maintain the results of adaptations carried out. So, they will be able to do it independently, and the ecosystems will be taken care of, beyond the project period. Financial sustainability is strengthened through Activity 2.3.1, which provides technical assistance to BLU LPMUKP. The Project finances the modernization of loan management systems, streamlining of lending procedures, and staff training. Once established, these systems continue operating beyond the Project period, enabling BLU LPMUKP to sustainably provide affordable credit to fisheries-sector MSMEs. Because BLU LPMUKP operates a revolving loan model, repayments can be recycled into future lending, allowing benefits to continue and expand without ongoing donor support. Finally, sustainability is reinforced through the Project's financing continuum. Windows 1 and 2 provide grant funding to help communities, cooperatives, and MSMEs overcome early-stage barriers and develop viable climate-resilient enterprises. Activity 2.3.1 then creates pathways for successful beneficiaries to access concessional finance through BLU LPMUKP and other financing sources, enabling continued growth and reducing future reliance on grant support. This transition from grant finance to sustainable financing creates a long-term pathway for maintaining and expanding Project impacts beyond the GCF funding period.
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E.3. GCF Outcome level: Reduced emissions and increased resilience (IRMF core indicators 1-4, quantitative indicators)

GCF Result Area	IRMF Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions / Note
				Mid-term	Final ⁶⁹	
Total GHG emission reduction	<u>Core 1: GHG emissions reduced, avoided or removed/sequestered</u>	Consolidated from the MRA4 and MRA1 rows below; Verified by the independent carbon verifier's report	0 tCO ₂ eq.	170,461 tCO ₂ e reduced, avoided or removed/sequestered,	483,322 tCO ₂ e reduced, avoided or removed/sequestered, 1,298,901 tCO ₂ e (lifespan)	Assumption: Enabling environment permits development, management, and formalization of new and existing Marine Protected Areas (MPA) and Effective Area-Based Conservation Measures (OECMs) as well as rehabilitation and restoration of mangroves and seagrass in WPP 572. Costs of environmental restoration and conservation remain stable Note: Please see Annex 22 for full assumptions and calculations.
Total Adaptation beneficiaries	<u>Core 2: Direct and indirect beneficiaries reached</u>	Consolidated from the ARA1, ARA2 and ARA4 rows below; Tracked through the project DBMS beneficiary register, de-duplicated per Annex 24.	0	<u>177,900 direct (88,950 female and 88,950 male)</u> <u>0 indirect</u> <u>0 indirect</u>	<u>355,800 direct (177,900 female and 177,900 male)</u> 1,168,548 indirect (584,274 female and 584,274 male) 10,737,504 indirect (5,368,752 female and 5,368,752 male)	<u>Mid-term target assumes half of planned grant making to direct beneficiaries is achieved by mid-term.</u> <u>All indirect beneficiaries will be achieved in the second half of Project implementation with national policy adoption, as well as the scaling of climate-resilient blue economy financing.</u> <u>Note: Please see Annex 24 for full calculations and assumptions.</u>
<u>MRA4 Forestry and land use</u>	<u>Core 1: GHG emissions reduced, avoided or</u>	Independent carbon verifier's report, drawing on MMAF GIS data and remote-sensing analysis of mangrove and seagrass	0 tCO ₂ eq.	Nature restoration: 3,363 tCO ₂ e.	Nature restoration: 18,835 tCO ₂ e.	Assumption: - Interventions will enhance carbon sequestration and

⁶⁹ The final target means the target at the end of project/programme implementation period. However, for core indicator 1 (GHG emission reduction), please also provide the target value at the end of the total lifespan period which is defined as the maximum number of years over which the impacts of the investment are expected to be effective.

	<u>removed/sequestered</u>	extent with field confirmation.		Reduced deforestation/degradation (Improve MPAs): 166,961 tCO ₂ e.	Reduced deforestation/degradation (Improve MPAs): 464,213 tCO ₂ e.	storage and lead to decreased greenhouse gas emissions. - Additionally, the rehabilitated and restored ecosystems will act as natural buffers, protecting marine and coastal communities and biodiversity against climate change impacts. Notes: Targets are based on projections of the grants to be issued for ecosystem restoration. Methods: SNI 7717:2020 and SNI 7716:2012 protocols; Annex 22 GHG methodology. Please see Annex 2 and Annex 22.
<u>MRA1 Energy generation and access</u>	<u>Core 1: GHG emissions reduced, avoided or removed/sequestered</u> <u>Supplementary 1.4: Renewable energy generated</u>	Installation and commissioning /utilization records for solar chiller systems, verified by grantee report	0 tCO₂ eq. 0 MWh	136 tCO₂e reduced/avoided 182.5 MWh	273 tCO₂e reduced/ avoided 365 MWh	Assumptions: - The mitigation impact of solar-powered chillers is calculated using an emission factor-based approach. - Baseline emissions assume grid-powered ice production/freezer use, while solar-powered freezers produce no emissions during operation. - The calculation assumes 250 solar freezers. Notes: Targets are based on projections of the grants to be issued for renewable energy. Method: Grantee

						reports will be used for monitoring GHG reductions. Please see Annex 2 and Annex 22.
<u>ARA1 Most vulnerable people and communities</u>	<u>Core 2: Direct and indirect beneficiaries reached</u>	Derived from Supplementary 2.1 and 2.5 below.	0	Total: 93,230 beneficiaries with improved resilience from adopting climate-resilient livelihood options and resilience-enhancing innovations (46,615 male and 46,615 female)	Total: 186,460 beneficiaries with improved resilience from adopting climate-resilient livelihood options and resilience-enhancing innovations (93,230 male and 93,230 female)	Assumption: - Target beneficiaries adopt and derive climate resilience benefits from improved or new climate-resilient livelihood options, practices, technologies, and innovations supported by the project, including sustainable and diversified fisheries, climate-resilient ecotourism enterprises, ecosystem restoration approaches, renewable-energy-powered technologies, climate-informed business and financing models, knowledge products and learning platforms (KLC/KMIS), and livelihood opportunities linked to collaborative MPA management and ecosystem stewardship. Notes: Data will be collected through the project's baseline, midterm, and end-line household livelihood studies and disaggregated by gender and sector/role. The total population of Indigenous Peoples (IPs) is currently unknown; therefore, no specific IP beneficiary target is included, although grant applications from

						IP communities will be affirmatively targeted. The latest national population and socio-economic survey data (BPS/SUSENAS) will be used as a contextual benchmark.
	<u>Supplementary 2.5: Beneficiaries (female/male) adopting innovations that strengthen climate change resilience</u>	Project baseline, midline and endline household livelihood surveys that record innovations adopted	0	Total: 60,620 Beneficiaries (female/male) adopting innovations that strengthen climate change resilience (30,310 male and 30,310 female)	Total: 121,240 Beneficiaries (female/male) adopting innovations that strengthen climate change resilience (60,620 male and 60,620 female)	Assumption: - Target beneficiaries adopt improved / new climate resilient livelihood options obtained from the project interventions, including knowledge products and learning platforms (KLC/KMIS), ecosystem restoration approaches, renewable-energy-powered technologies, and climate-informed business and financing approaches.
<u>ARA2 Health, well-being, food and water security</u>	<u>Core 2: Direct and indirect beneficiaries reached</u>	In this case, the Core 2 beneficiary calculation refers to beneficiaries with improved food security. MoV: Grantee reports that integrate FAO Food Insecurity Experience Scale (FIES) indicators, along with BAPANAS IKP/FSVA data and Indonesia's BPS. Grantee data (sex disaggregated) to be collected at baseline, midterm and end of project.	0	Total: 84,670 Beneficiaries (female/male) with improved food security (42,335 male and 42,335 female)	Total: 169,340 Beneficiaries (female/male) with improved food security (84,670 male and 84,670 female)	Assumption: - Target beneficiaries improve food security through increased access to and availability of aquatic foods, sustainable fisheries and mariculture production, and ecosystem services from conserved and restored marine and coastal ecosystems. Notes: Data will be collected through baseline, midterm, and end-line household food security surveys and disaggregated by gender. Indigenous Peoples (IPs) will be targeted, but quantified targets cannot be established at the FP stage. Bapanas IKP/FSVA and

						BPS data will serve as contextual benchmarks, complemented by grantee reporting using the FAO Food Insecurity Experience Scale (FIES) methodology.
<u>ARA4 Ecosystems and ecosystem services</u>	<u>Core 4: Hectares of natural resources brought under improved low-emission and/or climate-resilient management practice</u>	MMAF GIS data and legal instruments (MPA/OECM designation decrees); baseline, midline and endline studies by third-party contractor; grantee monitoring reports, EVIKA assessment for MPA management effectiveness In this case, the figures presented do not include data from Supplementary 4.1 below, which refer to ecosystem restoration.	1,319,058 ha of existing MPAs	- Existing MPAs in WPP 572: 1,319,058 ha	- Existing MPAs in WPP 572: 1,319,058 ha - New expansion of MPAs and OECMs: 3,000,000 ha Total area: 4,319,815 ha	Assumption: - MPA and OECM designation, expansion, and management effectiveness improvements are achieved as planned through support to government partners and community-based management arrangements. Notes: - Marine Protected Areas: Designated/ <i>Ditetapkan</i> 974,626 ha; Reserved/ <i>Dicadangkan</i> 344,432 ha - MPA expansion in WPP 572 by the end of 2023 surpassed 1.3 million ha. - OECM-TBD Mangrove and seagrass mapping will adhering to SNI 7717:2020 and SNI 7716:2012 protocols.
	<u>Supplementary 4.1: Hectares of terrestrial forest, terrestrial non-forest, freshwater and coastal marine areas brought under resoration and/or improved ecosystems</u>	Baseline, midline and endline studies by third-party contractor; grantee monitoring reports.	0 ha	- Mangroves restoration: 102.4 ha - Seagrass restoration: 6 ha. Total nature restoration: 108.4 ha	- Mangroves restoration: 285 ha - Seagrass restoration: 6 ha Total nature restoration: 291 ha	Assumption: - Sufficient grants are issued to restore the hectares indicated - Restored areas demonstrate sustained ecological recovery and remain under improved management during the project lifetime. Notes: - Mangroves 36,040 ha - Seagrass 24,854 ha - Coral Reefs: 170,520 ha

						Details on data sources on restoration of mangroves and seagrass are provided in Annex 22. Provision of support to MPA authorities and BEAM grants mechanism are expected to improve the quantity and quality of the ecosystems. Mangrove and seagrass mapping will adhering to SNI 7717:2020 and SNI 7716:2012 protocols.
<u>ARA4 Ecosystems and ecosystem services</u>	<u>Supplementary 4.3: Tonnes of fish stock brought under sustainable management practice</u>	Independent fish landing survey conducted by project staff, combined with MMAF fisheries production statistics.	Baseline indicators for the estimated MSY will be established within 1 year of project inception	NA - No mid-term target is set for this indicator, as the estimated MSY requires an effort data to be reliably estimated using surplus production models.	Estimated MSY (in tonnes) for priority pelagic species is maintained or increased by at least 5% from the baseline	Assumptions - Sufficient data on catch, effort, and species composition will be collected through the Project's fisheries monitoring activities (Sub-Activity 1.1.2.2) to enable robust re-estimation of MSY at end-line (Y5) - Improvements in stock status (reflected in increased MSY) are attributable to improved fisheries management practices, including the implementation of the Harvest Strategy and quota-based management. Notes - MSY is the standard fisheries management reference point used by MMAF to determine allowable catch and set quotas. - The fishery target commodities for this indicator are pelagic fishes, which are the primary commercial and subsistence species in WPP 572. - Surplus Production Model methodology will be applied

E.4. GCF Outcome level: Enabling environment (IRMF core indicators 5-8 as applicable)					
Core Indicator	Baseline context (description)	Rating for current state (baseline)	Target scenario (description)	How the project will contribute	Coverage
Core Indicator 5: Degree to which GCF investments contribute to strengthening institutional and regulatory frameworks for low emission climate-resilient development pathways in a country-driven manner	The GoI allocates significant national funding for mitigation and adaptation actions in 2020–2030. However, national funding and policy do not necessarily align with sub-national institutional and regulatory frameworks. This is because local governments have their authority, regulation, and budget allocation based on Law No. 22/1999 on decentralization, which was revised by Law No. 32/2004 and Law No. 23/2014, respectively. Law 23/2014 in Indonesia significantly impacts establishment and management of Marine Protected Areas (MPAs) and blue carbon ecosystem conservation, transferring provincial government authority to the central government. This includes the identification of MPAs of national significance, such as marine conservation areas.	<u>medium</u>	Institutional and regulatory frameworks at the national level are: (i) coherent with the sub-national plan documents and strategies; (ii) supported with budget allocations and annual expenditures from central sources; (iii) reporting increased investment in the blue economy, climate, and sustainable development sectors;	Assessing the coherence of existing institutional and regulatory frameworks at national and sub-national levels, producing recommendations and providing necessary assistance to enhance them through Activity 1.1.1. It specifically aims at enhancing institutional and regulatory frameworks for ecosystem protection, fisheries sustainability, and innovative financing. Facilitate regulation revisions and development of new regulations to promote MPAs and conservation areas, thereby reducing greenhouse gas emissions. The project aims to conserve and restore carbon-rich ecosystems in WPP 572, utilizing small-scale renewable energy to reduce GHG emissions and enhance climate resilience. Promote the production, update, consolidation, and better use of data on fisheries and relevant coastal and marine ecosystems. This will contribute to the evidence-based recommendation or establishment of new policies and the rescinding and/or adjustment of outdated policies.	<u>National level (one country)</u>
Core indicator 7: Degree to which GCF Investments contribute to market development/tra	MSMEs are the backbone of Indonesia's economy, contributing 61% of the GDP and employing nearly 97% of the workforce. However, they contribute less than 16% to exports and face significant challenges including: (i) limited access to finance; (ii) knowledge of how to sell	<u>low</u>	The quantity and quality of Blue Economy-aligned enterprise partners (including MSMEs) is growing. The project expects that the 2X	The project will use the criteria or guidelines developed to assess and choose those enterprises that are qualified to get assistance, including funds, as described in the Investment Readiness Window Implementation Plan.	<u>Multiple sub-national areas within</u>

<u>Information at the sectoral, local, or national level</u>	to and access the market; (iii) awareness and knowledge of how to do sustainable business; (iv) low productivity and innovation ; (v) informal set-up; and (vi) intrinsic market failures applicable to the blue economy, such as unproven higher risk perceptions or market access challenges	Criteria ⁷⁰ on the global baseline standard of gender lens investing will be achieved. Through the project interventions, the following scenario of the blue economy market and investment in Indonesia are expected: Improved deal pipeline and investment readiness for MSMEs, startups, and project developers in eligible blue sectors in WPP572 coastal region, while incentivizing businesses to expand in the project target geography. Local/regional investors and businesses to raise capital through blue sector focused financial products and to allocate capital for the growth of blue economy are catalyzed; Local and foreign sources of capital for blue economy investments in Indonesia are unlocked; A thriving blue economy ecosystem in target geography is enabled	Moreover, through Activity 2.3.1, BEAM targets: (i) developing enterprise access to finance; (ii) conducting action-oriented research papers; (iii) providing technical assistance, and; (iv) market building and industry advocacy. The Project will: • Foster new blue economy enterprises through grants and technical assistance, addressing knowledge gaps and capital allocation to increase investor proficiency and capital allocation in the blue economy. • Assess the blue practices of the program's sub-grantees and build their capacity to adopt and integrate sustainable blue practices. • Bring together various stakeholders in the blue economy, including enterprises, banks, investors, NGOs, and local and national governments, to strengthen their capacity and commitment to scale the blue economy in WPP572 region and Indonesia.	<u>a</u> <u>country</u> <u>✓</u>
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⁷⁰ 2X Challenge. (2024). *2X Criteria Reference Guide*. February 2024.

https://static1.squarespace.com/static/5b180402c3c16a6fe0001e45/t/65e72c44689786427b5b0889/1709648967612/2X+Criteria+Reference+Guide_February+2024.pdf

Core indicator 8: <u>Degree to which GCF investments contribute to effective knowledge generation and learning processes, and use of good practices, methodologies and standards</u>	Indonesian organizations have been sharing knowledge on sustainable livelihoods, climate change adaptation, and mitigation strategies through various methods, including websites, workshops, and online learning processes. For example: 1. Workshop on Blue Carbon Indonesia Strategy for Achieving Nationally Determined Contribution (NDC) Targets and Implementation of Carbon Economic Value (NEK) that was organized hybrid by MMAF, JICA, and UNDP on 24 January 2023⁷¹. 2. Climate Risk and Impact Assessment of Pekalongan, Indonesia⁷². 3. Knowledge generated by USAID – APIK (<i>Adaptasi Perubahan Iklim dan Ketangguhan – Climate Change Adaptation and Resilience</i>)⁷³ At the sub-national level, knowledge generation and sharing primarily focuses on Java. This can be concluded from the number of disaster-related, including climate-related disaster research publications, focused on the island⁷⁴, despite its relatively lower multi-hazard disaster risk index. 4. The Directorate of Climate Change Adaptation at The Ministry of Environment	<i>low</i>	Standards, guidelines, systems for inclusive implementation, monitoring, and evaluation, and best practices are developed to: (i) target a transition toward a blue economy that encourages evidence generation; (ii) recognize and address the needs of women and most vulnerable groups; (iii) strengthen analytic capacity and knowledge building; (iv) enhance policy and decision making; (v) be supported by fit-for-purpose grants that help businesses align investments with climate and sustainable development outcomes; (vi) share lessons about what works and what does not work among diverse stakeholders at provincial and national levels; (vi) feed into timely reviews and adaptive management.	BEAM will specifically target: i) inclusive production and consolidation of up-to-date data for improved management of fisheries and marine and coastal ecosystems (Activity 1.1.2.) ii) establishment of knowledge management and learning center which acts as a hub for capacity building, knowledge collections, exchange and sharing, and amplification of the project's outputs and achievements, as well as building lessons learned (Activity 1.1.3). iii) capacity building in all activities for the improvement of enabling environment, climate change adaptation, mitigation strategies, investment readiness, and grant management. The project will generate standards, guidelines, implementation mechanisms, monitoring, evaluation, and best practices. A key differentiator is that BEAM will focus on applied knowledge generation and application of good practices. Drawing from the learnings of blue economy enterprise development through integrated demand and supply -side interventions, the project aims to create a blueprint for scaling across Indonesia. Action-oriented research papers will provide insights and guidance to the government and private sector on expanding blue economy sectors beyond the fisheries sector in WPP572.	<i>Multiple sub-national areas with in a country</i>
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⁷¹ CMMIA. (2023). Workshop on Blue Carbon Indonesia Strategy for Achieving Nationally Determined Contribution (NDC) Targets and Implementation of Carbon Economic Value (NEK). <https://www.youtube.com/watch?v=oc0euaVwbcM>

⁷² Syam, D., Wengi, K., & Gandapurnama, A. (2021). Climate Risk and Impact Assessment of Pekalongan, Indonesia. In Technical Working Report (Issue July). [https://www.mercycorps.or.id/sites/default/files/dokumen/Climate risk and impact assesment_Pekalongan_MercyCorpsIndonesia_final.pdf](https://www.mercycorps.or.id/sites/default/files/dokumen/Climate%20risk%20and%20impact%20assessment_Pekalongan_MercyCorpsIndonesia_final.pdf)

⁷³ USAID APIK | weADAPT

⁷⁴ Carli (n.d.). Disaster-related Research Publication in Indonesia of 2022 - A Year in Review. Indonesia Disaster Knowledge Update. Retrieved May 23, 2023, from https://knowledge.caribencana.id/special_brief/idku-jan-23

	(MoE), has created The System for Identifying Village Vulnerability Index (SIDIK) ⁷⁵ that displays vulnerability indexes for different jurisdictions, allowing local governments to access and verify data inconsistencies. The MoE collaborates with National Agencies for Geospatial Information (BIG) and National Agency for Meteorology, Climatology and Geophysics (BMKG) to refine the SIDIK. BIG supplies geospatial data representing exposure levels, while BMKG provides climate hazards and future extreme events.				
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E.5. Project/programme specific indicators (project outcomes and outputs)

Project/programme results (outcomes/ outputs)	Project/programme specific Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions / Note
				Mid-term	Final	
Outcome 1. Improved legal, regulatory, and financial conditions that facilitate climate responsive protection and production in coastal & marine areas	a) Number of improved policy and regulatory frameworks on ecosystem protection, fisheries sustainability, and innovative financing as a result of BEAM interventions.	Baseline, mid-term, and end of project studies analyzing government legal instruments, reports, institutional and regulatory framework	0	3 improved policies and regulatory frameworks	11 improved policies and regulatory frameworks	Assumption: i) Strong political will and commitment, regardless of leadership change, coupled with the enactment of consistent, clear, and transparent laws and regulations. Note: i) Policy and regulatory framework ranging from the constitution to district regulations, including technical and implementation guidelines, as well as: Policy recommendations for provincial government work plan (RKPD), provincial agency strategic planning (<i>Renstra Dinas</i>), or Provincial level SOP/guidelines

⁷⁵ Inventory system for vulnerability index in Indonesia. Retrieved May 2, 2025.

<http://perpustakaan.menlhk.go.id/pustaka/images/docs/INVENTORY%20SYSTEM%20FOR%20VULNERABILITY%20INDEX%20IN%20INDONESIA.pdf>.

						on the Blue Economy, Sustainable Fisheries, Marine Conservation • Development and management of marine protected areas (MPAs). • Policy recommendations for the new establishment or expansion (new and existing) of MPAs • Fisheries management plan, fisheries harvest strategy - HS, fisheries harvest control rule - HCR). Those related to blue investment include, but are not limited to, blue bond and blended finance. ii) There will be approximately 11 policy and regulatory frameworks improved covering the issues noted in the footnote for output 1.1 iii) At least 1 policy from relevant government institutions with the objective of addressing barriers for women working in the fishery sector in accessing social protection programs (e.g., KUSUKA).
	b) Number of direct beneficiaries adopting innovations that strengthen climate resilience (contributes to Core 2)	Attendance records and reports from workshops and meetings as well as KLC visitors. Statistically sampled surveys for these participants and visitors to assess knowledge and adoption of climate-responsive innovations.	0	57,120 individuals (28,560 men / 28,560 women)	114,240 individuals (57,120 men / 57,120 women)	Assumptions - Government agencies, communities, research institutions, and other stakeholders actively participate in BEAM-supported meetings, workshops, trainings, and knowledge-sharing activities. - Participants have continued access to knowledge products and learning resources developed through the Knowledge and Learning Centre (KLC). - Knowledge gained through BEAM interventions translates into the adoption of climate-responsive policies, practices, technologies, or management approaches.

						- Institutional and policy support for climate-responsive coastal and marine management remains in place throughout the project period. Notes - Beneficiaries are individuals adopting innovations, knowledge, or practices that strengthen climate resilience through BEAM-supported capacity-building and knowledge-sharing activities. - Beneficiary estimates are based on Annex 24 methodologies. - Innovations may include improved ecosystem management, sustainable fisheries practices, climate-responsive planning, blue economy approaches, and innovative financing mechanisms. - Data will be disaggregated by sex and reported through the project M&E system.
	c) Number of indirect beneficiaries expected to benefit from improved policy, regulatory, institutional, and financing conditions for climate-resilient blue economy sectors (contributes to Core 2)	Evidence of adoption, operationalization, or use of PPP framework and related policy reforms by relevant government, private sector, or community actors; policy implementation documentation.	0	NA	1,168,548 (implementation period) 10,737,504 indirect beneficiaries (over project lifespan)	Assumptions - Policy, regulatory, financing, and institutional reforms supported by BEAM are adopted and operationalized by relevant stakeholders. - Improved enabling conditions facilitate wider uptake of sustainable fisheries, marine conservation, mariculture, and blue economy investments. - National and sub-national government institutions continue supporting implementation of policy and regulatory reforms beyond the project period. - Private sector and community actors utilize the improved policy and financing environment to strengthen climate-resilient economic activities. Notes - Indirect beneficiaries are individuals who benefit from improved policy, regulatory, institutional, and financing conditions but do not receive direct support from BEAM.

						- Beneficiary estimates are based on Annex 24 methodologies and represent people working in or relying on marine capture fisheries, mariculture, and marine ecotourism sectors in coastal villages across Indonesia. - Benefits are expected through improved access to sustainable resource management, financing opportunities, ecosystem services, food security, and climate-resilient livelihoods. - Indirect beneficiaries will be reported based on evidence of adoption, operationalization, or use of the supported policy, regulatory, and financing frameworks.
Outcome 2: Strengthened climate resilience of coastal communities in WPP572 through improved livelihoods and food security	a) Targeted coastal population with improved food security b) Targeted coastal population with improved livelihoods	- Grantee reports that integrate FAO Food Insecurity Experience Scale (FIES) indicators, along with Bapanas IKP/FSVA data and Indonesia's BPS. Grantee data (sex disaggregated) to be collected at baseline, midterm and the end of project.	0	a) 84,670 individuals with improved food security (42,335 female and 42,335 male) b) 32,610 individuals with improved livelihoods (16,305 female and 16,305 male)	a) 169,340 individuals with improved food security (84,670 female and 84,670 male) b) 65,220 individuals with improved livelihoods (32,610 female and 32,610 male)	Assumption: i) Capacity-building activities carried out with the BEAM grants under Component 2 lead to improved livelihood capital assets. Note: i) Data is disaggregated by sex and the typology of beneficiaries (households, businesses, and institutions). The data collected includes vulnerability status, assets, and location. ii) See calculations and detailed methodologies in Annex 24 iii) The EE will reference MoE's SIDIK, a system that displays vulnerability indexes for various jurisdictions, enabling local governments to verify data inconsistencies and add new indicators. iv) Bapanas IKP / FSVA, retained as a contextual area-level benchmark. v) Grantee reports that integrate FAO FIES methodology will strengthen the analysis of food security situation given by BPS and Bapanas

Outcome 3: Improved condition and extent of coastal ecosystems in WPP 572 resulting in reduced GHG emissions	a) Extent and percent of reduced loss of blue carbon ecosystems in WPP 572	- Remote-sensing analysis of mangrove and seagrass extent with field ground-truthing, conducted by a third-party contractor; MMAF GIS data as the reference dataset.	Baseline ecosystem loss: Mangrove (40.53 ha by mid-term; 80.95 ha by final-term) Seagrass (784.91 ha by mid-term; 1,505.39 ha by final-term)	Target avoided loss: Mangrove (34.13% or 13.83 ha) Seagrass (34.31% or 269.28 ha)	Target avoided loss: Mangrove (44.15% or 35.74 ha) Seagrass (50.36% or 758.05 ha)	Assumption: 1) Strong political will and commitment, regardless of leadership change, coupled with the enactment of consistent, clear, and transparent laws and regulations. ii) Quality (and certified) seeds/seedlings are planted iii) Communities (taking into account the most vulnerable grouper and gender-balanced proportion) actively participate in conservation and rehabilitation. This includes (but is not limited to) ecosystem planning, implementation, and protection. For example in the community consultations (for planning and implementation), at least 30% of participants are women/vulnerable groups. Note: Blue carbon ecosystems cover mangroves and seagrass. Data towards this outcome will be disaggregated by ecosystem type and area. During project implementation, the EE will closely coordinate with MoE's Deputy for Climate Change Control and Carbon Economic Value Governance which manages NDC's targets and developments on Indonesia's carbon value and standard framework, shaping carbon market and emission reduction policies. SNI protocols and Annex 22 carbon methodology will be applied.
	b) Number of direct beneficiaries with improved resilience benefits from restored coastal ecosystems and renewable energy technologies	Grantee reports, verified by KI field inspection; ecosystem restoration monitoring reports; beneficiary records from supported villages; renewable energy deployment reports; sex-disaggregated beneficiary data.	0	20,650 individuals (10,325 men / 10,325 male)	41,300 individuals (20,650 men / 20,650 women)	Assumptions - Restoration and protection activities are implemented as planned and achieve expected ecosystem recovery outcomes. - Communities actively participate in ecosystem restoration, protection, and monitoring. - Environmental and climate conditions remain suitable for mangrove and seagrass recovery.

						- Government agencies continue supporting ecosystem management, protection, and monitoring efforts in WPP 572. Notes - Beneficiaries are individuals whose resilience is strengthened through improved ecosystem services from restored coastal ecosystems and the adoption of renewable energy technologies. - Beneficiary estimates are based on Annex 24 methodologies. - Improved resilience benefits include enhanced food security, livelihood stability, coastal protection, ecosystem services, and reduced vulnerability to climate-related shocks.
Outcome 4: Improved economic performance and climate resilience of blue economy in WPP572	a) Number of loans from WPP 572 provinces awarded by BLU LPMUKP above pre-project period baseline	- BLU LPMUKP loan application pipeline data disaggregated by province and verified against LPMUKP's internal application management system - BLU LPMUKP annual performance report	0	50 new loans disbursed to WPP 572 enterprises	200 new loans disbursed to WPP 572 enterprises	Assumption: - BLU LPMUKP continues to receive government budget allocations for loan capital including adequate replenishment of the revolving fund to support new disbursements in WPP 572. - The digitized loan management system is successfully deployed and adopted by extension officers. - Streamlined procedures do not compromise prudent credit risk assessment. - NPL recovery and loan repayments from existing debtors contribute sufficiently to revolving fund availability for new lending cycles - MMAF policy direction and institutional arrangements – including the collaboration with Pusat Penyuluhan – remains supportive of BLU LPMUKP's lending mandate in WPP 572 throughout the project period
	b) Number of direct beneficiaries with improved climate-resilient livelihoods	BLU LPMUKP quarterly operational reports; IT loan management system data; training attendance and post-training assessment	0	5,600 individuals	11,200 individuals	Assumptions - BLU LPMUKP maintains sufficient lending capital and operational capacity to support increased loan disbursement in WPP 572.

	through increased access to blue economy finance and investment readiness support	records; independent verification of new borrowers disaggregated by gender, sector, and location; .		(2,800 men / 2,800 women)	(5,600 men / 5,600 women)	- The digitized loan management system and streamlined procedures continue to improve access to finance for coastal enterprises. - Borrowers utilize financing for productive investments that strengthen business performance and climate resilience - Loan repayment performance remains adequate to sustain revolving fund availability and future lending cycles. - MMAF, BLU LPMUKP, and local partners continue supporting implementation and outreach to target beneficiaries. Notes - Beneficiaries are individuals whose livelihoods are strengthened through improved access to finance and investment readiness support. - Beneficiary estimates are based on Annex 24 methodologies and reported as unique beneficiaries after applying adjustments to avoid double counting. - Improved climate-resilient livelihoods include increased income stability, improved access to financial services, and enhanced capacity to invest in climate-resilient business practices. - Data will be disaggregated by sex, enterprise type, and geographic location and reported through the project M&E system
COMPONENT 1: Strengthen Enabling Conditions (KI)						
Output 1.1. Development and deployment of evidence-based regulatory frameworks and	a) Number of drafts of regulatory frameworks on ecosystem protection, fisheries sustainability, and innovative	Baseline, mid-term, and end of project studies analyzing government legal instruments, reports, institutional and regulatory frameworks	0	3	11	Assumption: i) Strong political will and commitment, regardless of leadership change, coupled with the enactment of consistent, clear, and transparent laws and regulations. Note:

knowledge products for ecosystem protection, fisheries sustainability, and innovative financing	financing developed.					i) Policy and regulatory framework ranging from the constitution to district regulations, including technical and implementation guidelines. ii) There will be approximately 11 drafts of policy and regulatory frameworks developed covering the topics noted in the footnote.⁷⁶ iii) At least 1 policy from relevant government institutions with the objective to address barriers of female actors in fishery to access social protection programs (e.g., KUSUKA). iv) National and regional planning documents such as RPJMN, RPJMD, Renstra. v) Ministerial regulations related to: integrated protection-production, non-conventional funding resources, management of conservation grant. vi) Development and management of Marine Protected Areas (MPAs). vii) Development and management of other area-based conservation measures. viii) Fisheries Management Plan (Fisheries Management Plan or <i>Rencana Pengelolaan Perikanan</i> - RPP WPP 572, Fisheries Harvest Strategy - HS, Fisheries Harvest Control Rule - HCR). ix) Interregional Area Zoning Plan or <i>Rencana Zonasi Kawasan Antarwilayah</i> - RZ KAW; Coastal Areas and Small Islands Zoning Plan x) Those related to innovative financing include, but are not limited to, blue bonds and blended finance.
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⁷⁶ Assumed topics covered: fisheries management plan (*RPP*) WPP 572 Provinces; 1 Harvest Strategy for WPP 572 & Harvest Control rule for WPP 572; 3 technical documents on the proposed new MPA; 3 zonation plans; 3 management plannings; 2 provincial (Sumatera Utara and Barat) regulation on MPA designation. Government regulations on: 1 Non-conventional funding resources to support PnP scheme; 3 Ministerial decrees on new MPA establishment (1 large scale, 2 provincial level); 2 governor (Sumatera Utara and Barat) decrees on management of conservation grant (BLUD); 2 regional ((Sumatera Utara and Barat) planning documents related to fisheries, eco-tourism, and conservation/MPA.

	b) Number of data sets on fisheries and relevant coastal and marine ecosystems produced, updated, consolidated, and better used by government and non-government entities.	- Project monitoring reports on data sets produced; government (e.g. BRIN) and non-government planning and policy documents demonstrating use of the data sets.	0	5 data sets produced	8 data sets produced	Assumption: i) Government and non-government entities use robust methodology of data production, update, consolidate, and use. Note: i) The data quality will be improved from the existing baseline situation. ii) The data includes seagrass and mangroves ecosystems, commodities-based fish, and socio-economic information. iii) A GESI-responsive approach will be applied in collecting the data, e.g., sex, socio-economic-disaggregated commodity farmers, and supply and value chain. iv) The intervention will be focused on large-scale MPAs, MPAs within north Sumatra and West Sumatra Provinces, and other MPAs within the WPP 572 region.
	c) Number of knowledge and learning center is established for enhanced ecosystem management and sustainable fishing practices.	Signed MoU or establishment agreement with the host university, and the centre's operational records (governance documents, annual work plan).	0	1 knowledge and learning center is established	1 knowledge and learning center is established	Assumption: i) Government and non-government organizations fully and actively participate in the knowledge and learning center establishment. Note: - The knowledge and learning center will be established within a local university in WPP 572. It will start its operation in the Y2. - Regular monitoring and activity reports on knowledge and learning center produced by consultants, government agencies, non-government agencies, and KI will support the evidence of establishment
	d) Number of lesson-learned documents on grant operations, pipeline development and successful blue economy interventions for scaling up and replicability	Published lessons-learned documents (project report)	0	1 lessons-learned document drafted	1 lessons-learned document developed	Assumption: i) Multiple stakeholders (taking into account the most vulnerable groups and ensuring gender equality) fully and actively participate in the lesson learned document's development.

						ii) The lesson learned document is aligned at the national and sub-national levels and based on lessons learned across the two Components. iii) Lessons are integrated into further investments made through the IRW and government of Indonesia blue financing strategies. Note: i) The target is set for 1 document which consists of lessons-learned from 6 of the WPP 572 provinces. In the initial years (up to midterm) the activity will focus on identifying/building suitable models (or piloting) and drafting the document for scaling finance over the long-term. ii) The document will make specific recommendations for the replicability of the Blue Halo S production and protection model across Indonesia and the region based on lessons learned from grant activities. The lessons will be amplified through the communications strategy supported under Activity 1.1.3 iii) The reports will be produced by KI and grantees.
	e) Number of beneficiaries adopting innovations to strengthen climate resilience	Attendance records and reports from workshops and meetings as well as KLC visitors. Report of Statistically sampled surveys to be conducted for these participants and visitors to assess knowledge and adoption of climate-responsive innovations.	0	57,120 individuals (28,560 men / 28,560 women)	114,240 individuals (57,120 men / 57,120 women)	Please see detailed methodologies presented in Annex 24
COMPONENT 2: Locally Led Climate Action + Investment Readiness						
Output 2.1: Locally-led climate adaptation projects are effectively implemented	a) Number of vulnerable coastal community members who receive direct climate resilience benefits from supported activities pertaining to adaptation	Grantee monitoring and activity reports, verified by KI field inspection.	0	94,530 individuals (47,265 men / 47,265 women)	189,060 individuals (94,530 men / 94,530 women)	Assumption: i) Targeted coastal community members (take into account the most vulnerable groups and gender-balanced proportion) fully and actively participate in climate change adaptation interventions.

d and monitored, resulting in enhanced climate resilience of vulnerable communities	interventions in WPP 572					ii) Grantees are accountable, effective, and efficient in implementing the adaptation interventions. Notes: i) Data is disaggregated by gender and type of adaptation intervention received such as ecotourism enterprises for community development, collaborative MPA management, etc. ii) Note that here and for all on-granting, prioritization will be given to indigenous and other marginalized communities. Data do not exist on total IP populations, so no specific target is presented here / throughout the logical framework.
Output 2.2: Blue carbon and renewable energy projects are effectively implemented and monitored, resulting in reduced GHG emissions	a) Hectares of carbon-rich ecosystems conserved and rehabilitated.	- Remote-sensing analysis of mangrove and seagrass extent with field confirmation, conducted by a third-party contractor.	0	• Mangroves restoration: 102.4 hectares • Seagrass restoration: 6 hectares.	• Mangroves restoration: 285 hectares • Seagrass restoration: 6 hectares.	Assumption: i) Quality (and certified) seeds/seedlings are planted. ii) Coastal community members (taking into account the most vulnerable groups and gender-balanced proportion of stakeholders) fully and actively participate in conservation and rehabilitation. This includes (but is not limited to) ecosystem planning, implementation, and protection. For example, in the community consultations (for planning and implementation), at least 30% of the participants are women and vulnerable groups. iii) Grantees are accountable, effective, and efficient in conserving and rehabilitating the ecosystems. Note: - Blue carbon ecosystems cover mangroves and seagrass. - SNI protocols for mangrove and seagrass mapping (SNI 7717 2020 and SNI 7716:2012)

	b) Number of individuals with improved climate resilience resulting from mitigation interventions (improved livelihoods and or food security)	Grantee monitoring and activity reports, verified by KI field inspection. Sex aggregated.	0	20,650 individuals (10,325 male / 10,325 female)	41,300 individuals (20,650 male / 20,650 female)	Note: Please see detailed calculations and methodologies presented in Annex 24 and 24a
	c) Kilowatt-hour small-scale renewable energy deployed/installed	Grantee monitoring and activity reports, verified by KI field inspection	0	400 - 800 kW per day (from 100 solar chiller systems)	800 - 1600 kW per day (from 250 solar chiller systems)	Assumption: Coastal community members (taking into account the most vulnerable groups and gender-balanced proportion of stakeholders) fully and actively participate in renewable energy installation. This includes (but is not limited to) planning, implementation, and maintenance. For instance: - in the community consultations (for planning and implementation), at least 30% of the participants are women and vulnerable groups. - targeted communities are expected to independently fund maintenance using their increased income, profit, or savings resulting from the installation. - Grantees are accountable, effective, and efficient in resourcing and installing renewable energy.
Output 2.3: Blue economy enterprises have improved access to finance and expand operations in WPP 572	a) Number of BLU LPMUKP extension officers trained in simplified disbursement methods and - Deployment of new loan management system	- Training attendance records - Post-training competency assessments - New system indicator verified against BLU LPMUKP internal records, the service providers/consultants	- 0 officers trained - No IT loan management system exist under BEAM	- 30 officers trained - It loan management system operational and actively used to process a pilot cohort of at least 50 loan applications	- 100 officers trained - IT loan management system fully operational; simplified application SOPs adopted and in active use by trained extension officers to	Assumptions: i) Officers are available and willing to participate ii) Training materials are appropriate for local literacy and digital skill levels

				from WPP 572 enterprises	process at least 200 additional loan applications from WPP 572	
	b) Number of action-oriented research papers produced and disseminated to financial intermediaries, development partners, and policy makers	- Published research papers - Dissemination event reports (workshops, webinars, policy briefs) - List of recipient organizations	0	2 papers	4 papers	Assumption: i) Research consultants are procured on time and deliver high-quality, practitioner-focused outputs. ii) Target audiences actively engage with and use the papers to inform investment decisions or policy. Note: Topics include market segmentation of blue economy enterprises in WPP 572, enabling fisheries cooperatives, green shipping opportunities, and marine tourism investment roadmaps.
	c) Number of individuals with improved climate resilience from improved and diversified livelihoods	- BLU LPMUKP loan application and issuance reports	0	2,800 individuals (1,400 male / 1,400 female)	11,200 individuals (5,600 male / 5,600 female)	Note: please see detailed methodologies in Annex 24. Midline assumes 50 loans issued, endline assumes 200 loans issued
Project/programme co-benefit indicators						
Environmental Co-benefit: Improved biodiversity and habitat quality in WPP 572	Coral reef habitat quality (coral cover within targeted MPAs)	- Survey reports on habitat quality and coverage by consultants, grantees and MPA management unit (in targeted MPAs)	Coral coverage at several MPAs in WPP 572 ranges from 22.30 – 47.20% ⁷⁷	Coral reef: coral cover within MPAs is maintained as in the baseline	Coral reef: coral cover within MPAs is increased by 2-3%.	Coral cover is used as a proxy for coral reef ecosystem condition and its capacity to provide ecosystem services.

⁷⁷ Coral cover data (2020-2023) from several MPAs in WPP 572: MPA Sawo Lahewa (30.06%), MPA Kota Padang (28.94%), MPA Kota Pariaman (25.53%) MPA Pasaman Barat (36.67%), MPA Selat Bunga Laut Mentawai (34.11%, MPA Pulau Pieh (47.20%), and MPA Kabupaten Agam (22.30%).

Environmental Co-benefit: Improved biodiversity and habitat quality in WPP 572	Mangrove habitat quality (mangrove density)	- Mangrove survey reports by consultants and grantees and relevant government agencies in targeted sites.	Mangrove condition with high density (>70%) ranges from 73.9 – 92.9% ⁷⁸	Mangrove: average proportion of >70% density is maintained at 83%.	Mangrove: average proportion of >70% density is at 85%.	Mangrove density is used as a proxy for ecosystem health and ecosystem service provision.
Social Co-benefit: Increased income generating opportunities for women in fisheries	Percent of targeted women (particularly female-headed household and other vulnerable groups) in blue economy sectors and fisheries with increased income	- Report of household livelihood survey of targeted beneficiaries, with sex-disaggregated data on income.	0	25% of female beneficiaries have improved income	50% of female beneficiaries have improved income	Women's income is expected through improved access to climate-resilient livelihood opportunities, productive assets, skills, financing, and market opportunities supported by the Project. Data will be disaggregated by age, disability, social and economic status and occupation. Analysis of IP beneficiaries will also be conducted

E.6. Project/programme activities and deliverables

	Description	Sub-activities	Deliverables
COMPONENT 1: Strengthen Enabling Conditions (KI)			
Activity 1.1.1. Enhance Ecosystem Protection and Fisheries Sustainability through	This activity will support the national government and relevant sub-national entities in the creation, improvement, and management of new regulatory frameworks and policies for ecosystem protection and sustainable fishery management by providing technical assistance to sub-national governments for	Sub-Activity 1.1.1.1. Provide technical assistance to provincial governments for effective implementation of national vision and policies.	Deliverable 1.1.1.1.i. technical meetings, trainings, and consultation workshops on the Blue Economy, Fisheries, and Marine Conservation are conducted with key government stakeholders at national and provincial levels in North Sumatra and West Sumatra. Deliverable 1.1.1.1.ii. Policy recommendations are produced for the provinces of North Sumatra and West Sumatra: i. Minimum 2 policy recommendations for provincial government regulatory frameworks and policies. Deliverable 1.1.1.1.iii. Minimum 2 provincial level SOP/guidelines on the Blue Economy, Sustainable Fisheries, and Marine Conservation are developed at North Sumatra and West Sumatra Provinces.

⁷⁸ Average of mangrove condition with high density (>70%) in each WPP 572 provinces: Aceh (86.3%), North Sumatra (73.9%), West Sumatra (77.8%), Bengkulu (92.9%), Lampung (90.1%), Banten (79.6%). Source: MoEF 2021 (detail of data can be accessed at **Annex 2, Section 2**)

Policy Reform and creation of Innovative Financing Mechanisms	effective implementation of national vision and policies, providing support in MPA expansion and sustainable fisheries management, and providing support for the development of a sustainable blue financing mechanism. Activity 1.1.1. is directed at technical staff within the Ministry of Marine Affairs and Fisheries (MMAF), among other government stakeholders and technical consultants.	Sub-Activity 1.1.1.2. Support the development, gazettement, and management of new and existing Marine Protected Areas (MPAs) and Other Effective Area-based Conservation Measures (OECMs).	Deliverable 1.1.1.2.i. The following MPA-related interventions that comply with MMAF regulation No.31/2020 are facilitated for 1 new national MPA and 2 new provincial MPAs: - development of working group (<i>Pokja</i>) for the targeted new/expansion MPAs at national and provincial levels. - technical meetings and consultation workshops for MPA initiation and MPA zoning plans. - development of MPA initiative document, enactment of MPA designation (<i>pencadangan</i>) decrees, MPA zoning plan, and enactment of MPA establishment/expansion decrees. Deliverable 1.1.1.2.ii. Develop at least a national-level policy recommendation to establish a Public-Private Partnership (PPP) mechanism for Marine Protected Area (MPA) management. Deliverable 1.1.1.2.iii. evaluations of MPA management effectiveness by MMAF using EVIKA are facilitated for MPAs within the North Sumatra and West Sumatra Provinces. Deliverable 1.1.1.2.iv. Strengthening and enhancing surveillance practices for MPAs within the North Sumatra and West Sumatra Provinces: - MPA and sustainable fisheries awareness-raising for local communities and fishers are organized - training on surveillance practices for local government agencies and local community surveillance groups (<i>POKMASWAS - Kelompok Masyarakat Pengawas</i>) are organized
		Sub-Activity 1.1.1.3. Reinforce the current Fisheries Management Plan (<i>Rencana Pengelolaan Perikanan - RPP</i>) including its Fisheries Harvest Strategy in WPP 572. Sub-Activity 1.1.1.4. Advance sustainable blue/green finance through the development of innovative financing mechanisms and the development of policies related to integrated protection-production and sustainable funding resources	Deliverable 1.1.1.3.i. The development of sustainable fisheries management document for the targeted fish commodities (i.e., pelagic fishes) of WPP 572 which comprises of: - a working group (<i>Pokja</i>) to develop a Fisheries Harvest Strategy (HS) for the targeted fish commodities in the WPP 572 is established - workshops and technical meetings on socialization and awareness of sustainable fisheries management are organized. - trainings on Fisheries Harvest Strategy development are organized. - a Harvest Strategy (HS) document for the targeted fish commodities (i.e., pelagic fishes) of WPP 572 is developed and effectively implemented. Deliverable 1.1.1.4.i. 1 Sustainable Blue Financing Mechanism for MPA, such as <i>BLUD</i>, is developed in the provinces either in North Sumatra or West Sumatra, and the following BLUD-related development is facilitated:

			a. the development of working group (<i>Pokja</i>) for the Sustainable Blue Financing Mechanism b. capacity building for government stakeholders to increase knowledge on Sustainable Blue Financing Mechanism the targeted Sustainable Blue Financing Mechanism are endorsed by the provincial government
Activity 1.1.2. Improve the production and use of data on fisheries and ecosystems by governmental and non-governmental entities	This activity will establish a baseline of ecosystem and fisheries stock conditions, focusing on health, surface area, and volume. This baseline is crucial for the development of effective management plans and serves as fundamental indicators for enhanced marine management. This activity will also formulate a comprehensive plan for conducting Gender, Equality, and Socially Inclusive (GESI)- responsive data surveys.	Sub-Activity 1.1.2.1 Support the Government of Indonesia's existing data collection initiatives to improve and utilize data on ecological and socioeconomic in MPAs and areas for potential MPA expansion and OECSMs.	Deliverable 1.1.2.1.i. Monitoring and data management system for ecological and socioeconomic data are strengthened through multi-stakeholders' meetings or workshops, and technical assistance. Deliverables 1.1.2.1.ii. Training for the MPA technical unit and local universities to conduct ecological and socioeconomic surveys and data analysis is organized within the province of North Sumatra and West Sumatra. Deliverables 1.1.2.1.iii. Data of ecological and socioeconomic for the new targeted MPAs (at the sub-activity 1.1.2) and existing MPAs within North Sumatra and West Sumatra Provinces are gathered.
		Sub-Activity 1.1.2.2. Gather data on the targeted fish commodities (biodiversity, volume, spatial distribution) to support sustainable fisheries management within WPP 572.	Deliverable 1.1.2.2.i. Improved and more sustainable fishery monitoring system (i.e., fish landing monitoring by KI and data collection using a logbook by MMAF is supported) for the targeted fish commodities and data management system for fisheries within the WPP 572. Deliverable 1.1.2.2.ii. Training for enumerators (including government stakeholders) on fisheries' data collection and training on fisheries data analysis, including the fish stock assessment, are organized for the fishery's technical unit and its relevant stakeholders.
Activity 1.1.3. Establish knowledge management and learning center for scaling and replication	Activity 1.1.3 will be directly executed by KI in close collaboration with MMAF, CMMAI, and provincial governments within WPP 572. This activity will focus on collecting and curating tacit and explicit knowledge with the purpose of sharing and amplifying information, capacity building, transferring lessons learned, and replication.	Sub-activity 1.1.3.1 Design and develop a knowledge center to enhance project knowledge sharing, capacity building, and replication efforts.	Deliverable 1.1.3.1.i. The Knowledge and Management Information System (KMIS) is developed and operationalized. Deliverable 1.1.3.1.ii. A Knowledge and Learning Center to showcase success stories and lessons learned for the BEAM project is developed and sustained.
		Sub-activity 1.1.3.2. Collaborate with GOI (at the national, provincial, and local levels) and non-governmental agencies in amplifying, enhancing, and	Deliverable 1.1.3.2.i. Protection and production campaigns at the national level are launched. Deliverable 1.1.3.2.ii. Roadshow seminars and panel discussions at local universities within WPP 572 are organized. Deliverable 1.1.3.2.iii. Media engagements at the national level and at the 6 provinces are conducted.

	Concurrently, the knowledge center, comprehensive database system, and dissemination strategy will be developed.	replicating lessons learned to other FMAs/WPPs through national and subnational awareness raising campaigns. Sub-Activity 1.1.3.3. Capture and disseminate learning reports from project implementation amongst project stakeholders and partners to inform refinement. replication and scaling up.	Deliverable 1.1.3.2.iv. 12 Success stories from the field and research related to Component 1 and Component 2 are published. Deliverable 1.1.3.3.i. Lessons learned from project implementation are documented and disseminated for replication and scaling
COMPONENT 2: Locally Led Climate Action + Investment Readiness			
Activity 2.1.1 Deploy grants for sustainable climate change adaptation in coastal communities	This grant window finances projects under the four sub-themes dedicated to supporting adaptation measures and enhancing resilience to climate change, primarily targeting vulnerabilities faced by coastal communities in FMA 572. Grantees may be CSOs, NGOs, cooperatives, companies, MSMEs, universities and research institutions committed to establishing conditions that support adaptation measures and enhance resilience to climate variability and changes.	Sub-Activity 2.1.1.1 Manage grants for ecotourism enterprises for community development Sub-Activity 2.1.1.2 Manage grants for collaborative MPA management Sub-Activity 2.1.1.3. Manage grants for sustainable and diversified fishing livelihoods (community-based economic activities). Sub-Activity 2.1.1.4. Manage grants for sustainable waste management. Sub-Activity 2.1.1.5. Establish and operate the adaptation and mitigation grant windows Sub-Activity 2.1.1.6. Provide technical assistance and support to adaptation grantees on cross-cutting subjects (including GEDSI and Safeguards) Sub-Activity 2.1.1.7. Monitor adaptation grant window performance	Deliverable 2.1.1.1.i. 9 grants totaling US\$ 1.8 million (at US\$ 40,000 - 400,000 each) for ecotourism development, which consists of operator, logistics, transportation and accommodation are awarded and managed. Deliverable 2.1.1.2.i. 11 grants totaling US\$ 1.88 million (at US\$ 40,000 – 400,000 each) for collaborative MPAs management (with active participation of the local community) are awarded and managed. Deliverable 2.1.1.3.i. 8 grants totaling US\$ 1.4 million (at US\$ 40,000 - 400,000 each) for sustainable and diversified fishing livelihoods (community-based economic activities) are awarded and managed. Deliverable 2.1.1.4.i. 8 grants totaling US\$ 1.4 million (at US\$ 40,000 – 400,000 each) for sustainable waste management are awarded and managed. Deliverable 2.1.1.5.i. Adaptation and mitigation grant facility established and operational. Deliverable 2.1.1.6.i. Technical assistance provided to 36 grantees throughout the grant process. Deliverable 2.1.1.7.i. 36 reports are developed on grant and funding window performance.
Activity 2.2.1. Deploy grants to improve ecosystems	The climate mitigation grant window fund projects facilitating low-carbon, resilient development pathways, aiming to mitigate the impacts of climate change.	Sub-Activity 2.2.1.1 Manage grants for high carbon ecosystem restoration. Sub-Activity 2.2.1.2. Manage grants for small-scale renewable energy deployment/installation.	Deliverable 2.2.1.1.i. 13 grants (villages) totaling US\$ 1.96 million (at US\$ 40,000 – 400,000 each) for the restoration of nature (roughly 285 hectares of mangroves and 6 hectares of seagrass beds) are awarded and managed.

and achieve sustainable climate change mitigation impacts		Sub-Activity 2.2.1.3. Provide technical assistance and support to mitigation grantees on cross-cutting subjects (including GEDSI and Safeguards) Sub-Activity 2.2.1.4. Monitor mitigation grant window performance	Deliverable 2.2.1.2.i. 12 grants totaling US\$ 1.56 million (at US\$ 40,000 – 400,000 each) for small-scale renewable energy deployment/installation are awarded and managed. Deliverable 2.2.1.3.i. Technical assistance provided to 25 grantees throughout the grant process. Deliverable 2.2.1.4.i. 25 reports are developed on grant and funding window performance.
Activity 2.3.1. Improve the Investment Readiness of the Blue Economy	This intervention supports enterprise development and investment readiness, creating a blueprint for the growth of sustainable blue economy for WPP572 and other regions of Indonesia. It specifically provides technical assistance to BLU LPMUKP to address operational barriers that constrain its outreach to MSMEs, alongside support for action-oriented research papers that generate evidence-based recommendations for policy and investment. This intervention aims to enable growth and mature stage enterprises engaged in the blue economy.	Sub-Activity 2.3.1.1 Provide technical assistance to BLU LPMUKP Sub-Activity 2.3.1.2. Develop action-oriented research papers on sustainable blue economy themes Sub-Activity 2.3.1.3. Monitor investment readiness interventions performance	Deliverable 2.3.1.1.i. A service provider engaged to develop and deploy a digitized loan management platform for BLU LPMUKP, covering loan origination, disbursement, portfolio monitoring, and repayment tracking. Deliverable 2.3.1.1.ii. BLU LPMUKP's loan application and approval procedures streamlined (e.g., reduced documentation, simplified forms, standardized workflows). Deliverable 2.3.1.1.iii. At least 100 BLU LPMUKP extension officers trained in the use of the new IT system and in simplified, climate-responsive disbursement methods. Deliverable 2.3.1.2.i. 4 service contracts totaling US\$ 600K for action-oriented research papers on sustainable blue economy themes in WPP 572 are awarded and managed Deliverable 2.3.1.3.i. Reports are developed on BLU LPMUKP technical assistance and action-oriented research papers for wider dissemination and scaling across Indonesia.

E.7. Monitoring, reporting and evaluation arrangements (max. 500 words, approximately 1 page)

214. Monitoring, reporting, and evaluation arrangements (including the ESMF and Gender Action Plan) will comply with relevant CI and GCF policies, including the GCF Monitoring and Accountability Framework and the Integrated Results Management Framework.
215. The AE will oversee the work of the EE through quarterly EE reports and meetings to monitor progress towards deliverables and milestones. KI, as EE, will prepare an Annual Performance Report to monitor Project progress and report to the CI-GCF Agency, summarizing annual project results, progress, and challenges to be addressed along with any adaptive management processes implemented. The APR will be submitted to the GCF by the AE in accordance with Project FAA. The EE and AE will also prepare a Project Completion Report for submission to the GCF. KI will prepare Annual Performance Reports summarizing project results, progress, and implementation challenges.
216. The Monitoring and Evaluation (M&E) Plan (**Annex 11**) includes GCF-level Impact and Outcome indicators based on the IRMF and Project-level Outcome and Activity indicators, metrics for each indicator, methodology for data collection, baseline information, frequency of data collection, and indicative resources needed to complete the plan. The Project M&E will be coordinated by a dedicated M&E specialist employed by KI, working in close coordination with subgrantees, and Technical Partners and supported by the Project's gender and safeguards specialists. KI will be responsible for providing timely and comprehensive data on Component 2, as applicable. All monitoring data will be aggregated for Project-level reporting through APRs. The plan will include indicator definitions, baselines, means of verification, and baseline, mid-term, and end-line assessments.
217. The M&E Plan is a living document focused on measuring outputs, outcomes, and paradigm shift impacts. It will be finalized during the project start-up phase and updated as needed during implementation. The plan will define roles and responsibilities for data collection and management, reporting flows, monitoring tools, indicator verification methods, and alignment with national monitoring systems.
218. KI will provide capacity building assistance and work through technical partners to engage with grantees for their respective windows to ensure accurate and timely collection of M&E data from grantees / projects funded through the Grant Facility. These results will be compiled and presented to the PSC and AE for monitoring of Component 2 results against logical framework indicators.
219. The Project Steering Committee (see Implementation Arrangements) will review annual budget and workplans, discuss implementation issues and identify solutions, and increase coordination and communication between key project partners. The NDAs will participate in these meetings as a member of the Project Steering Committee.
220. The AE will engage independent consultants via a service contract to conduct Interim and Final Independent Evaluations of the project (see **Annex 5** for timeline). Interim Independent Evaluation Report and a Final Independent Evaluation Report will be submitted to the GCF as per the timeline agreed in the Project FAA.

SECTION F: RISK ASSESSMENT AND MANAGEMENT

F.1. Risk factors and mitigation measures (max. 3 pages)

221. BEAM will continuously monitor risks to Project success and will apply adaptive management measures to address risks over the implementation period of the Project. For all risks indicated below, the Project will seek to mitigate impacts by maintaining transparent, consistent communication with beneficiaries, partners, government institutions, the private sector, and the GCF.
222. Project staff will ensure that on-grant proposals meet all eligibility criteria prior to selection and funding by referring to the safeguards screening, and will ensure that all ESS risks are appropriately captured and mitigated in accordance with the Project ESMF. The ESMF will be used to assess Grant Facility proposals and implementation.
223. Given the close cooperation with the GoI that is required to successfully implement the Project, particular consideration will be given to political risks and potentially changing Government priorities. This will entail ensuring ongoing consultation and briefing of government officials. The Project will also carefully monitor any regulatory or policy changes implemented by the new government for any adverse impacts on Project implementation.

224. Ongoing risks related to limited capacities of stakeholders, grantees, and relevant authorities' to engage throughout Project implementation will be addressed through capacity building interventions in both Components. The Project's overall risk rating is **medium**.

Selected Risk Factor 1: Change to political priorities

Category	Probability	Impact
<u>Technical and operational</u>	<u>Medium</u>	<u>Medium</u>

Description

225. In October 2024, President Prabowo Subianto was inaugurated. President Prabowo has committed to continuing President Jokowi's initiatives, including development of the blue economy. The RPJMN 2025-2029, which is the projection of the president's vision and priorities for the year 2025 – 2029, was released on March 2025. The RPJMN emphasizes food security and infrastructure, with less explicit detail on MPAs or blue economy governance. However, Indonesia's NDC and the 30x45 MPA ambitions are two examples of commitments that will be continued. With MMAF endorsement, BEAM is well positioned to support Indonesia's Asta Cita (grand mission) #2 and #4, promoting national independence through self-sufficiency in food, energy, water, green economy, and blue economy, while continuing downstream industrialization to increase domestic value. In addition, a risk exists that over time the government will develop strategies, policies or regulatory changes that do not align with BEAM's objectives and approaches. For instance, President Prabowo's administration merged the Coordinating Ministry of Maritime Affairs and Investments (CMMAI) into the new Coordinating Ministry for Food Affairs (CMFA), potentially diluting focus on marine conservation. Nonetheless, the Ministry of Marine Affairs and Fisheries remains intact in the new Prabowo's administration, which shows government's continued commitment in this sector.

226. The newly elected provincial and regency leaders were inaugurated in February 2025. This could pose additional risk. Although, in theory, national regulations and policies trickle down to the sub-national level, under the regional autonomy law (*otonomi daerah*), implementation of fiscal decentralization is practiced to improve efficiency and effectiveness in fulfilling the interests of local communities; therefore, policy implementation may be subject to prioritization of the newly elected leaders. However, sub-national leaders are motivated to improve regional revenues, so it is unlikely that resistance to efforts to improve the sustainable blue economy will materialize.

Mitigation measure(s)

227. CI and KI have leveraged existing relationships and built new relationships with key GoI counterparts for the Project, including MMAF, Bappenas, Ministry of Home Affairs, and the Fiscal Policy Agency as NDA. The Coordinating Ministry of Maritime Affairs and Investment (CMMAI), which was disbanded on 20th October 2024 by President Prabowo and succeeded by Coordinating Ministry for Food Affairs (CMFA), and the Ministry of Marine Affairs and Fisheries (MMAF) lead the Government of Indonesia (GoI) in overseeing the design process for Blue Halo S-BEAM. KI will continuously engage with technical staff in these counterpart agencies to ensure their continued guidance and support. CI and KI will also identify opportunities to integrate the objectives and concepts of the Project into GoI's long-term planning, i.e., the RPJPN 2025–2045, to ensure ongoing alignment despite changes in leadership. Changes in legislation and laws linked to the Project's objectives will be monitored and Project actions will be adjusted accordingly. The same engagement will also be carried out with regional governments to ensure that new regional governments have interests and priorities that are in line with the Project.

Selected Risk Factor 2: Lack of policy coherence

Category	Probability	Impact
<u>Technical and operational</u>	<u>Medium</u>	<u>Medium</u>

Description

228. Lack of policy coherence between different ministries and government bodies could pose a risk to BEAM through delays, work duplication, overlapping policies, or areas of prioritization. Different line ministries may have conflicting strategies and objectives for the blue economy which may affect Project implementation (e.g., building coastal infrastructure vs. conserving coastal ecosystems). Different ministries may also have differing data collection / reporting methodologies, potentially causing impacts on Project reporting. These potential conflicting policies and priorities (which may change over the course of Project implementation) may affect the ability of the Project to achieve its intended targets and report against impacts as expected.

229. One relevant example is mangrove rehabilitation which is implemented under the guidance and/or authority of four government institutions: MMAF, MoE, BRGM, and ATR/BPN.⁷⁹ The government has not clearly defined which part of the Project targeted coastal areas will be under the jurisdiction of MMAF and which fall under other ministries. Although ideally, they work together in priority areas, each body may not always have the same priority areas.

Mitigation measure(s)

230. This risk will be directly mitigated through Activity 1.1 in Component 1, which will clarify several marine ecosystem management regulations and policies, and work in close coordination with the ministries that work on coastal and marine management to ensure that the implementation of BEAM activities is clearly under the authority of a specific entity within Gol. Representation from all relevant government institutions / ministries is included in the governance of the Project and all efforts will be made to ensure alignment and clearly defined roles and responsibilities for all stakeholders in the implementation, monitoring, and prioritization of BEAM interventions.

Selected Risk Factor 3: Natural disasters in WPP 572 locations

Category	Probability	Impact
<u>Technical and operational</u>	<u>Medium</u>	<u>Medium</u>

Description

231. WPP 572 is highly prone to natural disasters, such as earthquakes, floods, volcanic eruptions, cyclones, and tsunamis, causing death, injuries, and damage to infrastructure in target communities. Natural disasters could cause disruptions to planned activities, temporarily restrict access to affected sites and damage facilities. Impact could be high locally but is identified as a medium risk to overall BEAM implementation as any one natural disaster is likely to be localized and therefore will not affect the whole of WPP 572.

Mitigation measure(s)

232. BEAM will subscribe to an emergency alert system, provide project staff with disaster and emergency relief skills, and regularly monitor environmental conditions to identify and address potential risks. The Project has developed a specific Disaster Risk Management Plan (within **Annex 6(b)**) to inform Project implementation. The Project will also develop contingency plans (which will incorporate the specific vulnerabilities and needs of women and most vulnerable groups) for logistical or operational issues, including identifying alternative suppliers or service providers in the event of a natural disaster. BEAM will monitor project activities regularly to identify and address potential delays or issues due to extreme natural and climatic events.

Selected Risk Factor 4: Risks related to environment and social standards (ESS) and gender

Category	Probability	Impact
<u>Technical and operational</u>	<u>Medium</u>	<u>Medium</u>

Description

233. Reluctance from local communities, particularly women and vulnerable groups, to engage in Project activities poses a risk to BEAM implementation. Historical distrust stemming from unresolved complaints and unfulfilled promises of assistance has fostered skepticism within communities, which presents a potential early-stage challenge for the Project. Furthermore, systematic barriers within higher-level systems may hinder the collection of necessary data to promote GESI. As a result, marginalized vulnerable communities and women may face reduced access to project interventions and benefits.

Mitigation measure(s)

234. BEAM will develop clear communication channels and a Project level Accountability and Grievance Mechanism for stakeholders to address concerns and resolve conflicts. The Project will also establish clear protocols for stakeholder engagement to ensure that all stakeholders are involved in project planning and decision-making and will work through the project governance mechanism established for the implementation phase to mediate any disagreement among stakeholders. This includes implementation of Free Prior Informed Consent (FPIC) at the earliest stage of project implementation. In addition, the project will socialize the Accountability and Grievance Mechanism at all events

⁷⁹ <https://tekno.tempo.co/read/1837666/penyusunan-regulasi-perlindungan-mangrove-kkp-minta-kejelasan-kewenangan>

conducted under the BEAM Project and will monitor its use, to ensure feedback and grievances are received and responded to in a timely and effective manner.

235. The project will ensure that women and vulnerable groups are fully engaged in the implementation of BEAM and the design and implementation of sub-granted projects through the Grant Facility. Project staff will also ensure that the Stakeholder Engagement Plan is implemented, and that it is updated as needed. The Stakeholder Engagement Plan (**Annex 7**) identifies all the key stakeholders that will be involved in or that will be affected by the Project and how/when they will be engaged (noting that this plan will be updated as needed and as additional stakeholders are identified to ensure inclusion). The Project will also utilize the Gender Action Plan (**Annex 8**) to ensure that women and vulnerable groups are represented in project interventions and receive proportional benefits from project interventions.

Selected Risk Factor 5 Prohibited Practices, including ML/FT

Category	Probability	Impact
<u>Prohibited practices</u>	<u>Low</u>	<u>Medium</u>
Description		
236. The Project involves a wide array of actors, including government, Technical Partner Grantees, Beneficiary Organization Grantees, and vendors and service providers. Based on a calculation using multiple international risk indicators, CI assesses Indonesia to be a low-risk country for GCF prohibited practices, including terrorist financing and money laundering. However, Serious breaches of prohibited practices policy, including ML/FT, would impact the reputation of CI and the Project, leading to reduced impact, delays, or other negative consequences.		

Mitigation Measure(s)

237. As CI's main delivery partner in Indonesia, KI has already adopted the use of CI's Anti-Money Laundering and Counter-Terrorism-Financing (AML/CFT) Policy, and related procedures, which have been assessed as appropriate by the GCF. Finally, the Technical Partners were screened and cleared against international sanctions lists.
238. As AE, CI, has several procedures and controls in place to prevent, mitigate, and identify risk. In order to comply with CI AML/CTF, U.S. law, and GCF fiduciary standards, CI applies rigorous CFT/AML screening to all CI funding recipients. CI also assesses the Prohibited Practices (PP) risks of grant recipients and includes any required mitigation measures in its legally binding grant agreements. All EE staff and subgrantees must also undergo training on PP (including red flags and how to report violations), and all grant / services agreements (used by both CI and sub-grantees) must include language on compliance with the GCF Policy on Prohibited Practices, including AML/CFT. To help mitigate the risk of ML/FT, the EE will implement CI's AML/CFT policies and procedures for the Project. Technical Partner Grantees will receive capacity-building related to AML/CFT and prohibited practices from KI, as required, and compliance with PP policies and mitigation measures is part of AE oversight throughout implementation.
239. To report and remedy risks, any CI employee; employee of an executing entity, grantee, partner, or vendor; or beneficiary may report a grievance or violation of these policies anonymously online or by telephone through CI's Ethics Hotline. All reported grievances will be investigated and addressed per CI's Anti-Fraud Policy & Guidelines for Investigations. Full details can be found on CI's website at <https://www.conservation.org/feedback>. More information on this risk can be found in **Annex 20**.

Selected Risk Factor 6: Sub-grant and procurement fiduciary risk

Category	Probability	Impact
<u>Governance</u>	<u>Low</u>	<u>Medium</u>
Description		
240. The Project will manage numerous sub-grants and engage beneficiary organizations, technical partners, contractors, vendors, and service providers with varying levels of fiduciary, procurement, accounting, internal-control, and reporting capacity. Weak controls or documentation could result in ineligible expenditures, procurement irregularities, delayed disbursements, audit findings, implementation delays, or reputational impacts for KI, CI, and GCF.		
Mitigation Measure(s)		
241. KI and CI will apply risk-based institutional, fiduciary, procurement, and integrity due diligence before entering into sub-grant agreements or contracts. The level of review, monitoring, reporting, and verification will be proportionate to the assessed risk and value of each grant or contract.		

242. Sub-grant agreements will establish requirements concerning eligible expenditure, procurement, financial management, supporting documentation, asset management, reporting, audit access, prohibited practices, AML/CFT, and the return or recovery of misused funds.

243. Sub-grantees will receive appropriate financial management, procurement, record-keeping, and reporting training. KI will undertake sample-based and risk-based expenditure reviews, monitor compliance with approved budgets and procurement plans, and require corrective-action plans where weaknesses are identified. Disbursements may be withheld, suspended, or made conditional on completion of agreed corrective measures.

Selected Risk Factor 7: Grant Facility Coordination and Results Consolidation Risk

Category	Probability	Impact
<u>Technical and operational</u>	<u>Low</u>	<u>Medium</u>

Description

244. BEAM's multiple grant windows, varied sub-project types, and dispersed implementation sites may create differences in project quality, delivery speed, monitoring, and reporting. These challenges could slow grant processing and make it harder to consolidate results consistently across the Project.

Mitigation Measure(s)

245. The Grant Facility will apply clear eligibility, technical, fiduciary, safeguards, gender, and integrity checks. Only proposals meeting all minimum requirements will be approved, with documented decisions, conflict-of-interest controls, and milestone-based disbursement tied to safeguards compliance and satisfactory performance. Capacity-building support will be provided before and after selection, including support to strengthen proposals, safeguards instruments, work plans, budgets, monitoring systems, and community-engagement arrangements. Disbursement will be linked to agreed milestones, safeguards requirements, and satisfactory performance.

Selected Risk Factor 8: Community Participation and Inclusion of Vulnerable Groups

Category	Probability	Impact
<u>Technical and operational</u>	<u>Low</u>	<u>Medium</u>

Description

246. Women, Indigenous Peoples, and other vulnerable groups may face social, institutional, financial, or geographic barriers that constrain their effective participation in Project activities and decision-making. Given the limited availability of data on coastal Indigenous Peoples in the target area, there is also a risk that relevant groups may not be identified or engaged at an early stage. If these barriers and information gaps are not adequately addressed, participation and access to benefits may be uneven, potentially weakening local ownership and affecting the achievement of the Project's gender equality and social inclusion objectives.

Mitigation Measure(s)

247. BEAM will implement and regularly update the Stakeholder Engagement Plan, Gender Assessment and Action Plan, Indigenous Peoples Framework, and Project-level Accountability and Grievance Mechanism. Given the limited availability of data on coastal Indigenous Peoples in the target area, screening and targeted engagement will be undertaken as sub-project locations and beneficiaries are identified, with Free, Prior and Informed Consent applied where required.

248. Engagement will proactively include women, Indigenous Peoples, traditional communities, persons with disabilities, youth, older persons, poor households, and other vulnerable groups. Methods will be adapted to local conditions through accessible venues, appropriate timing, local languages, targeted outreach, accessible consultation, site-specific engagement plans, disaggregated monitoring separate consultations where appropriate, and support for meaningful participation. Feedback will inform Project and sub-project design. Participation, benefit distribution, grievances, and results will be monitored using appropriately disaggregated data. The grievance mechanism will be widely communicated and provide accessible, confidential, and culturally appropriate channels for raising and resolving concerns.

Selected Risk Factor 9: Environmental Pollution and water and soil quality risk

Category	Probability	Impact
<u>Technical and operational</u>	<u>Low</u>	<u>Medium</u>

Description

249. Project-supported field activities may cause temporary soil disturbance, erosion, sedimentation, waste, or localized water and soil contamination if not carefully managed. These impacts could affect nearby ecosystems and communities, reduce restoration benefits, and require corrective action.

Mitigation Measure(s)

250. Environmental safeguards will be integrated into activity design, screening, budgets, contracts, and field supervision in line with the ESMF and relevant ESMP requirements. Site selection will avoid environmentally sensitive or unstable areas and consider existing land use, erosion risk, water flow, biodiversity, community access, and the suitability of proposed restoration methods. Activities will also apply erosion and sediment controls, safe storage and handling of fuels and chemicals, proper waste management, and rehabilitation of temporarily disturbed areas. Contractors, partners, and sub-grantees will be required to meet national regulations and Project safeguards standards, with monitoring and timely corrective action where issues arise.

Selected Risk Factor 10: KI Implementation capacity and grantee oversight risk

Category	Probability	Impact
<u>Technical and operational</u>	<u>Low</u>	<u>Medium</u>

Description

251. KI will lead enabling-condition activities (such as policy and regulatory support, fisheries data-system improvements, MPA financing and PPP development, and knowledge-sharing) and manage the BEAM Grant Facility. As this will be KI's first grant facility in western Indonesia, limitations in staffing levels, systems, technical expertise, or partner-management arrangements may affect implementation timelines, oversight, and timely delivery of Project outcomes

Mitigation Measure(s)

252. KI will establish a fully staffed PMU with clear authority and dedicated expertise in grant management, finance, procurement, safeguards, M&E, and government coordination. Dedicated PMU functions for safeguards, GESI, M&E and grievance management; staffing review and extra support This capacity is reinforced by KI's role in administering the US\$35 million TFCCA program, including its first grant cycle covering 58 selected proposals for coral reef conservation and sustainable livelihoods. Technical partners, a centralized grant-tracking system, and regular capacity reviews will support timely implementation, consistent oversight, and early action on bottlenecks. Additional staff, training, or technical assistance will be deployed where needed.

SECTION G: GCF POLICIES AND STANDARDS

G.1. Environmental and social risk assessment (max. 750 words, approximately 1.5 pages)

253. The Project will apply the ESMF, ESMP, Stakeholder Engagement Plan, Gender Assessment and Action Plan, Indigenous Peoples Framework, and grievance mechanism throughout implementation. Component 2 proposals will undergo exclusion-list review, environmental and social screening, risk categorization, and safeguards appraisal before submission to the Grant Committee. The ESMF is aligned with GCF policy and builds on the relevant environmental and social framework in Indonesia, with additional measures included to fully comply with the relevant requirements under each applicable ESS. The Project design employs FPIC and will continue to engage with beneficiaries to ensure FPIC is followed throughout implementation.

254. The use and applicability of these various instruments (i.e. ESMF, Grievance Mechanism, Disaster Risk Management Plan) as they relate to the identified environmental and social risks of the Project are highlighted in Table 5 of the ESMF (**Annex 6a**). The section below provides a summary of the expected risks and mitigating strategies that will be used in the implementation of the project. These risks have been grouped thematically, based on the type of assistance the planned activities will require (e.g. capacity building, technical assistance). An ESS analysis report will also be mandatory for all project applications submitted for grant funding to demonstrate that a given Project-funded intervention does not violate the do no harm principle from an environmental or social perspective. Based on screening, KI will require proportionate site-specific instruments, such as an ESMP, Labour Management Plan, Occupational Health and Safety Plan, Stakeholder Engagement Plan, Indigenous Peoples Plan, Waste Management Plan, or other risk-specific measures.

255. As final subproject sites are not yet confirmed, Indigenous Peoples will be identified through site-level screening and community validation. Where Indigenous Peoples are present or may be affected, the Project will ensure culturally

appropriate engagement, meaningful participation, fair access to benefits, and appropriate mitigation measures. FPIC will be applied where required under ESS 4.

Risks	Mitigation Measures	Related Parties	Reference Systems
Environmental pollution risks to water and soil quality due to field work, including restoration activities	Ensure that water and soil quality management mitigation provisions are implemented throughout the stages of the project and are monitored.	Contractor	ESMP ESCOPs Environmental management plans integrated with the project work plans
	Integrate environmental risk and mitigation aspects into technical design and work plan.	Field supervisor (supervising consultant)	
	Provide capacity building support, including consultant mobilization, training, and supervision	Local Environmental Office	
	Enforce requirements for adequate and safe working conditions.	MMAF (including the local Technical Implementation Unit)	
Poor working conditions, especially for workers placed on the project site	Adhere to environmental, Social, Health and Safety (ESHS) Requirements.	Contractor/ third party	Environmental and Social Code of Practice (ESCOP) WBG Worker Accommodation: Processes and Standards Inclusion of ESHS requirements in project work plans and bid documents for third party providers (procurement documents).
	Preparation of stand-alone or integrated OHS Management plans.	Field supervisor	
	Compliance with good practice on workers accommodation in case of setting up temporary labor camps.	Local Manpower Office	
	Monitoring and implementation of sanctions and/or corrective actions in the context of poor performance.	MMAF (all Directorate Generals that will have activities/sub-projects with workers in the field)	
Occupational Health and Safety (OHS) accidents, including exposure to natural disasters	Integrate OHS management into the project work plan, including provisions on capacity building, PPE, and related equipment for project workers, or prepare stand-alone OHS plans for more complex works, commensurate with risks and impacts.		Environmental and Social Incident Reporting Protocol Regular OHS monitoring. Planned capacity building activities in OHS. Relevant ESHS requirements to be included in the project work plan and bid documents if the related work will be done by contractors/third parties
	Develop requirement on monitoring, including supervisory consultant works for field activities.	Contractor/ third party	
	Implement an Environmental and Social Incident Reporting protocol describing reporting, investigation mechanisms, and corrective actions.	Field supervisor	
	Provide capacity building support, including expert mobilization, training, and supervision.	Local Manpower Office	
Less inclusive capacity building	Integrate gender sensitive and inclusive institutional and technical capacity building modules	MMAF	Capacity building activity plan GESI principles and guidelines
	Undertake mapping to identify key stakeholders relevant to specific capacity building topics	MMAF (DGoCF/ DGoMSM/ DG of Aquaculture and the local Technical Implementation Unit)	
		Contractor (if capacity building activities are outsourced to a third party) Social and environmental specialist / consultant within the PMO (Project Secretariat)	

Social exclusion and lack of a meaningful participation, especially among vulnerable groups	Ensure inclusive village level process such as the use of participatory rural appraisal tool (PRA), involving village facilitators, mandate that vulnerable communities are included as project beneficiaries, hold inclusive village meetings, conduct inclusive economic assessments. Identify vulnerable groups once the location (village/sub-district) and sub-project activities have been confirmed. Implement strategy for engagement activities for vulnerable groups outlined in Stakeholder Engagement plan (SEP). The project includes provisions for outreach and facilitation to vulnerable groups, including provisions for safe spaces for women, small-scale fishers or traditional fishermen, communities who depend on marine resources for their livelihoods fisherwomen and women engaged in informal blue economy. Engage field-based partner for building trust and intensive communication and collaboration with local communities.	Vulnerable people/ groups, such as small-scale fishers/ traditional fishers, and women engaged in the informal blue economy. Community leaders or traditional leaders (elders/customary heads) The Stakeholder Engagement Plan (SEP) Link to project design, through participatory planning of village master plan and inclusion of vulnerable groups that will be measured/ monitored annually through EVIKA score monitoring. Action plan will be developed annually in response to the M&E findings; the action plan will be included in the Zoning plan and Management plan, which will be reviewed by the PMU and the AE. Inclusive channels to disclose project information
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G.2. Gender assessment and action plan (max. 500 words, approximately 1 page)

Gender assessment

256. The gender assessment combined quantitative and qualitative methods across all six provinces, including desk review, secondary data, interviews, focus groups, and field observations. It engaged 135 participants—64 men and 71 women—including community members, government officials, and NGOs. The findings will guide GESI-responsive outreach, grant screening, appraisal, contracting, implementation, monitoring, and reporting, including targeted support for women-led and underserved applicants, required GESI actions and budgets in Component 2 proposals, and disaggregated beneficiary reporting. Please see **Annex 8** for more information.
257. The gender assessment identified the following vulnerable groups:
- *Small-scale traditional fishers (male fishers)*: Male fishers face unique challenges due to their heavy reliance on marine resources for sustenance. This dependency is compounded by limited alternative job opportunities resulting from lower educational attainment and skills, which restrict their employment options. They navigate significant occupational hazards, including health and safety conditions inherent in their work environment.
 - *Small-scale traditional fishers (female fishers)*: Female fishers usually harvest clams, crabs and seashells in shallow coastal or intertidal habits. Their livelihoods are significantly affected by damage from extreme weather events and anthropogenic land use factors which impact coastal biodiversity. They face challenges including reliance on marine resources, inadequate equipment, long working hours (balancing domestic chores with fishing), mis-categorization leading to exclusion from official fisher benefits, and undertaking multiple roles from harvesting to marketing. Despite long hours and low pay in fishery-related jobs, the flexibility in scheduling can be advantageous, especially for those with children.
 - *Women in the informal sector, particularly in post-harvest activities*: These women perform labor-intensive tasks that are generally paid less than those in harvesting. Their contributions across the fishery value chain are significantly underreported, resulting in undervaluation and exclusion from assistance programs. They rely heavily on catches by their partners or other fishers for income, alongside managing unpaid household responsibilities. Workers employed in fish farms and aquacultures face confined living conditions in compounds that limit access to information and the outside world. They typically lack job security and benefits due to informal employment status.
 - *Female heads of household in fishing communities*: These women's income relies directly on marine ecosystem health, leaving them vulnerable to environmental changes and resource depletion. Limited education and skills restrict their job options beyond fishing. They juggle generating income with household duties, often finding their husbands' fishing income insufficient, forcing them to seek additional earnings while handling domestic tasks. This dual burden exacerbates their economic and social vulnerability.

- *Elderly female fishers in areas like Mentawai who fish for personal sustenance and to support extended family members:* The physical condition of elderly female fishers significantly limits their work abilities. Despite this, they are forced to continue due to a lack of alternative income sources and this dependency exposes them to physical strain and health issues. The lack of accurate data on elderly female fishers highlights administrative neglect, marginalizing and excluding them from support programs.

Gender Action Plan

258. Based on these findings, a gender lens will be integrated into all Project interventions by combining GESI mainstreaming with targeted initiatives to ensure gender responsiveness. The Gender Action Plan aims to strengthen various domains of adaptive capacity and create an enabling environment for GESI mainstreaming and specific interventions.⁸⁰ Domains crucial for enhancing the adaptive capacity of identified vulnerable groups include:
- **Assets:** Establishing community-based savings groups, improving access to KUSUKA (ID card for marine-related business) for female marine and fishery actors, and ensuring fair access to government assistance, market opportunities, credit, and financial instruments.
 - **Social organizations:** Strengthening existing local working/business groups to serve as self-organized social platforms accessible for women and other vulnerable groups.
 - **Learning:** Developing inclusive knowledge, information, and education materials on climate change impacts, sustainable fisheries practices, coastal community livelihoods, and targeted capacity building programs to improve knowledge and skills among vulnerable groups.
 - **Agency:** Developing inclusive co-design approaches with local populations and vulnerable groups, that aim to empower these groups to shape and own proposed regulatory, policy, and market activities, ensuring that adaptation strategies are locally owned and sustainable long-term.
 - **Adaptation strategies:** Developing diverse adaptation options that consider the needs and priorities of women to ensure flexibility in responding to climate change impacts.
 - The Project introduces proactive measures including capacity building for government institutions on women's and vulnerable groups' needs, guidelines for GESI-responsive research grant selection, implementation, and data collection, and impact research on gender equality achievements.
259. The grant windows under Component 2 prioritize support for the most vulnerable, with KI actively encouraging proposals from women and vulnerable groups. Grant eligibility seeks gender equality and women's empowerment outcomes in all sub-grants (See **Annex 26**).
260. The PMU's GESI function will lead implementation of the Gender Action Plan, supported by the Safeguards and M&E functions. Subgrantees will implement relevant GESI actions and report progress to KI.

G.3. Financial management and procurement (max. 500 words, approximately 1 page)

261. CI, as AE, will follow financial management and procurement in line with CI policies and procedures, and provisions of the AMA between CI and the GCF. CI has assessed KI capacities and has determined that it has strong financial and procurement standards in place to meet CI and GCF fiduciary standards.

Financial management

262. CI and KI utilize Unit 4 Business World software for enterprise resource planning, managing financial accounting and monitoring globally. This system supports financial monitoring, reporting, HR, procurement, and record-keeping per CI's AMA requirements. It includes ledger accounts to track income and expense by donor, project, and sub-award. CI and KI employ a coding system and procedures for project monitoring and reporting.
263. KI and sub-grantees must submit quarterly financial reports to be reviewed by the AE and EE. The AE will pre-approve financial reporting templates used by KI for BEAM grantees as part of the Grants Manual.
264. An annual independent external Project audit will be conducted aligned with internationally recognized standards, and results submitted to the GCF as per CI's AMA.

⁸⁰ As defined in Cinner, J.E., Adger, W.N., Allison, E.H. et al. (Building adaptive capacity to climate change in tropical coastal communities. *Nature Clim Change* 8, 117–123 (2018). <https://doi.org/10.1038/s41558-017-0065-x>), adaptive capacity refers conditions that facilitate people to anticipate and respond to change, to minimize consequences, to recover, and to take advantage of new opportunities that arise from climate change.

265. Disbursements to CI will be recorded in the Project ledger using Unit 4 Business World for tracking. Disbursements from the EE to sub-grantees will occur upon receipt of acceptable progress, financial reports and other grant agreement requirements.
266. CI has controls in place, preventing the risk of prohibited practices, including money laundering and financing of terrorism (collectively, "PP"). CI applies CFT/AML screening to all CI funding recipients. CI assesses PP risks of grant recipients and includes mitigation measures in its grant agreements. EE staff and sub-grantees must also undergo training on PP (including red flags and how to report violations), and all grant and services agreements (used by the EE and sub-grantees) must include language on compliance with the GCF Policy on Prohibited Practices. Monitoring for PP compliance, including site visits, is conducted throughout project implementation.
267. PP violations, fraud, or financial misuse can be reported anonymously online or by phone through GCF's IIU or CI's Ethics Hotline. CI's investigates and addresses all reports to its Ethics Hotline per its Anti-Fraud Policy and Guidelines for Investigations.
268. CI-GCF grants management and sub-recipient monitoring utilize an integrated systems across its donor management, accounting, and budgeting. This system notifies due dates of deliverables, tracks disbursements, expenses, milestones, and audit findings, and identifies project risks for informed and documented project supervision.

Procurement

269. All procurement will follow CI's Procurement Process Standards, ensuring best value and compliance with donor funding terms and conditions. Goods and services are procured to be used only as intended, aligning with CI's Code of Conduct and anti-fraud policies. CI's procurement standards meet GCF fiduciary standards.
270. KI has procurement policies which are fully aligned with CI and GCF standards. The Subsidiary agreement will incorporate flow-down terms to ensure compliance (see **Annex 19**). KI will adhere to AE's procurement controls and risk-mitigation measures, including planning, multi-level purchasing approvals (with AE approval above set thresholds), quarterly reporting, periodic inventories, and post-award reviews.
271. KI will assess procurement policies of sub-grantees conducting procurement. Sub-grantees meeting CI's Procurement Process Standards will follow their own procedures for the Project; others must adhere to CI's Policy or contractual flow-downs. Detailed procurement requirements, per CI and GCF standards will be stipulated in the grant agreement between EE and grantees.
272. CI will oversee all procurement for the Project, ensuring goods are used as intended. Training on procurement and prohibited practices will be provided to EE staff, CI will approve annual procurement plans and procurements exceeding over a specified threshold. Quarterly reports and periodic site visits will monitor procurement and equipment.

G.4. Disclosure of funding proposal

- ☐ No confidential information: The accredited entity confirms that the funding proposal, including its annexes, may be disclosed in full by the GCF, as no information is being provided in confidence.
- ☒ With confidential information: The accredited entity declares that the funding proposal, including its annexes, may not be disclosed in full by the GCF, as certain information is being provided in confidence. Accordingly, the accredited entity is providing to the Secretariat the following two copies of the funding proposal, including all annexes:
- Full copy for internal use of the GCF in which the confidential portions are marked accordingly, together with an explanatory note regarding the said portions and the corresponding reason for confidentiality under the accredited entity's disclosure policy, and
 - Redacted copy for disclosure on the GCF website.

SECTION H: ANNEXES

H.1. Mandatory annexes

- ☒ Annex 1 NDA no-objection letter(s) [\(template provided\)](#)
- ☒ Annex 2 Feasibility study - and a market study, if applicable
- ☒ Annex 3 Economic and/or financial analyses in spreadsheet format
- ☒ Annex 4 Detailed budget plan [\(template provided\)](#)
- ☒ Annex 5 Implementation timetable including key project/programme milestones [\(template provided\)](#)
- ☒ Annex 6 Environmental and social document corresponding to E&S category (A, B or C; or I1, I2 or I3):
[\(ESS disclosure form provided\)](#)
 - ☐ Environmental and Social Impact Assessment (ESIA) or
 - ☒ Environmental and Social Management Framework (ESMF) or
 - ☐ Environmental and Social Management System (ESMS)
 - ☒ Others (Disaster Risk Management Plan, Grievance Mechanism, IP Framework, ESMP)
- ☒ Annex 7 Summary of consultations and stakeholder engagement plan
- ☒ Annex 8 Gender assessment and project/programme-level action plan [\(template provided\)](#)
- ☒ Annex 9 Legal due diligence (regulation, taxation and insurance)
- ☒ Annex 10 Procurement plan [\(template provided\)](#)
- ☒ Annex 11 Monitoring and evaluation plan [\(template provided\)](#)
- ☒ Annex 12 AE fee request [\(template provided\)](#)
- ☒ Annex 13 Co-financing commitment letter, if applicable [\(template provided\)](#)
- ☒ Annex 14 Term sheet including a detailed disbursement schedule and, if applicable, repayment schedule

H.2. Other annexes as applicable

- ☒ Annex 15 Evidence of internal approval [\(template provided\)](#)
- ☐ Annex 16 Map(s) indicating the location of proposed interventions
- ☒ Annex 19 Procedures for controlling procurement by third parties or executing entities
- ☒ Annex 20 First level AML/CFT (KYC) assessment
- ☒ Annex 21 Operations manual (Operations and maintenance)
- ☒ Annex 22 Assessment of GHG emission reductions and their monitoring and reporting⁸¹
- ☒ Annex 23 Implementation Arrangements Detail
- ☒ Annex 24 Adaptation Beneficiary Calculations
- ☒ Annex 25 Contributions of the BEAM Project to GCF's USP2 targets
- ☒ Annex 26 Locally Led Climate Action Eligibility Criteria
- ☒ Annex 27 Grants Manual

⁸¹ Annex 22 is mandatory for mitigation and cross-cutting projects.



MINISTRY OF FINANCE OF THE REPUBLIC OF INDONESIA
DIRECTORAT GENERAL OF FINANCIAL SECTOR STABILITY AND
DEVELOPMENT

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Ref : S-45/SK/2026

13 Juli 2026

Ms Mafalda Duarte
Executive Director
Secretariat of the Green Climate Fund (GCF)
175, Art center-daero
Yeonsu-gu, Incheon 406-840
Republic of Korea

Subject: No-objection letter in respect of the funding proposal titled “Blue Halo S – Blue Ecosystem Adaptation Mechanism (BEAM)” submitted by Conservation International Foundation (CI)

Dear Ms Duarte,

We refer to the funding proposal titled “*Blue Halo S – Blue Ecosystem Adaptation Mechanism (BEAM)*” in Indonesia submitted by Conservation International (CI) to us on June 16 2026 (the “**Proposal**”).

The undersigned is the duly authorized representative of Directorate General of Financial Sector Stability and Development, Ministry of Finance, the national designated authority of Indonesia.

Pursuant to GCF Decisions B.08/10, B.37/22, and B.41/02, the content of which we acknowledge to have reviewed, in my capacity as representative of the national designated authority, we hereby communicate our no-objection to the Proposal.

By communicating our no-objection, it is implied that:

- (a) The government of Indonesia has no-objection to the Proposal; and
- (b) The Proposal is in conformity with the national priorities, strategies and plans of Indonesia.

We also confirm that our national process for ascertaining no-objection to the Proposal has been duly followed.

Notwithstanding the foregoing, we expect Conservation International (CI) to take the necessary measures to ensure that the project as described in the Proposal are implemented in a manner consistent with applicable national laws.

We acknowledge that this letter will be made publicly available on the GCF website.

Best Regards,



Ditandatangani secara elektronik

Herman Saheruddin
Director General



Environmental and Social Safeguards (ESS) Report Disclosure Form

Basic project or programme information	
Project or programme title	Blue Halo S – Blue Ecosystem Adaptation Mechanism (BEAM)
Potential sub-project(s) anticipated after GCF Board approval	Yes
Sector (public or private)	Public
Accredited entity/Project-specific Assessment Approach (PSAA) applicant	Conservation International Foundation (CI)
Environmental and social safeguards (ESS) category	Category B
Location – specific location(s) of project or target country or location(s) of programme	Indonesia The coastal areas of the Provinces adjacent to Fisheries Area WPP572: Aceh, North Sumatra, West Sumatra, Bengkulu, Lampung and Banten.
Safeguard Documents: Environmental and Social Impact Assessment (ESIA), Environmental and Social Management Plans (ESMPs), Environmental and Social Management System (ESMS), Environmental and Social Management Framework (ESMF), Environmental and Social Due-Diligence (ESDD) report, Land Acquisition and/or Resettlement Action Plan (LARAP), Indigenous Peoples Plan (IPP), Indigenous Peoples Planning Framework (IPPF), Resettlement Action Plan (RAP), Resettlement Policy Framework (RPF) etc. (as applicable)	
Date of disclosure on entity's website	Friday, September 18, 2026
Language(s) of disclosure	English and Bahasa Indonesia
Explanation on language	The original documents are in English. Bahasa Indonesia translations are provided since this is the official language used in the project localities.
Link(s) to disclosure	English: Annex 6a Environmental and Social Management Framework Annex 6b Environmental and Social Impact Assessment (ESIA) and Environmental and Social Management Plan (ESMP) Annex 6c Grievance Redress Mechanism Annex 6d Environmental and Social Safeguards Screening Report Annex 6e Indigenous Peoples Framework Bahasa Indonesia: Lampiran 6a Kerangka Kerja Pengelolaan Lingkungan dan Sosial Lampiran 6b Penilaian Dampak Lingkungan dan Sosial (ESIA) dan Rencana Pengelolaan Lingkungan dan Sosial (ESMP) Lampiran 6c Mekanisme Penanganan Keluhan Lampiran 6d Laporan Hasil Penapisan Kerangka Pengamanan Lingkungan dan Sosial Lampiran 6e Kerangka Kerja Masyarakat Adat
Other link(s)	General BEAM project information on CI's website: Blue Halo S – Blue Ecosystem Adaptation Mechanism Conservation International General Blue Halo S - BEAM project information on KI's website (in Bahasa Indonesia):

	Blue Halo - Konservasi Indonesia General Information of CI-GCF Agency Grievance Mechanisms CI-GCF - Accountability and Grievance Redress Mechanism Conservation International General Information on Konservasi Indonesia's Grievance Mechanism (in Bahasa Indonesia): Mekanisme Pengaduan Yang Akuntabel - Konservasi Indonesia
Remarks on compliance with GCF policies	ESS reports consistent with the requirements for a Category B project are contained in the documents above.
Disclosure in locations convenient to affected peoples (stakeholders)	
Date(s)	Friday, September 18, 2026
Place(s)	The ESS documents were published in Bahasa Indonesia on 18 September 2026 at the links indicated above. Stakeholders who participated in stakeholder consultations (see Annex 7, Summary of Consultations) have been contacted to inform them that the documents are available for consultation. The disclosure page includes the ability to provide feedback to the project development team either by email or through a feedback form. KI, the Ministry of Marine Affairs and Fisheries (MMAF) have released social media posts (Instagram and LinkedIn) to communicate the availability of the ESS documents for consultation. To accommodate for those who would prefer to consult a physical copy of the documents, the ESS documents in Bahasa Indonesia are available at the following locations: 1. Marine and Fisheries Agency (DKP), North Sumatra Province (Jl. Sei Batu Gingging No. 6, Medan Baru, Kota Medan, Sumatera Utara) 2. Marine and Fisheries Agency (DKP), West Sumatra Province (Jl. Koto Tinggi No.9, Jati Baru, Kec. Padang Timur, Kota Padang, Sumatera Barat) 3. Marine and Fisheries Agency (DKP), Bengkulu Province (Jalan Cendana No.61 Kota Bengkulu) 4. Marine and Fisheries Agency (DKP), Lampung Province (Jl. Drs. Warsito No.76, Talang, Kec. Telukbetung Selatan, Kota Bandar Lampung) 5. University of Bung Hatta, West Sumatra Province (Jl. Sumatera, Ulak Karang, Padang, Sumatera Barat) 6. Fisheries Management Unit (LPP) of WPP 572 at Bungus, West Sumatra Province (Jl. Raya Padang - Painan KM 16, Kelurahan Bungus Barat, Kecamatan Bungus Teluk Kabung, Kota Padang, Sumatera Barat)
Date of Board meeting in which the FP is intended to be considered	
Date of entity's Board meeting	N/A
Date of GCF's Board meeting	Monday, October 26, 2026

Note: This form was prepared by the entity stated above.

Secretariat's assessment of FP317

Proposal name:	Blue Halo S – Blue Ecosystem Adaptation Mechanism (BEAM)
Accredited entity:	Conservation International Foundation
Country/(ies):	Indonesia
Project/programme size:	Medium

I. Overall assessment of the Secretariat

1. The funding proposal is presented to the Board for consideration with the following remarks:

Strengths	Points of caution
Strong alignment with Indonesia blue economy priorities and strong locally led adaptation design.	Complex grant facility and need for strong subgrantee oversight.
Large adaptation and ecosystem benefits with policy and institutional change.	Policy uptake and coordination among government institutions not fully within project control.
Strong accredited entity/executing entity experience and substantial co-financing.	Monitoring and aggregation of grant-level results will require close supervision.

2. The Board may wish to consider approving this funding proposal in accordance with the term sheet agreed between the Secretariat and the accredited entity (AE) and, if considered appropriate, subject to the conditions set out in annex II to document GCF/B.46/02.

II. Summary of the Secretariat's assessment

2.1 Project background

3. Indonesia is one of the world's most biodiverse countries and hosts extensive marine ecosystems that are crucial for carbon storage and climate resilience. These ecosystems, including mangroves, seagrasses and coral reefs, provide significant income to coastal communities through fishing and tourism, and play a vital role in Indonesia's climate mitigation targets and adaptation strategies, as outlined in its enhanced nationally determined contribution. However, climate-driven natural disasters and changes in climatic variables, including sea level rise, changing rainfall patterns and sea surface temperature increases, are accelerating the degradation of these ecosystems, increasing the vulnerability of coastal residents and threatening economic losses estimated at USD 5.2 billion in 2024. Declining coastal ecosystem health, combined with unsustainable fisheries management, is reducing fish stocks, and jeopardizing food security and livelihoods, given that fish provides around half of the country's animal protein intake. At the same time, climate-induced ecosystem degradation is undermining Indonesia's blue carbon potential and constraining the development of sustainable blue economy sectors, while the adaptive capacity of coastal communities remains limited due to persistent poverty and other non-climate pressures.

4. The Blue Halo S – Blue Ecosystem Adaptation Mechanism (BEAM) project is designed to address identified barriers and capacity constraints to achieve a paradigm shift from unsustainable exploitation of marine resources to a climate-responsive model of coastal and marine management. Key to this vision is the development of scalable, inclusive and sustainable finance for the blue economy. The project will deploy grants in the fisheries management area, the Wilayah Pengelolaan Perikanan (WPP) 572, targeting climate adaptation interventions, ecosystem rehabilitation and restoration, and marine and coastal management with the aim of reducing greenhouse gas (GHG) emissions and vulnerability to climate change, and creating the social and environmental conditions on which blue investments and economic growth rely.
5. Conservation International Foundation (CI), through its CI-GCF Agency, will serve as the AE responsible for the overall oversight of this project. Konservasi Indonesia (KI) will be the executing entity (EE) and will engage Penabulu, an Indonesian non-governmental organization, as a technical partner to support the implementation of the project's on-granting mechanism. The project includes direct co-financing contributions from the Ministry of Marine Affairs and Fisheries (MMAF), four provincial governments (Bengkulu, Lampung, North Sumatra and West Sumatra), Bung Hatta University and KI.
6. The project is expected to avoid GHG emissions amounting to 483,322 tonnes of carbon dioxide equivalent (t CO₂ eq) over its 6-year implementation period and 1,298,901 t CO₂ eq over 20 years through three complementary pathways: (i) improving the effectiveness of Marine Protected Area (MPA) management; (ii) implementing community-led conservation and climate-resilient livelihood interventions; and (iii) restoring coastal ecosystems while promoting renewable energy solutions. In addition, the project will strengthen the climate resilience of vulnerable communities in WPP 572, with an estimated 355,800 direct beneficiaries and 10.7 million indirect beneficiaries across Indonesia.

2.2 Component-by-component analysis

7. The project has two complementary components that create synergies across activities.

Component 1: Strengthen enabling conditions (total cost: USD 41.26 million; GCF cost: USD 6.87 million)

8. This component will establish the enabling conditions necessary for the long-term protection of marine and coastal ecosystems, enhancement of sustainable fisheries management and implementation of viable inclusive, sustainable financing mechanisms. Output under component 1 is as follows:

- (a) Output 1.1: Development and deployment of evidence-based regulatory frameworks and knowledge products for ecosystem protection, fisheries sustainability and innovative financing. Related activities:
 - (i) Activity 1.1.1: Enhance ecosystem protection and fisheries sustainability through policy reform and creation of innovative financing mechanisms;
 - (ii) Activity 1.1.2: Improve the production and use of data on fisheries and ecosystems by governmental and non-governmental entities; and
 - (iii) Activity 1.1.3: Establish a knowledge management and learning centre for scaling and replication.

Component 2: Locally led climate action + investment readiness (total cost: USD 16.05 million; GCF cost: USD 16.05 million)

9. This component will deploy an on-granting mechanism to support locally led climate action for mitigation and adaptation interventions that utilize traditional and local knowledge,

designed and implemented directly by beneficiary populations. Outputs under component 2 are as follows:

- (a) Output 2.1: Locally led climate adaptation projects are effectively implemented and monitored, resulting in enhanced climate resilience of vulnerable communities. Related activity:
 - (i) Activity 2.1.1 Deploy grants for sustainable climate change adaptation in coastal communities across four thematic areas: ecotourism, collaborative MPA management, sustainable and diversified fishing livelihoods and sustainable waste management;
- (b) Output 2.2: Blue carbon and renewable energy projects are effectively implemented and monitored, resulting in reduced GHG emissions. Related activity:
 - (i) Activity 2.2.1: Deploy grants to improve ecosystems and achieve sustainable climate change mitigation impacts under two thematic areas: ecosystem restoration and deployment of renewable energy interventions; and
- (c) Output 2.3: Blue economy enterprises have improved access to finance and expanded operations in WPP 572. Related activity:
 - (i) Activity 2.3.1: Improve the investment readiness of the blue economy.

Project-level monitoring and evaluation component (total cost: USD 1.48 million; GCF cost: USD 1.41 million)

10. This cost will cover activities required to monitor and evaluate the project's progress towards the targets set out in the logical framework. The cost is 2.4 per cent of the total project cost.

Project management (total cost: USD 2.95 million; GCF cost: USD 1.16 million)

11. A dedicated project management unit (PMU) will be established and hosted by KI in Jakarta. The PMU will be responsible for overall project management and planning, providing support to the execution of day-to-day activities, coordinating with the national government and project partners, as well as with the AE. Project management cost is 5 per cent of the total project budget and is consistent with the GCF Policy on Fees.

12. The project has several notable technical strengths. Its protection-production model combines policy reform, ecosystem restoration, community-based adaptation and investment readiness support to address both climate vulnerability and sustainable economic development in coastal areas. The proposal is grounded in a strong analysis of barriers in WPP 572; it links enabling conditions with on-the-ground investments, increasing the potential for long-term and systemic impact. The adaptation and mitigation grant windows are well aligned with Indonesia's blue economy strategy and climate priorities, while the emphasis on community participation, gender inclusion and ecosystem-based approaches strengthens local ownership and sustainability.

13. The main technical challenge is the complexity of the project design and implementation arrangements. The project combines policy and institutional reforms with the management of more than 60 adaptation and mitigation grants across multiple provinces and stakeholder groups. Successful implementation will depend on the capacities of KI, government agencies and a diverse set of subgrantees. In addition, monitoring and aggregating results across multiple grant-funded interventions may prove challenging, while several policy and institutional outcomes will depend on factors beyond the project's direct control.

14. To address these challenges, the project should establish a robust grant management and monitoring system with standardized appraisal, safeguards, fiduciary and reporting procedures. Continued capacity-building support for subgrantees and government counterparts

will be important to maintain implementation quality. The monitoring framework should also include clear methodologies for aggregating adaptation, mitigation and policy outcomes and for tracking how investment readiness support translates into increased access to finance and enterprise growth. These measures would strengthen implementation readiness and improve confidence in achieving the project's expected climate and development impacts.

III. Assessment against investment criteria

3.1 Impact potential

Scale: *Medium to high*

15. The project is expected to generate a medium to high impact through an integrated adaptation and mitigation pathway in WPP 572, where climate-driven sea level rise, changing rainfall patterns, rising sea surface temperatures and natural disasters are accelerating the degradation of mangroves, seagrasses, coral reefs and fisheries resources. The project is expected to avoid 483,322 t CO₂ eq during the 6-year implementation period and 1,298,901 t CO₂ eq over 20 years through improved MPA management, community-led conservation and climate-resilient livelihood interventions, coastal ecosystem restoration and renewable energy solutions. It will also strengthen the climate resilience of vulnerable coastal communities, reaching an estimated 355,800 direct beneficiaries and 10.7 million indirect beneficiaries across Indonesia. The impact potential is assessed as medium to high given the scale of expected climate benefits, while noting that the aggregation of results across more than 60 grant-funded interventions will require robust monitoring and verification.

3.2 Paradigm shift potential

Scale: *High*

16. The project has high paradigm shift potential as it seeks to shift coastal and marine management from unsustainable resource exploitation towards a climate-responsive protection-production model. The model combines ecosystem protection, sustainable fisheries management, locally led climate action, investment readiness and improved governance. Component 1 is particularly important for transformation as it supports evidence-based regulatory frameworks, improved fisheries and ecosystem data systems, and a knowledge management platform for scaling and replication. GCF additionality is demonstrated by enabling an integrated package of policy reform, grant-based adaptation and mitigation, and institutional strengthening that would be difficult to deliver at this scale through existing public or private resources alone.

3.3 Sustainable development potential

Scale: *High*

17. The project has high sustainable development potential through economic, social and environmental co-benefits. Economically, it supports climate-resilient livelihoods, income diversification, sustainable fisheries, ecotourism, waste management and improved investment readiness for blue economy enterprises. Socially, it benefits vulnerable coastal communities and includes gender-responsive measures to increase women's participation and access to sustainable livelihood opportunities, while safeguards instruments address consultation and benefit-sharing among Indigenous Peoples. Environmentally, the project supports the restoration and protection of blue carbon ecosystems, improved MPA management, biodiversity conservation and stronger ecosystem services that underpin food security and coastal resilience.

3.4 Needs of the recipient

Scale: High

18. The project addresses a high level of recipient need. Indonesia's marine and coastal sectors are highly exposed to climate risks; WPP 572 contains important marine ecosystems and fisheries resources while facing limited protection, weak governance, insufficient climate finance and constrained technical and institutional capacity. Coastal communities, particularly small-scale fishers and resource-dependent households, are vulnerable to declining fish stocks, ecosystem degradation and climate shocks. The project responds to these needs through policy reform, ecosystem restoration, locally led adaptation, improved access to finance and strengthened institutional capacities, including measures to support women, Indigenous Peoples and other vulnerable groups.

3.5 Country ownership

Scale: High

19. The project has been designed in close consultation with Indonesia's national designated authority, ensuring strategic alignment with cross-cutting national strategies and plans. Specifically, the project aligns with Indonesia's second nationally determined contribution, its National Medium Term Evaluation Plan (2025–2029) and National Long Term Development Plan (2025–2045) and the Long-Term Strategy for Low Carbon and Climate Resilience 2050. Furthermore, it aligns with Indonesia's national adaptation plan, which emphasizes sectoral focus on social and livelihood, and ecosystem and landscape systems and provides climate adaptation benefits in marine and coastal sectors, increasing the climate resilience of communities, particularly fishers and others who rely on ecosystem services for their livelihoods and food security. The project is aligned with the national priorities set out in Indonesia's second GCF country programme.

20. The project has been developed in close consultation and coordination with relevant ministries such as MMAF. It directly contributes to the development of the blue economy, including the MPA Vision 30x45,¹ and ensures sustainable, quota-based fisheries. Furthermore, the project supports coastal communities through ecotourism activities aligned with the country's official five-year national development plan, Rencana Pembangunan Jangka Menengah Nasional (RPJMN).

21. The stakeholder engagement plan is robust, and the national designated authority has continued to be involved throughout the development of the project by dedicating resources of the Readiness and Preparatory Support Programme to advance coordination and consultation. In addition, support has been provided for the project through the Project Preparation Facility. Country ownership and support for the project is further demonstrated by the co-financing provided through in-kind contributions from four provincial governments along with MMAF.

3.6 Efficiency and effectiveness

Scale: Medium to high

22. The economic and financial analysis demonstrates that the project is economically justified by generating significant long-term economic benefits that exceed its costs. The economic analysis adopts a 20-year appraisal period and assesses the incremental costs and benefits compared with a "no project" scenario. Economic benefits arise primarily from the protection and restoration of mangrove and seagrass ecosystems, including enhanced ecosystem services, improved fisheries productivity, avoided GHG emissions and carbon sequestration, together with wider economic spillover effects from grant-supported climate-resilient livelihood investments.

¹ Vision 30X45 is a long-term national commitment to protect and conserve 30 per cent of its marine and coastal areas—equal to roughly 97.5 million hectares—by the year 2045.

23. The economic and financial analysis demonstrates strong economic performance, with an economic net present value of USD 42.3 million (at a social discount rate of 8 per cent), an economic internal rate of return of 29.1 per cent and a benefit–cost ratio of 1.67 over the project lifetime. The benefits of ecosystem restoration and livelihood interventions require time to materialize, resulting in a gradual build-up of economic returns. Furthermore, the project remains economically viable under extreme scenarios (for example, 20 per cent higher costs and 20 per cent lower benefits). These results demonstrate the economic efficiency of the project and its long-term economic value to society.

24. The financial assessment evaluates the representative revenue-generating investments that are expected to be supported under grant window 1 (adaptation) and grant window 2 (mitigation), including community ecotourism enterprises, waste management initiatives, fisheries ice-making facilities and solar-powered fish chillers. These investments represent the types of climate adaptation and mitigation activities that improve community livelihoods/incomes while generating climate co-benefits in line with project objectives.

25. The financial analysis demonstrates that these representative investments can generate sufficient revenues to cover operating and maintenance costs as well as support the community livelihoods beyond the project implementation period. However, the returns are modest (project internal rates of return (IRRs) are in the range of 12–15 per cent compared with a market discount rate of 12 per cent and are highly sensitive to increases in costs and reductions in revenues. Under a stress scenario (20 per cent increase in costs and 20 per cent reduction in revenues), the net present value of the cashflows to beneficiaries turn negative and the beneficiary equity IRRs fall to well below the 18 per cent equity IRR hurdle rate, even with only 20 per cent beneficiary co-investment. Commercial debt financing (in a counterfactual scenario) becomes financially unviable due to weak debt servicing capacity and low investment returns. The analysis therefore confirms that grant financing is the most appropriate instrument for enabling climate adaptation and mitigation investments by community-based organizations and micro-enterprises with limited borrowing capacity and constrained resources. However, the funding proposal highlights that beneficiary contributions will be explored on a case-by-case basis where appropriate to strengthen ownership and long-term sustainability, provided they do not create undue financial burdens on vulnerable communities.

26. The cost per tonne of CO₂ eq mitigated is USD 2.9, considering that 15 per cent of GCF financing is allocated to mitigation activities, indicating a cost-effective contribution relative to the GCF portfolio. The adaptation cost per beneficiary for GCF financing is USD 61, considering that 85 per cent of GCF financing is allocated to adaptation activities, reflecting an efficient project in strengthening the resilience of vulnerable coastal communities. In addition, the project leverages substantial domestic resources, with a co-financing ratio of 1:1.42, further enhancing the overall efficiency, ownership and sustainability of the project.

IV. Assessment of consistency with GCF safeguards and policies

4.1 Environmental and social safeguards

27. **Programme overview.** BEAM is a multi-component programme supporting Indonesia's blue economy transition in WPP 572 by financing enabling conditions through policy, regulatory, institutional and technical assistance interventions, and establishing a grant facility supporting climate adaptation and mitigation, ecosystem restoration, sustainable fisheries, community livelihoods, coastal waste management and investment readiness activities. Environmental and social (E&S) co-benefits include strengthened marine biodiversity conservation, enhanced climate resilience of coastal communities, improved livelihoods, support for women and vulnerable groups, and improved environmental governance.

28. **Environmental and social risk category.** The AE has adopted a framework approach since subprojects (particularly in the subgranting facility) will be identified during implementation. The programme will exclude category A activities and will employ E&S screening, an exclusion list and risk categorization, and develop site-specific safeguards instruments before approval of any subgrant. Based on the nature of envisaged activities, risks are expected to be moderate, site-specific, largely reversible and manageable through established mitigation measures. The proposed E&S risk categorization is confirmed by the Secretariat to be consistent with GCF category B classification and is within the accreditation level of the AE.
29. **Safeguards instruments.** The proposal is supported by a programme-level environmental and social management framework (ESMF), environmental and social impact assessment (ESIA) and environmental and social management plan (ESMP). Supporting instruments include E&S screening forms, E&S codes of practice, incident reporting procedures, stakeholder engagement provisions, labour management measures, grievance redress mechanisms, biodiversity provisions, cultural heritage procedures and templates for site-specific ESMPs and other relevant plans. The ESMF establishes screening, appraisal, disclosure, monitoring and corrective action processes applicable to future subprojects/subgrants.
30. **Compliance with GCF's environmental and social safeguards (ESS) standards.** The following paragraphs summarize the assessment of the programme's consistency with GCF's interim ESS standards.
31. **ESS 1 Assessment and management of environmental and social risks and impacts.** The AE has prepared an ESMF and ESIA/ESMP, which identify key risk pathways associated with ecosystem restoration, livelihood activities, small-scale infrastructure, grants and technical assistance interventions. Baseline E&S conditions, policy frameworks, alternatives and potential impacts and mitigation measures were assessed. The framework applies the mitigation hierarchy, requires subproject screening, excludes high-risk investments and mandates the preparation of additional safeguards instruments where risks are identified. Key risks identified include biodiversity disturbance, occupational risks, community safety concerns, waste generation, stakeholder exclusion and constraints with regard to capacity for implementation. These risks are addressed through screening, monitoring, disclosure, capacity-building and the development of management and corrective action measures.
32. **ESS 2 Labour and working conditions.** The programme may engage direct workers, contracted workers and consultants, and interact with subgrant beneficiaries. Labour provisions require compliance with national labour laws and GCF requirements, including applying principles of non-discrimination, equal opportunity, prohibition of child labour and forced labour, establishing occupational health and safety measures, and making worker grievance redress mechanisms available. Labour management planning and occupational health and safety procedures are incorporated into the safeguard framework given the possibility of occupational accidents and injuries and worker exposure to unsafe working conditions during project implementation. Subgrantees will be required to implement worker protections and report labour-related incidents and grievances.
33. **ESS 3 Resource efficiency and pollution prevention.** While programme activities are expected to generate positive environmental outcomes, certain interventions may generate localized waste, pollution associated with small-scale construction, restoration, waste management or livelihood activities, GHG emissions and resource-consumption impacts. The ESMF and ESMP require assessment of pollution risks, waste management, hazardous material controls, resource-efficiency measures and application of good international industry practice. Site-specific management measures will address waste handling and disposal, pollution prevention, restoration activities and small-scale infrastructure impacts.

34. **ESS 4 Community health, safety and security.** Potential community impacts include construction-related hazards, traffic- and transportation-related risks, exposure to hazardous materials, emergency situations and risks associated with subproject implementation in coastal communities. Community health and safety considerations are incorporated into screening and subproject design. Emergency preparedness, community awareness and consultation measures, universal access considerations and contractor management measures and obligations are included in the safeguard framework.

35. **ESS 5 Land acquisition and involuntary resettlement.** The programme does not finance involuntary resettlement or land acquisition requiring physical displacement. Activities involving category A impacts, involuntary resettlement or unacceptable restrictions on land use are excluded. Where land is required, preference is given to government land or voluntary arrangements consistent with safeguards requirements. Screening procedures will assess potential access restrictions and livelihood impacts and ensure that mitigation measures are in place before approval.

36. **ESS 6 Biodiversity conservation and sustainable management of living natural resources.** Biodiversity conservation is one of the programme's key objectives. Hence, activities adversely affecting critical habitats will be ineligible for financing. Screening procedures will identify sensitive habitats, protected areas and endangered and protected species. Existing management plans and biodiversity information will be used to guide decision-making, while biodiversity management and restoration measures will be incorporated into subproject implementation. The ESMF requires the avoidance, minimization and management of risks to ecosystems and natural resources.

37. **GCF Indigenous Peoples Policy & ESS 7 (Indigenous Peoples).** The funding proposal meets the requirements of the GCF Indigenous Peoples Policy and includes an Indigenous Peoples Planning Framework titled Indigenous Peoples Framework, which will guide the identification of Indigenous Peoples, the assessment of risks and impacts, culturally appropriate engagement and benefit-sharing. The project is expected to operate in areas where Indigenous Peoples may be present or have a collective attachment to coastal, marine and customary territories. Indigenous Peoples were engaged at the national level and their inputs informed the stakeholder mapping and analysis and the development of the Stakeholder Engagement Plan. Where activities may affect Indigenous Peoples, their lands, natural resources, livelihoods, cultural heritage, traditional knowledge or customary governance systems, the Free, Prior and Informed Consent (FPIC) process will be undertaken in accordance with the procedures set out in the Indigenous Peoples Framework. Site-specific Indigenous Peoples plans will be prepared where screening identifies Indigenous Peoples and potential project-related impacts or FPIC triggers. The project presents opportunities to strengthen customary governance systems, support community-based coastal and marine resource management, and promote the integration of Indigenous ecological knowledge into adaptation and conservation activities. The project commits to facilitating access by Indigenous Peoples to the grants facility and achieving participation of at least 80 per cent of identified communities in project design or implementation decisions during the first year of implementation. In line with their roles and functions, the Indigenous Peoples Advisory Group is available to provide advice to the AE and EEs. In line with the GCF Indigenous Peoples Policy, the GCF Indigenous Peoples focal point will be available for assistance at any stage, including before a claim has been made.

38. **ESS 8 Cultural heritage.** The framework recognizes both tangible and intangible cultural heritage. Screening and assessment procedures require the identification of cultural heritage concerns and potential damage to physical cultural resources during implementation. Adoption of appropriate management measures such as a cultural heritage management plan and "chance finds" procedures are incorporated into the safeguards instruments to ensure the protection and management of previously unidentified cultural resources should they be discovered during subproject implementation.

39. **Sexual exploitation, abuse and harassment (SEAH).** The project includes activities that involve the engagement of workers to support grantees and provincial governments in capacity-building activities through technical assistance, a context in which interactions among people may result in SEAH issues. Support for ecotourism is highlighted in the due diligence by the AE owing to sexual exploitation of children in the sector which may increase the risk of SEAH. Other contextual risk factors include low income levels and underreporting by survivors. In addition, an influx of male workers and contractors in local communities during implementation raises the risk of SEAH issues materializing. E&S risk screening of all subgrants to identify SEAH risks will be carried out prior to implementation. The project will adopt a zero-tolerance policy to SEAH in the workplace and within project-affected communities. Mitigation measures that are outlined in the ESMF include the incorporation of clauses associated with SEAH prevention and prohibition in contracts and subgrantee agreements, prohibiting sexual harassment and gender-based violence in all project activities, as well as embedding this in training and a code of ethics. In addition, the project will adopt a code of conduct for all project workers, as well as related awareness and sensitivity training. For component 2 activities involving grants, especially for ecotourism activities, SEAH awareness-raising will be provided to the local communities that will be engaged in such initiatives, together with active dissemination of grievance redress mechanisms. The gender action plan also incorporates SEAH mitigation measures. Response to SEAH cases will follow a survivor-centred approach. The AE will ensure that survivors receive timely information on available support services, including access to medical care, psychosocial support, legal assistance and referrals to appropriate protection. The project-level grievance redress mechanism will be available for receiving SEAH-related complaints and will include a dedicated, confidential channel that will be established for such complaints, ensuring anonymity and protection from retaliation. E&S monitoring will be supervised by the PMU, including any SEAH complaints received.

40. **Implementation arrangements.** The AE will provide overall safeguards oversight and supervision. KI, as the EE, will be responsible for safeguards screening, risk categorization, review of safeguards instruments, monitoring, disclosure, grievance management, incident reporting and corrective action, if required. Dedicated safeguards personnel are identified within the programme implementation arrangements. A PMU will be established to implement and monitor the ESMF. The PMU will assign an E&S and Safeguard Coordinator for E&S safeguards, monitoring and evaluation, gender and social inclusion, and grievance management functions. Subgrantees will be contractually required to implement safeguard obligations and report on E&S performance. The ESMF also establishes monitoring, capacity-building and budgetary provisions to support its implementation.

41. **Stakeholder engagement and information disclosure.** The programme has undertaken a stakeholder mapping and analysis and conducted consultations, meetings and field interactions with government institutions, local communities, vulnerable/disadvantaged groups, potential grantees, private sector and financing institutions and development partners during the proposal design process. During implementation, the ESMF requires that subproject preparation incorporate stakeholder consultation and engagement with government institutions, civil society organizations, communities and other relevant actors, and that it provide for continuous consultation, disclosure and participation throughout programme implementation. Site-level stakeholder engagement plans will also be prepared where necessary. Disclosure and consultation processes are integrated into safeguard screening and subproject approval procedures.

42. **Grievance redress mechanism.** The programme establishes grievance redress arrangements at the activity and institutional level. Stakeholders will have access to subproject-level grievance channels, the CI-GCF grievance procedures and the GCF Independent Redress Mechanism. The framework includes procedures for the receipt, registration, investigation, response, monitoring and closure of grievances. Subgrantees must also maintain accessible grievance channels and report grievances, incidents and corrective actions.

4.2 Gender policy

43. The gender assessment was prepared using a desk review of available information and focus group discussions with women and men working in the fisheries sector, non-governmental organizations and government officials at the provincial and district level. The gender assessment describes the gender dynamics in the context of the project, in particular as it relates to coastal and fishing communities. Differential roles that men and women small-scale fishers undertake are described in the gender assessment. Men do most of the fishing and take fishing trips out to sea. Women are generally not considered as fishers even though some actively fish for various marine resources. Women are predominantly involved in post-harvest activities, which are labour intensive, constitute a large percentage of the sector's workforce engaged in informal and low-skilled labour, and require long hours while offering less pay than that of men. Their contribution throughout the fisheries value chain is underreported and undervalued, which results in exclusion from programme assistance. In addition, the lack of safety measures and equipment to assist women in post-harvest activities leads to a high risk of accidents and injuries. Vulnerabilities due to reliance on marine resources, for both income and subsistence, are explained, as well as how this impacts resilience to the changing climate as catches decrease. The groups that are vulnerable to climate change in coastal communities tend to be highly reliant on marine resources. Women are particularly vulnerable due to lower income levels owing to the type of work they do in the fishing sector, with hindrances to their registration as fishers, which in turn limits their access to assistance, and the excessive burden of long working hours due to the domestic chores that they must do as well as the fishery work. Furthermore, elderly women and female heads of households are also identified as vulnerable due to their dependence on marine resources as the main source of income.

44. The gender action plan includes activities to address the issues that were identified and assessed in the gender assessment, as detailed below. To address women's burden of unpaid care work the project will schedule its training activities at times and venues accessible for women, provide compensation for travel costs and provide childcare support services when needed. The project will allocate grants for innovative research into improving fish processing technology with the aim of reducing the burden of excessive working hours and workload experienced by women in post-harvest tasks. In addition, the project will also gather data on the reduction in fish processing time by use of such technologies. Capacity-building to improve knowledge on climate change, sustainable fisheries and protection of the coastal ecosystem will target women as beneficiaries as well as other vulnerable groups, including female-headed households. Women will be supported in registering as fishers to enable them to receive government assistance provided to the fisheries sector. Outreach and proposal support activities will target women-led groups in the fisheries sector and subgrantees will receive capacity-building on mainstreaming gender in their proposals.

4.3 Risks

4.3.1. Overall project assessment (medium risk)

45. The overall project risk is assessed as medium. The project operates across multiple provinces and combines policy reform, institutional strengthening, ecosystem restoration, renewable energy deployment and management of a large grant facility. These features increase the complexity of implementation, particularly in relation to policy uptake, stakeholder coordination, grant appraisal, fiduciary oversight, safeguards screening and results aggregation. The risks are mitigated by the AE oversight role of CI, the technical and operational role of KI, a dedicated PMU, comprehensive safeguards instruments, structured grant procedures and ongoing monitoring arrangements.

4.3.2. Accredited entity/executing entity capability to execute the current project (medium risk)

46. The AE/EE capability risk is assessed as medium. CI, through its CI-GCF Agency, is responsible for overall technical, financial and administrative monitoring and supervision, including review and approval of annual workplans and budgets, reporting, audits and project closure. KI will serve as EE and is responsible for day-to-day execution, coordination and grant delivery, with Penabulu providing technical support for the on-granting mechanism. CI brings experience of GCF projects and fiduciary oversight capacity, while KI brings relevant marine conservation, stakeholder coordination and grant implementation experience. Residual risk remains due to the scale of the grant facility, the number of subgrantees and the need for consistent downstream oversight throughout implementation.

4.3.3. Project-specific execution risks (medium risk)

47. Project-specific execution risk is assessed as medium. Key risks relate to delays in the adoption or operationalization of policy reforms, variable capacity of subgrantees, coordination across government and local stakeholders, and potential challenges in monitoring and aggregating adaptation and mitigation results across multiple interventions. The project also involves activities in ecologically sensitive marine and coastal ecosystems, requiring careful safeguards screening and management. Mitigation measures include standardized grant procedures, eligibility and screening requirements, capacity-building for subgrantees and government counterparts, safeguards instruments, fiduciary controls and regular AE/EE supervision.

4.3.4. Compliance risk (medium risk)

48. The project is implemented through a grant-based delivery model involving CI, KI, subgrantees, contractors, service providers, and government and academic partners. While implementation is coordinated under CI's institutional governance framework, the project's decentralized delivery arrangements and multiple downstream funding relationships increase the importance of maintaining effective risk-based oversight throughout implementation.

49. Mitigation measures are comprehensive and integrated into the project implementation arrangements. KI has adopted the CI anti-money-laundering and countering the financing of terrorism (AML/CFT) policy and procedures, and first-level AML/CFT assessments and sanctions screening have been completed for the EE and identified implementation partners. All organizations receiving GCF resources will undergo CI-compliant due diligence and sanctions screening prior to grant award and before disbursements, with enhanced measures applied where warranted by the risk profile. These controls are complemented by integrity due diligence, grant agreement covenants on prohibited practices, financial reporting and expenditure verification, annual external audits, procurement oversight, site visits, mandatory training on prohibited practices, confidential reporting mechanisms and ongoing AE supervision throughout implementation.

50. Residual compliance risks remain because of the number of implementing organizations, downstream grant recipients and decentralized execution of project activities. Nevertheless, the extension of the AE institutional AML/CFT and integrity framework across the delivery chain, combined with layered due diligence, proportionate disbursement controls, ongoing monitoring, audit arrangements, and established reporting and escalation mechanisms, substantially mitigates these risks. On balance, the residual compliance risk is assessed as medium and considered acceptable given the strength of the governance and oversight framework of the AE.

4.3.5. GCF portfolio concentration risk (low risk)

51. GCF portfolio concentration risk is assessed as low. The project is medium-sized and does not materially increase GCF exposure from a country, sector or AE concentration perspective. It is aligned with GCF strategic priorities on ecosystems, adaptation, locally led climate action and climate-resilient livelihoods. The project also uses a grant instrument, which limits traditional credit exposure to GCF; residual risks relate primarily to implementation effectiveness, fiduciary oversight and compliance rather than portfolio concentration.

4.3.6. Recommendation

52. It is recommended that the Board consider the above factors in its decision.

Summary risk assessment	
Overall project	Medium risk
Accredited entity/executing entity capability	Medium risk
Project-specific execution	Medium risk
Compliance	Medium risk
GCF portfolio concentration	Low risk

4.4 Fiduciary

53. The fiduciary risk is assessed as medium and manageable. The project uses a grant-based delivery model involving CI, KI, technical partners, contractors, service providers and multiple subgrantees. This creates downstream fiduciary risks related to subgrant selection, procurement, disbursement, expenditure verification, financial reporting, audit trails and potential prohibited practices. These risks are mitigated through the CI accredited fiduciary framework, the adoption by KI of CI policies and procedures, sanctions and AML/CFT screening, risk-based due diligence before grant award and disbursement, grant agreement covenants, procurement oversight, expenditure verification, annual audits, site visits and confidential reporting and escalation mechanisms. Continued attention will be required to ensure that the grant operations manual, subgrant agreements and monitoring procedures are consistently applied across the full portfolio of adaptation and mitigation grants.

4.5 Results monitoring and reporting

54. The funding proposal and annex package provide a generally robust and internally coherent framework for results reporting and monitoring. The project is expected to deliver 483,322 t CO₂ eq of emission reductions over 6 years (1,298,901 t CO₂ eq over its 20-year lifespan), reaching 355,800 direct beneficiaries, 1,168,548 implementation-period indirect beneficiaries and 10,737,504 lifetime indirect beneficiaries. The results framework is anchored in four outcomes covering enabling conditions, community resilience, ecosystem restoration and blue economy resilience, with clear alignment to GCF mitigation and adaptation results areas. Outputs, outcomes, indicators, data sources, means of verification and reporting responsibilities are generally well defined.

55. The mitigation impact ex-ante estimation is supported by annex 22 and a dedicated GHG workbook quantifying emission reductions across MPAs, ecosystem restoration and renewable

energy interventions. The methodology includes uncertainty estimates and references, as well as field-based and geospatial verification approaches, providing a reasonable basis for ex ante estimation and future verification. The methodology with respect to adaptation beneficiaries is also well developed, with detailed definitions, calculation approaches, sex-disaggregated estimates and clear arrangements for beneficiary monitoring and reporting through grantees and the PMU.

56. The methodology with respect to indirect beneficiaries is ambitious but transparent. It distinguishes between implementation-period and lifetime beneficiaries and explains the pathways through which policy, financing and enabling mechanisms are expected to generate broader benefits. While acceptable for ex ante estimation, future reporting should demonstrate actual utilization of these mechanisms and avoid reliance solely on their establishment.

57. The logical framework, the monitoring and evaluation plan and grant manual establish measurable targets, verification mechanisms, third-party assessments, field inspections and reporting obligations. Institutional arrangements are comparatively strong, with dedicated monitoring and evaluation capacity, a database management system-based reporting architecture, grantee monitoring requirements, annual reporting, midpoint and final evaluations and provisions for baseline data collection where needed.

58. Several limitations remain manageable but warrant attention during implementation. Some baselines will only be established in year 1, grantee monitoring and evaluation capacity has yet to be confirmed, indirect beneficiary estimates rely on scaling assumptions that will require validation and GHG estimates carry an explicit ± 30 per cent uncertainty. Accordingly, future reporting should clearly distinguish between direct and indirect beneficiaries, document key assumptions and maintain transparency regarding uncertainty.

4.6 Legal assessment

59. The legal arrangements for the project will be based on the amended and restated accreditation master agreement between GCF and the AE which has been signed and is effective. Consequently, they will consist of a project-specific funded activity agreement which incorporates the accreditation master agreement.

60. The AE has provided a legal opinion/certificate confirming that it has obtained all internal approvals and it has the capacity and authority to implement the project.

61. The proposed project will be implemented in the Republic of Indonesia (the “Host Country”), a country in which GCF is not provided with privileges and immunities. This means that, among other things, GCF is not protected against litigation or expropriation in this Host Country, which risks need to be further assessed. Moreover, the ability of GCF to undertake redress activities and/or investigations in the Host Country may be hindered due to the absence of privileges and immunities for relevant GCF personnel.

62. Therefore, it is recommended that the Board consider whether disbursements of GCF proceeds should only be made after GCF has obtained satisfactory protection against litigation and expropriation in the Host Country, or has been provided with appropriate privileges and immunities for GCF and its personnel.

63. GCF does not hold industrial property protection for its combined logo (sphere with the words “Green Climate Fund”) in the Host Country. This means that, while industrial property protection is pending, (i) the GCF combined logo could be used by other entities or individuals (including those seeking to impersonate GCF) and (ii) there could be legal claims by entities or individuals asserting their protected trademark, opposing GCF using its combined logo in the country. In both cases, this may lead to reputational risk.

64. To facilitate prompt implementation of the project, it is recommended that any approval by the Board be made subject to the following conditions:
- (a) Signature of the funded activity agreement in a form and substance satisfactory to the GCF Secretariat within 180 days from the date of Board approval; and
 - (b) Completion of the legal due diligence to the satisfaction of the GCF Secretariat prior to the signature of the funded activity agreement.

Independent Technical Advisory Panel's assessment of FP317

Proposal name:	Blue Halo S – Blue Ecosystem Adaptation Mechanism (BEAM)
Accredited entity:	Conservation International Foundation
Country/(ies):	Indonesia
Project/programme size:	Medium

I. Assessment of the independent Technical Advisory Panel

1.1 Overview

1. The Blue Halo S – Blue Ecosystem Adaptation Mechanism (BEAM) project is a cross-cutting medium-sized, public sector initiative in Indonesia spearheaded by Conservation International (CI) as the accredited entity (AE) and executed by Yayasan Konservasi Cakrawala Indonesia (KI) (funding proposal, section A). The project leverages a "protection-production" model to transition Indonesia's marine and coastal economy into a climate-resilient blue economy. This model is designed to operate on two integrated components; Component 1 establishes the enabling conditions through policy and regulatory reforms, while component 2 serves as the practical application by providing locally led climate action subgrants and microfinance modernization (funding proposal, section B.3).
2. **The development problem and market failures.** The project focuses on Fisheries Management Area WPP 572, a massive marine zone spanning 94.3 million hectares adjacent to six provinces on Sumatra's western coast (feasibility study, section 1.3.2). This region produces approximately 19 per cent of Indonesia's marine catch, but its coastal populations suffer from high levels of poverty and food insecurity, increasing their vulnerability to impacts of climate change. The primary climate and development problems and market failures addressed by the project include:
 - (a) **Accelerating ecosystem degradation.** Climate change hazards (e.g. rising sea surface temperatures, sea level rise, coastal erosion and intense storm events) are rapidly degrading carbon-rich blue carbon ecosystems (e.g. mangroves and seagrasses) and coral reefs;
 - (b) **Weak and underfunded conservation management.** Less than 2 per cent of WPP 572 is legally designated as a Marine Protected Area (MPA). Existing conservation sites suffer from a "paper park" syndrome due to severe national and subnational budget deficits, weak enforcement and a lack of localized surveillance; and
 - (c) **Pervasive data gaps.** Inconsistent data collection, outdated stock assessments and a lack of standardized protocols prevent the Government of Indonesia from implementing evidence-based, climate-responsive quota systems, exacerbating illegal, unreported and unregulated fishing.
3. **The "credit gap" and predatory lending.** Small-scale fishers lose 20 to 30 per cent of their catch to post-harvest spoilage because they lack off-grid cold chain infrastructure. While government microcredit exists via the Public Service Agency for Marine and Fisheries Business Capital Management (Badan Layanan Umum Lembaga Pengelola Modal Usaha Kelautan dan

Perikanan (BLU LPMUKP)),¹ its application workflows are paper-heavy and manual, and a shortage of extension officers keeps it out of reach for remote communities. Consequently, unbanked local fishers rely on predatory informal loan sharks (feasibility study, section 3.11).

4. **Theory of change and intervention pathways.** The core goal of the project is to transition coastal marine management from unsustainable resource depletion to a self-reinforcing, climate-resilient protection-production model (feasibility study, section 6.10). The theory of change results chain is structured as follows: “IF key regulatory frameworks are improved, communities design and implement adaptation measures, carbon-rich ecosystems are conserved, and better access to finance is facilitated for blue economy actors THEN a sustainable protection and production model of coastal and marine management will be realized, resulting in improved climate resilience for coastal communities and reduced GHG emissions BECAUSE enabling conditions will be in place, communities will be empowered to create resilience and mitigate emissions, and the private sector will be able to expand sustainably” (funding proposal, section B.3.1). Key assumptions underlying the theory of change include subnational policy alignment, administrative and fiduciary capacity to scale up subgranting across six provinces and sustained community participation in conservation (funding proposal, section B.3.1).

5. **Funding and financial structure.** The project's financial architecture is structured as a public sector grant programme, recognizing that marine conservation and community-led adaptation generate societal public goods rather than direct commercial returns. The total project financing is USD 61.74 million, consisting of a requested GCF grant of USD 25.49 million and USD 36.25 million in parallel, in-kind co-financing from national and subnational governments, KI and Bung Hatta University (funding proposal, section C.1; budget, annex 4). The table below details the project's funding allocation by component and output.

Table: Use of funding proceeds

Project component and output	GCF grant (USD)	Co-financing (USD)
Component 1: Strengthen enabling conditions	6,870,000	34,397,824
Component 2: Locally led action and investment readiness	16,050,000	77,160
Project management costs	1,160,000	1,781,749
Monitoring and evaluation	1,410,000	0
Total project cost	25,490,000	36,256,733

6. **Implementation period and project lifetime.** The project implementation period is 6 years (2027–2032), consisting of a six-month startup period, 5 years of active implementation and a 6-month close-out and transition phase (implementation timetable, annex 5). The overall project lifetime, over which long-term ecological, carbon and socioeconomic benefits are calculated and monitored, is 20 years (economic analysis, annex 3a).

7. **Core design innovations.** The BEAM project exhibits four structural innovations that distinguish it from standard conservation proposals, and bring a focus on addressing climate change:

8. The protection-production integration, which links conservation incentives directly to sustainable livelihoods, ensuring that local communities are rewarded for maintaining the ecological integrity of their local MPA, highlighting the role of coastal and marine ecosystem services in underpinning these livelihoods;

¹ Marine and Fisheries Business Capital Management Agency.

9. The "financing continuum" credit bridge, which systematically prepares the local micro, small and medium-sized enterprises (MSMEs) that are supported under GCF grants to transition to government-subsidized microcredit systems (BLU LPMUKP), preventing post-project grant dependence;
 - (a) Legally mandated revenue retention, which establishes Regional Public Service Agencies (Badan Layanan Umum Daerah (BLUDs)) within subnational provincial governments, legally authorizing them to directly collect, retain and reinvest local tourism and service fees into marine conservation and climate risk management; and
 - (b) Digital measurement, reporting and verification, which integrates remote-sensing mapping (Global Mangrove Watch/Allen Coral Atlas) calibrated to the Indonesian National Standard (SNI) with the official Evaluation of Conservation Area Management Effectiveness (Evaluasi Efektivitas Pengelolaan Kawasan Konservasi (EVIKA)) management effectiveness scorecard of the Ministry of Marine Affairs and Fisheries (monitoring and evaluation plan, annex 11).

1.2 Impact potential

Scale: Medium

10. **Climate change mitigation targets and pathways.** The project is projected to avoid or sequester greenhouse gas (GHG) emissions amounting to 483,322 tonnes of carbon dioxide equivalent (t CO₂ eq) during its 6-year implementation phase and 1,298,901 t CO₂ eq over its 20-year project lifespan (GHG emissions narrative, annex 22). These targets are achieved through three synergistic pathways: (a) pathway 1: improved MPA management (activity 1.1.1): strengthening policy, enforcement and surveillance across existing and expanded MPAs in WPP 572, contributing 98,680 t CO₂ eq (6 years) and 298,028 t CO₂ eq (20 years) in avoided blue carbon losses (annex 22, table 5); (b) pathway 2: community-led conservation buffers (activity 2.1.1): providing local grants to reduce extraction pressures in coastal villages and adjacent 10 km spatial buffer zones, contributing 365,534 t CO₂ eq (6 years) and 848,975 t CO₂ eq (20 years) (annex 22, table 6) in avoided blue carbon losses; and (c) pathway 3: active ecosystem restoration green technology (activity 2.2.1): directly restoring 285 hectares of mangroves and 6 hectares of seagrass beds (sequestering 19,108 t CO₂ eq over 6 years and 151,899 t CO₂ eq over 20 years), alongside deploying 250 solar-powered freezers to reduce fuel reliance and post-harvest fish spoilage (avoiding 273 t CO₂ eq by year 6 compared with diesel alternative) (annex 22, table 7).
11. **Mitigation accounting conservatism and biophysical parameters.** To satisfy the GCF climate rationale principles (decision B.33/12), the ex ante emissions modelling incorporates several conservative safeguards (annex 22, section 4): (a) alignment with the Intergovernmental Panel on Climate Change Wetlands Supplement: biophysical calculations strictly utilize tier 1 and tier 2 guidelines from the Wetlands Supplement;² (b) restricted soil depth: mangrove and seagrass carbon stocks are restricted strictly to a 1-metre soil depth, completely excluding deep subsurface carbon pools to prevent overestimation; (c) conservative baseline loss rates. The project models a baseline annual seagrass decline rate of 2.82 per cent, which is lower than the 3.0 per cent decline rate reported by Indonesia's National Research and Innovation Agency (AE responses to independent Technical Advisory Panel (iTAP) batch 2, question #36); and (d) effectiveness index: baseline reference emissions are multiplied by a phased, staggered year-by-year effectiveness index (ranging from 0.0 to 1.0) to reflect realistic operational lag during rollout (annex 22, appendix 2).
12. **Adaptation impacts.** The project's adaptation framework aims to directly improve the climate resilience, food security and livelihoods of 355,800 direct beneficiaries (disaggregated

² 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands.

at 177,900 women and 177,900 men) and 10,737,504 indirect beneficiaries over the project's 20-year lifetime (adaptation beneficiaries, annex 24). Specific resilience indicators include improved food security for 169,340 individuals, supported livelihoods for 65,220 individuals and the adoption of climate-resilient innovations for 121,240 individuals; these climate-resilient innovations (i.e. technological, financial, digital, ecological and knowledge-based solutions designed to help coastal communities, small-scale fishers and blue economy MSMEs adapt to climate change) target the 121,240 individuals that represent community members, fishers and enterprise operators who actively adopt new practices, digital tools or green technologies that strengthen their adaptive capacity against rising sea surface temperatures, sea level rise and extreme weather (annex 24, section 1).

13. Indirect beneficiaries are defined as individuals working in or relying on blue economy sectors related to marine capture fisheries, mariculture and marine ecotourism across all coastal villages in Indonesia, who are expected to benefit from the implementation of public-private partnership mechanisms and policy reforms for MPA and coastal management, as well as strengthened access to climate-responsive concessional finance. The iTAP notes that this is an unusually wide scope for indirect beneficiaries of a geographically targeted project and is not convinced by the AE's rationale that "[t]his national scope reflects the potential for policy reforms and innovative financing mechanisms developed under BEAM to be adopted and replicated across Indonesia's coastal and marine fisheries sector" (annex 24 to the funding proposal). This predicted nationwide replication is speculative, since the project's national government engagement is focused on improving the regulatory, financial and policy environment to allow for effective protection and production in WPP 572, and does not include clear pathways to scale for the whole country.

1.2.1. Risks to climate impact potential

14. **Scientific and methodological gaps in mitigation.** Independent reviews by the iTAP and the Secretariat identified several key gaps in the scientific robustness of the project's mitigation case. The first is on the methodological uncertainty: biophysical inventory variables (i.e. ± 25 per cent error margin on seagrass area and a ± 30 per cent uncertainty on seagrass soil carbon stocks) result in a ± 30 per cent weighted project-level uncertainty range (annex 22, section 4). Under this sensitivity, the lower bound of the six-year target drops from 483,322 t CO₂ eq to 338,326 t CO₂ eq (Secretariat assessment, section 3.1). The second is on the issue of double counting risks in overlapping landscapes: component 1 policy interventions and component 2 community subgrants operate in overlapping spatial boundaries, creating a risk of double counting. While the project plans to use spatial geographic information system delineation to isolate overlapping polygons, any database failures will artificially inflate reported benefits. The third is on uniform seagrass loss assumptions: due to a lack of district-level historical data along the western Sumatra coastline, a single global seagrass loss rate of 2.82 per cent is applied uniformly to all provinces (AE responses to iTAP, batch 2, question #36). Last but not least, a headline lifespan claim error: section A of the funding proposal incorrectly claimed that the project would achieve emission reductions representing "more than half" of WPP 572's baseline reference emissions. The AE formally acknowledged that the 1.29 million t CO₂ eq target actually represents 47.3 per cent of the baseline and must be corrected to "almost half" (AE responses to iTAP, batch 2, question #38).³

15. For adaptation, the first issue is that several core adaptation indicators (e.g. localized baseline fisheries stock status, baseline household income levels and baseline food security indices) are not established ex ante and have been deferred to year 1 of implementation. This prevents GCF from verifying the initial vulnerability level at the appraisal stage (Secretariat

³ See also the unassessed transition-risk exposure of blue carbon market pricing noted under section 1.7, "Efficiency and effectiveness" below.

assessment, section 3.1). Another is the risks to biophysical reversals: the western coast of Sumatra (WPP 572) is a highly active tectonic subduction zone exposed to powerful earthquakes, tsunamis and severe Indian Ocean storm surges (feasibility study, section 3.6.1). Active mangrove and seagrass restoration has a high unit cost (up to USD 4,825 per hectare for mangroves and USD 66,944 per hectare for seagrass) and mangrove restoration faces a global long-term survival drop-off down to ~25 per cent due to wave exposure and other challenges (AE responses to iTAP, batch 2, Question #31). Despite these clear physical hazards, the project lacks any dedicated financial contingency reserve, insurance mechanism or budget buffer to cover the capital costs of physical replanting and rectification if a catastrophic localized wipeout occurs mid-project.

16. **Hectare mapping discrepancy.** A critical spatial discrepancy exists within the project's target boundaries. While annex 25 (target T5) commits to a total conservation and management area of 4,320,000 hectares (comprising 3,000,000 hectares of expansion and 1,320,000 hectares of existing MPAs), the narrative details a new national MPA of 3,000,000 hectares and provincial expansions of 713,000 hectares. If the narrative's 3,713,000 hectares of expansion is added to the 1,320,000 hectares of existing MPAs, the actual target area should be 5,033,000 hectares. This unreconciled 713,000-hectare gap between the results framework and the biophysical spatial descriptions introduces substantial baseline tracking risks that must be resolved ex ante.

17. The iTAP noted an unresolved three-way spatial discrepancy across the submission package: annex 25 (GCF legal targets) commits to 4,320,000 hectares (3,000,000 hectare expansion + 1,320,000 hectare existing); the funding proposal narrative claims a footprint of 5,033,000 hectares (incorporating 713,000 hectares of provincial MPAs); while the ex ante carbon model in annex 22 calculates mitigation benefits using a baseline of only 2,077,282.90 hectares (714,896.34 expansion). This results in a carbon model built on an expansion area roughly 76 per cent smaller than the legal target in annex 25, creating material tracking gaps across the logical framework, budget and economic financial analysis (EFA).

18. Based on the above, the iTAP assesses the impact potential as medium.

1.3 Paradigm shift potential

Scale: Medium

19. **Transformational narrative and scaling pathways.** The AE frames BEAM's paradigm shift as a transition of coastal and marine resource management "from unsustainable exploitation of marine resources to a climate-responsive protection-production model" (funding proposal, section B.6). The transformational model is designed to operate on three mutually reinforcing scaling pathways via (a) micro-scale locally led demonstration: a competitive grant facility under component 2 designed to field-test and prove the technical, social and financial viability of community-based protection-production models (feasibility study, section 6.4.2); (b) sectoral scale financial continuum and credit bridge: digitizing and modernizing the loan-processing systems of BLU LPMUKP under output 2.3 to establish an institutional credit bridge. This allows successful grant recipients to systematically graduate to concessional revolving debt, which recycles loan repayments for national-level scaling (feasibility study, section 6.4.1); and (c) macro-scale institutional and regulatory scaling: developing 11 improved policy and regulatory frameworks under component 1 (e.g. pelagic fisheries harvest strategies and subnational standard operating procedures) to embed climate-responsive management into Indonesia's permanent governance and marine zoning architecture (monitoring and evaluation plan, annex 11).

20. **Replicability and knowledge institutionalization.** To ensure that project lessons are sustained and replicated after close-out, subactivity 1.1.3.1 funds a permanent, physical Knowledge and Learning Center (KLC) hosted within Bung Hatta University in Padang, West Sumatra (feasibility study, section 1.1.3.1). The KLC and an online knowledge management

information systems will act as public-facing repositories of blue carbon methodologies and lessons learned. KLC operations will transition fully to the university's independent operating budget from year 4 onward, securing long-term regional capacity-building.

1.3.1. Risks to paradigm shift

21. **Gaps in transformational logic and uptake verification.** The project's paradigm shift potential is undermined by a logical framework that favours process outputs over measurable outcomes. Policy pathways conclude with deliverables such as recommendations and institutional setup, but lack uptake indicators, baselines and binding commitments from recipient institutions. The financial pathway similarly omits disbursement targets, credit baselines and metrics to track the grant-to-loan transition. More critically, the private sector graduation pathway remains unclear: as formally conceded by the AE under iTAP question 21, the project includes no investor-matching platform, guarantee facility or risk-sharing instrument. Instead, it relies solely on disseminating market intelligence papers (subactivity 2.3.1.2) and assumes that private capital will autonomously respond; an unmonitored and untested assumption that risks leaving community-led MSMEs reliant on grants or without a viable path beyond grant funding. Although the monitoring and evaluation plan (annex 11) incorporates scorecard assessments and system usage logs, these mechanisms do not compensate for the broader absence of robust, outcome-oriented indicators necessary to verify sustained, cross-provincial transformational impact.

22. Based on the above, the assessment for the paradigm shift is medium.

1.4 Sustainable development potential

Scale: Medium

23. **Co-benefits framework and Sustainable Development Goal (SDG) mappings.** The project aligns climate resilience and environmental conservation with local economic development (Secretariat assessment, section 3.3). Its co-benefits framework is mapped directly to several SDGs, as listed below.

- (a) **Environmental co-benefits (SDG 13, 14).** The proposed project seeks to expand marine sanctuaries to 3.7 million hectares (3 million hectares national, 713,000 hectares provincial), restoring 285 hectares of mangroves and 6 hectares of seagrasses, targeting a 2 to 3 per cent increase in coral reef cover and maintaining high mangrove density (>70 per cent on at least 85 per cent of targeted sites) (monitoring and evaluation plan, annex 11).
- (b) **Social and gender co-benefits (SDG 1, 2, 5).** The project seeks to reach 355,800 direct beneficiaries (strictly split at 50 per cent female and 50 per cent male), providing food security improvements to 169,340 unique individuals, establishing community savings groups, supporting female-led adaptation projects and registering informal female fishers for Marine and Fisheries Business Operator Cards (Kartu Pelaku Usaha Kelautan dan Perikanan (KUSUKA)) to grant them access to State social protection (gender action plan, annex 8).
- (c) **Economic co-benefits (SDG 8, 9, 17).** The funding proposal seeks to enhance financing community-designed livelihoods under component 2, including sustainable ecotourism, waste banks and the deployment of 250 solar-powered freezers to reduce post-harvest fish spoilage (funding proposal, section B.3).

24. **Traceability of co-benefits and indicators.** To ensure that co-benefits are traceable, the project utilizes a centralized database management system to track unique beneficiary entries and sex-disaggregated demographic profiles. Annual remote-sensing mapping of mangrove and seagrass extent is calibrated directly to the Indonesian National Standard (SNI

7717:2020 for mangroves, SNI 7716:2012 for seagrass), while MPA management effectiveness is verified using the Ministry of Marine Affairs and Fisheries official Evaluation of Conservation Area Management Effectiveness (Evaluasi Efektivitas Pengelolaan Kawasan Konservasi (EVIKA)) scorecard tool (monitoring and evaluation plan, annex 11). Furthermore, the project successfully addresses the quantitative bias of typical GCF indicators by weaving in essential qualitative tracking layers: monitoring the percentage of targeted women expressing increased confidence in household financial planning under the gender action plan; tracking qualitative ecotourism user satisfaction; utilizing the Food Insecurity Experience Scale of the Food and Agriculture Organization of the United Nations to capture the qualitative experience of dietary anxiety among households; and conducting a dedicated qualitative gender impact study in year 6.

1.4.1. Risks to sustainable development potential

25. The primary risk to sustainable development is the potential economic displacement of artisanal fishers. Strengthening marine protection boundaries and enforcing fisheries quotas can cause short-term economic losses by blocking traditional local fishers from their historical near-shore fishing grounds for many years before the long-term ecological benefits (increased catch yields) are realized (AE responses to iTAP, batch 2, question# 28). If participatory zonation and free, prior and informed consent processes are rushed, it could trigger local protests, community resistance and a breakdown in local trust. The lack of assessment on transition-risk exposure of blue carbon market pricing (noted under “Efficiency and effectiveness”) also contributes to undermining sustainable development potential; new MPA boundaries and fisheries quotas may create an immediate livelihood gap for artisanal fishers, leading to short-term economic displacement and income or food insecurity before ecological benefits materialize. Transition safeguards (e.g., participatory zoning, alternative livelihood grants, and credit safety nets) are essential to mitigate these short-term displacement effects. Without such safeguards, these adverse socio-economic outcomes will directly impede progress toward SDG 1 (No Poverty) and SDG 8 (Decent Work and Economic Growth).

26. The sustainable development potential is assessed as medium.

1.5 Needs of the recipient

Scale: Medium to high

27. **National context.** Indonesia is home to some of the most biodiverse marine ecosystems in the world – these ecosystems play critical roles in mitigating GHG emissions, offer numerous climate resilience benefits to coastal communities and are a key source of income and food security. Within WPP 572, coastal and marine ecosystems and fisheries are projected to experience continued degradation caused by climate change and non-climate drivers, resulting in higher GHG emissions, higher disaster risk for coastal populations and lower economic productivity. Compounding the impacts of climate change and inadequate management policy is underinvestment in the region, which limits the sustainable growth and economic activity that supports both communities and ecosystems (funding proposal, section D.4).

28. While Indonesia’s economy is growing, resulting in its recent uplisting to upper-middle income status, sustained support and investment are necessary to avoid setbacks and address threats including climate vulnerability and global political instability. The Government of Indonesia and the Indonesian financial sector (including national banks and private sector actors) have made considerable strides in establishing the country’s blue economy, through institutionalization of sustainable financing regulations and fostering partnerships between ministries and national financial institutions designed to facilitate investments in nature conservation. However, critical gaps remain, particularly in WPP 572, that hinder the full realization of a climate-resilient, sustainable blue economy in Indonesia. These gaps persist due

to structural limitations in public funding, low private sector capacity which deters investment, and a lack of solutions that explicitly de-risk investments while scaling ecosystem protection (funding proposal, section B.5).

29. **Socioeconomic and ecological vulnerability context.** National-level economic categorization masks deep subnational inequalities in Indonesia, particularly in remote coastal and island regions like WPP 572. These communities are among the poorest and most climate-vulnerable in the country, with limited access to services, infrastructure or adaptive capacity. Coastal populations adjacent to WPP 572 suffer from chronic poverty, geographic isolation and food insecurity, with three target provinces (Aceh, Bengkulu and Lampung) experiencing poverty rates (~14 per cent) that are significantly higher than the national average (9.4 per cent) (funding proposal, section B.3). These communities rely heavily on climate-sensitive marine ecosystems (e.g. mangroves, coral reefs and seagrasses) that are rapidly degrading due to sea surface temperature anomalies (+0.51 °C to +1.27 °C projected by 2060) and extreme storm-driven run-off (feasibility study, section 3.6.2). Lacking financial resources and technical capacity, local fishers lose 20 to 30 per cent of their daily catches to post-harvest spoilage and are trapped in a cycle of destructive extraction and predatory informal debt (feasibility study, section 3.11).

30. **Targeted interventions for vulnerable groups.** The project addresses these needs through the following four targeted, budgeted action pillars under component 2: (a) Food security and livelihood diversification via allocating USD 6.48 million in direct community grants under the adaptation window to fund sustainable ecotourism, collaborative MPA co-management, circular waste-bank systems and sustainable fishing practices (budget, annex 4); (b) Coastal habitat protection via allocating USD 3.52 million under the mitigation window for the active restoration of 285 hectares of mangroves and 6 hectares of seagrasses, physically reinforcing the natural capital that underpins coastal fisheries (budget, annex 4); (c) Cold-chain infrastructure gaps via procuring and deploying 250 off-grid solar-powered freezers to eliminate post-harvest catch spoilage and reduce operational fuel costs for artisanal fishers; and (d) Financial capital gaps via deploying USD 1.75 million in technical assistance under output 2.3 to digitize BLU LPMUKP's loan management system, streamlining microcredit processes and training 100 extension officers to unlock affordable credit flows for unbanked smallholders (feasibility study, section 6.4.1.7).

1.5.1. Risk to needs of the recipients

31. **Fiduciary and administrative constraints.** The primary risk to addressing recipient needs is the severe fiduciary and administrative capacity constraints of downstream community subgrantees. Disbursing and monitoring more than 60 localized subgrants across six provinces with local civil society organizations and cooperatives that lack sophisticated accounting and internal control systems represents a major compliance risk (Secretariat assessment, section 4.4). If weak compliance forces KI or CI to withhold, suspend or retrieve grant disbursements, it will stall on-the-ground implementation and foster local skepticism, leaving vulnerable communities without needed support.

32. Based on the above assessment, the potential for addressing the needs of the recipient is assessed as medium to high

1.6 Country ownership

Scale: Medium

33. **Coherence with national policy architecture.** The project is aligned with Indonesia's key policy planning frameworks, including the National Long-Term Development Plan (2025–2045), the National Medium-Term Development Plan (Rencana Pembangunan Jangka Menengah Nasional-RPJMN 2025–2029) and the National Action Plan for Climate Change

Adaptation (feasibility study, section 6.10). The project is anchored directly to the Ministry of Marine Affairs and Fisheries (MMAF) (Kementerian Kelautan dan Perikanan) long-term priority programmes, specifically the National Marine Protected Area Vision 30x45 targets, coastal waste management and the national quota-based fisheries framework (funding proposal, section B.4). Blue carbon interventions also align with Indonesia's national policy priorities, including the enhanced nationally determined contribution, Forestry and Other Land Use, Net Sink 2030, MPA Vision 30x45 and National Blue Economy Strategy (funding proposal, section B.5).

34. **National designated authority no-objection endorsement.** The formal no-objection letter (NOL) was issued on 13 July 2026 by Herman Saheruddin, Indonesia's Director General of Financial Sector Stability and Development at the Ministry of Finance, who serves as the GCF national designated authority (NOL, annex 1). The NOL formally communicates that the Government of Indonesia has no objection to the proposal and confirms that the project is in complete conformity with national priorities, strategies and plans.

35. **Stakeholder role clarity and commitments.** The project establishes contractually backed roles and financial commitments to ensure local country ownership after conducting 75 stakeholder consultations (i.e., vulnerable group, private sector) that happened during the design and planning phase. MMAF acts as the primary political champion and co-chairs both the Project Steering Committee and Technical Committee to provide policy oversight (funding proposal, section B.4). The subnational governments, namely the six adjacent Sumatran provinces of WPP 572 (i.e., Aceh, North Sumatra, West Sumatra, Bengkulu, Lampung and Banten) have demonstrated financial commitment by pledging substantial parallel in-kind co-financing (totalling USD 36.25 million) to support local MPA operations (co-financing letters, annex 13). KI serves as the sole executing entity with full day-to-day management authority. Technical partners are Penabulu Foundation, a non-governmental organization, which will provide grant management capacity-building to subgrantees, and Bung Hatta University, which will host and maintain the permanent blue economy KLC (term sheet, annex 14). The target beneficiaries (local cooperatives and MSMEs) will actively co-invest up to 20 per cent equity or in-kind assets in component 2 subprojects, moving away from passive donation recipient models.

1.6.1. Risks to country ownership

36. The primary risk to the project's strategic overview is political priority drift and subnational coordination failure. Under Indonesia's regional autonomy law, newly elected provincial and regency leaders hold immense fiscal and spatial zoning power (iTAP Batch 2 responses, Q28). If a subnational administration decides to prioritize short-term regional extractive industrial revenues over marine conservation, the local budget allocations and regulatory support for WPP 572 MPAs may be constrained, rendering the policy achievements under component 1 non-functional. This risk is exacerbated by the current administration's mid-term planning guidelines (RPJMN 2025–2029), which place heavy emphasis on national food security and major infrastructure with less explicit focus on expanding MPAs.

37. Given the above limitations of each of the stakeholders, the country ownership is assessed as medium.

1.7 Efficiency and effectiveness

Scale: Medium

38. **Cost-effectiveness and leverage ratio.**⁴ The economic analysis takes into account benefits from the value of ecosystem services provided by restored mangroves and seagrasses, fisheries benefits (e.g., avoided income loss, catch and stock loss) and the impact from the adaptation grants and mitigation grants (using illustrative subprojects in ecotourism, sustainable fisheries, waste management and renewable energy). The project exhibits strong economic justification, generating an economic net present value (ENPV) of USD 42.3 million (at an 8 per cent social discount rate), an economic internal rate of return of 29.1 per cent and a benefit–cost ratio of 1.67 over a 20-year appraisal period (economic analysis, annex 3a; feasibility study, section 6.9). GCF grant capital represents 41 per cent of total project costs, successfully leveraging USD 36.25 million in aligned parallel co-financing (a leverage ratio of 1:1.42) from public partners (budget, annex 4).

39. The financial analysis includes only the illustrative subprojects for grants window 1 (adaptation) and 2 (mitigation) and indicates that in all cases they have positive net present values and internal rates of return above 12 per cent over their assumed lifetime. Although these subprojects have potential to be profitable and become sustainable over the long term, none of them could be financed through commercial loans, even if they were available (economic and financial analyses, annex 3b).

40. **AE fee structure.** The requested AE fee is 6.77 per cent of the GCF project budget, totalling USD 1,726,528 (AE fees, annex 12). The AE fee is entirely separate from, and not duplicative of, any direct project costs. To prevent conflicts of interest, CI implements a strict segregation of duties policy: the CI-GCF Agency (a separate division of CI) serves as the AE providing project oversight and GCF liaison, while KI acts as the independent executing entity (annex 12, para. 1).

41. **Procurement and financial controls.** All procurement will follow the CI Procurement Process Standards, which meet GCF fiduciary standards. The KI procurement policies are fully aligned with CI, and the subsidiary agreement will incorporate contractual flow-down terms (procurement plan, annex 10). Procurement controls include planning, quarterly reporting, periodic inventories and multi-level purchasing approvals. For the first 12 months, the AE will approve all procurement packages above USD 50,000, and all packages above USD 150,000 thereafter (procurement procedures, annex 19).

1.7.1. Risks to efficiency and effectiveness

42. The project design successfully integrates physical climate risks by utilizing a Couple Modeled Intercomparison Project Phase 6 (CIMP6) six-Global Climate Model ensemble under three Shared Socio-economic Pathways (SSP) to project hazard exposures through 2060 (feasibility study, section 3.6.2). These hazards directly informed the design of component 2's grant themes. However, the project completely fails to integrate transition risks. There are no assessments of risks arising from national fisheries policy reforms, blue carbon market pricing volatility or financial sector decarbonization mandates (iTAP Batch 1 responses, Q5). This omission is material because at least two of the project's core mechanisms carry direct transition-risk exposure. The financing continuum credit bridge (output 2.3) depends on the continued policy and market viability of the BLU LPMUKP microcredit terms, which could shift under financial sector decarbonization mandates. Similarly, the mitigation case's long-term durability is exposed to blue carbon market pricing volatility, since carbon-linked revenue

⁴ Note: the co-financing and total-cost figures above have been reconciled against annex 4 (budget) and annex 12 (AE fees), which report total co-financing of USD 36,251,573 and total project financing of USD 61,742,887; the funding table in this section should be corrected to match.

underpins the incentive structure on which the protection-production model relies post-GCF. Neither exposure is currently assessed, priced or mitigated anywhere in the project design.

43. **The climate-EFA modelling disconnect.** A major methodological weakness identified by the iTAP is the disconnect between the physical climate modelling and the project-wide EFA. Despite compiling extensive CMIP6 SSP scenario projections, the EFA (annex 3a) was never stress-tested under scenario-specific climate pathways (such as SSP3-7.0⁵) (AE responses to iTAP, batch 1 question#10). Instead, the EFA's ENPV and viability indicators are evaluated under a generic, non-scenario-specific ± 20 per cent cost-benefit sensitivity buffer (EFA narrative, annex 3b). This failure to align the financial models with the project's central climate rationale represents an analytical gap. This methodological disconnect has real-world implications. Given that the EFA ENPV of USD 42.3 million and benefit-cost ratio of 1.67 were never stress-tested under downscaled CMIP6 SSP scenario projections or discrete, high-impact natural hazards (e.g. severe cyclones, especially under a confirmed El Niño event), the economic model assumes a static biophysical baseline. Given that Sumatran coastal ecosystems are highly exposed to extreme physical reversals, a single major storm event could physically destroy the restored 285 hectares of mangroves and 6 hectares of seagrasses mid-project, significantly reducing the projected economic benefits and negatively affecting the ENPV.

44. **Potential procurement and financial leakage risks.** Given that the project involves multiple subgrantees across geographically isolated islands in Sumatra, remote procurement and financial monitoring present significant operational risks. This is highlighted by the recent precedent of the Raja Ampat public service sector, where the Corruption Eradication Commission detected major financial leakages totalling IDR 5.12 billion in local revenues. This serves as a vital lesson for the newly established BLUDs in WPP 572 to implement robust financial software and digital accounting frameworks from day 1.

45. The systemic "linchpin" of project unsustainability. In analysing the project design from first principles, the single critical factor that presents a cascading, systemic risk to the entire project's sustainability is the legal and financial operationalization of the subnational provincial-level BLUD model (subactivity 1.1.1.4). If this specific institutional intervention fails, it triggers a domino effect of unsustainability across all criteria.

- (a) **Sustainable development would be constrained:** Without the BLUD model, local MPA management units cannot legally retain site-level revenues. Once GCF funding terminates, these units will have zero financial autonomy and must return to relying on unpredictable, highly constrained provincial budgets, which historically allocate less than 1 per cent of total expenditures to marine programmes.
- (b) **Impact potential reversal:** A biogenic carbon reversal may happen if and when operational budgets are lacking. The newly established MPAs will be unable to fund routine marine patrolling, fuel for surveillance vessels or seedling maintenance. The 3.7 million hectares of newly expanded or created MPAs will revert to unenforced "paper parks". Destructive commercial trawling and illegal mangrove harvesting may resume, triggering massive biogenic carbon reversals and completely erasing the targeted 1.29 million t CO₂ eq lifetime mitigation impact.
- (c) **Needs of recipients unattained:** As open-access, destructive extraction resumes, the local fisheries stock may collapse. The alternative livelihoods established under the component 2 grants (such as community ecotourism or mariculture) may fail because their underlying ecological assets (coral reefs and healthy mangroves) have been

⁵ SSP3-7.0 = a future where international cooperation is weak, emissions remain high, and the world experiences substantial climate warming and associated climate risks. Source: IPCC. 2021. Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press.

degraded. This may drive the 355,800 direct beneficiaries back into severe food insecurity and poverty.

- (d) **Paradigm shift delayed:** The financing continuum relies on community MSMEs establishing a successful operating record under GCF grants to "graduate" and qualify for BLU LPMUKP concessional loans. If local ecosystems and livelihoods collapse, these MSMEs may fail BLU's basic cash-flow and business-viability assessments, making them ineligible for credit and forcing them back into absolute dependence on predatory, informal loan sharks.

46. In response to a question from the iTAP pertaining to the BLUD set up, the AE gave its assurance that it can set up the BLUDs during the project implementation period, emphasizing that it has already had experience in establishing several BLUDs (AE-iTAP video call).

47. Given the above, the project's efficiency and effectiveness are rated as medium. This rating reflects that the project's cost-effectiveness case is quantitatively strong, but is weighed down by the unresolved transition-risk gap and the EFA-climate modelling disconnect described above, both of which bear directly on the durability of the projected returns.

II. Overall remarks from the independent Technical Advisory Panel

48. The Blue Halo S – BEAM project is a technically innovative, highly necessary climate adaptation and mitigation initiative in Indonesia's coastal marine sector. It introduces the protection-production model, linking community-based natural resource management directly with regulatory enforcement and microfinance digitization.

49. However, the project's overall rating is constrained by deferred design elements (i.e. grant eligibility scoring weights) and a methodological disconnect between the physical climate vulnerability projections and the economic cost-benefit models.

50. **Core strengths.** The credit continuum (output 2.3), which seeks to digitize and modernize the BLU LPMUKP loan-processing systems, establishes a highly credible pathway for transitioning mature community MSMEs from grant dependency to concessional revolving credit (Feasibility study, section 6.4.1.7). The provincial BLUD model (component 1), which seeks to legally authorize site-level MPA units to directly collect, retain and reinvest local tourism and concession fees provides a self-funding operational exit strategy (Feasibility study, section 6.10). The technical restoration methods (activity 2.2.1), which seeks to shift the engineering focus from "mass planting" to ecological and hydrological restoration, incorporates vital lessons from prior domestic failures (AE responses to iTAP batch 2 question# 31).

51. **Weaknesses.** The EFA-climate disconnect (annex 3a) undermines the economic cost-benefit analysis as it omits incorporating downscaled coupled model intercomparison project phase 6 climate scenario projections or discrete natural hazard events into its sensitivity testing (AE responses to iTAP batch 1, question # 10) for the ecosystem service benefits. Deferred grant award scoring (annex 26/27) delays the objective scoring, weighting and selection mechanisms for awarding USD 10 million in community subgrants as it does not exist in the submitted package, leaving the facility vulnerable to mission drift (AE responses to iTAP batch 1, question # 7). Process-centric replication pathways falls short of replication potential as it terminates at process outputs (e.g. drafting reports, establishing a university centre) rather than defining monitorable uptake outcomes. Sustainability of project results depends heavily on the successful operationalization of the BLUDs, and if this is not successful, the project will fall short in relation to several investment criteria.

52. Based on the analyses presented in sections 1.2 to 1.7 above, the iTAP recommends that the AE address the identified weaknesses and secure the project's long-term sustainability, through the following actions in cooperation with the executing entity:

- (a) Integrate a dedicated transition-risk screening framework covering fisheries policy reforms, blue carbon market pricing dynamics and financial sector regulatory shifts into the project's monitoring and evaluation plan (annex 11) prior to project implementation, ensuring early detection and mitigation of socioeconomic shocks to local communities;
 - (b) Prior to launching the first call for proposals under component 2, finalize the Operational Grants Manual with minimum scoring weights, for example, 30 per cent for demonstrated climate mitigation and/or adaptation impact and 20 per cent for financial sustainability and exit strategy, within the appraisal matrices; and
 - (c) Ensure all subgrants involving the procurement of physical capital assets or renewable energy hardware undergo site-specific geographic pre-screening against the disaster risk management plan (annex 6b, appendix 5) prior to fund disbursement, verifying that assets are sited outside active erosion, storm surge or high-magnitude seismic hazard zones.
53. The iTAP recommends that the Board approve this funding proposal, with the following conditions:
 - (a) Condition precedent to first disbursement of GCF proceeds under the FAA:
 - (i) Prior to the first disbursement of GCF proceeds under the FAA, the AE shall submit, in form and substance satisfactory to the GCF Secretariat, (i) a reconciled, high-resolution geographic information system polygon map establishing the precise administrative boundaries of target MPAs; (ii) an updated, annex 25 (Contributions of the BEAM project to GCF's Updated Strategic Plan 2 targets) to the funding proposal; and (iii) a recalibrated annex 22 (Assessment of GHG emission reductions and their monitoring and reporting) to the funding proposal, together with, corresponding updates to annexes 4 (budget), and 3 (economic and/or financial analyses in spreadsheet format) to the funding proposal, ensuring that the headline 1.29 million t CO₂ eq mitigation target is mathematically traceable to the committed management footprint.
 - (b) Condition precedent to second disbursement of GCF proceeds under the FAA:
 - (i) Prior to the second disbursement of GCF proceeds under the FAA, the AE shall submit, in form and substance satisfactory to the GCF Secretariat: an implementation plan developed by the executing entity, in coordination with the Ministry of Marine Affairs and Fisheries and target provincial governments, to institutionalize the Badan Layanan Umum Daerah (Regional Public Service Agency) units for target WPP 572 MPAs as entities empowered to retain and reinvest site-level revenues, securing operational self-sufficiency post-project.

Response from the accredited entity to the independent Technical Advisory Panel's assessment (FP317)

Proposal name:	Blue Halo S – Blue Ecosystem Adaptation Mechanism (BEAM)
Accredited entity:	Conservation International Foundation
Country/(ies):	Indonesia
Project/programme size:	Medium

Impact potential

CI notes iTAP's assessment of the Project's impact potential with thanks.

CI would like to clarify a few points:

- CI recognizes that achieving the indirect beneficiary target of the Project requires national adoption of regulatory and policy reforms piloted in WPP572 – this scaling is desired and prioritized by the relevant national government authorities (para 11).
- CI notes that Annex 22 does not include double counting of GHG emissions resulting from establishment and management of MPAs, or restoration and rehabilitation of mangroves and seagrass (para 12).
- The discrepancy in hectare mapping between the FP and Annex 22 (GHG emissions) is in part because some MPA expansion / creation is for offshore MPAs that will not result in additional carbon sequestration (para 14/15). CI recognizes the inconsistency between Annex 25 and the FP and will correct this per the recommended iTAP condition.

Paradigm shift potential

Thank you for these comments. CI notes that some gaps identified in paragraph 19 include interventions that were previously included in BEAM design, but were removed as the budget for the Project was reduced through discussions with the GCF Secretariat. However, CI believes the remaining interventions will achieve the desired paradigm shift.

Sustainable development potential

CI agrees with the iTAP reviewers that FPIC is critical to the success of Project interventions (please see Annexes 6a, 6b, and 6e) and will be followed during implementation – particularly for the establishment of new MPA boundaries and regulations.

Needs of the recipient

CI thanks iTAP for the positive assessment. CI agrees with iTAP reviewers that a key risk is the fiduciary and administrative capacity of grantees. For this reason, significant support is included in the Project design and budget to support grant applications, implementation / management capacity, and M&E for these local institutions. The project will deploy both in-kind and fixed-amount sub-awards to mitigate implementation challenges.

Country ownership

iTAP's assessment is noted with thanks.

Efficiency and effectiveness

Per paragraph 43, CI notes that the legal and financial operationalization of the BLUD model is one method to provide funding for ongoing MPA management but is not the sole option to ensure ongoing financing for MPA management. Other possible sources of revenue, including public private partnerships, will also be developed during implementation.

Per paragraph 41, CI notes that the example of total loss of restored mangroves and seagrass mid-project would reduce ENPV to USD 30.4 million and the benefit-cost ratio to 1.48. This is well within the range of the sensitivity analysis and is approximately equivalent to a 10% loss in project-level benefits with no change in costs.

Overall remarks from the independent Technical Advisory Panel:

CI thanks iTAP for the thorough and detailed assessment of the BEAM Project.

CI appreciates the recommendations provided by iTAP (para 50) and will incorporate risk screening to mitigate socioeconomic shocks, appropriate weighting of climate mitigation, adaptation, and sustainability when evaluating grantee proposals, and site-specific disaster risk screening during implementation.

CI notes iTAP's recommended conditions (para 51) and will develop appropriate FAA conditions with the GCF secretariat.

Blue Halo S – Blue Ecosystem Adaptation Mechanism (BEAM)

ANNEX 8: Gender Assessment Report and Gender Action Plan

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ACRONYMS

ABR	Adolescence Birth Rate
AMAN	<i>Aliansi Masyarakat Adat Nusantara/</i>
APM	<i>Angka Partisipasi Murni/</i> Nett Enrollement Rate
APK	<i>Angka Partisipasi Kasar/</i> Gross Enrollment Ratio
BEAM	Blue Ecosystem Adaptation Mechanism
BPS	<i>Biro Pusat Statistik/</i> Statistics Indonesia
BUMDES	<i>Badan Usaha Milik Desa</i>
FAO	Food and Agriculture Organization
FGD	Focus Group Discussion
GAP	Gender Action Plan
GCF	Green Climate Fund
GDI	Gender Development Index
GESI	Gender Equality and Social Inclusion
GoI	Government of Indonesia
HDI	Human Development Index/ <i>Indeks Pembangunan Manusia (IPM)</i>
KEMENPAREKRAF	<i>Kementerian Pariwisata dan Ekonomi Kreatif</i>
KIARA	<i>Koalisi Rakyat untuk Peradilan Perikanan</i>
KIP	<i>Kartu Indonesia Pintar</i>
KPPPA	<i>Kementerian Pemberdayaan Perempuan dan Perlindungan Anak</i>
KTP	<i>Kartu Tanda Pengenal</i>
KUBE	<i>Kelompok Usaha Bersama</i>
KUSUKA	<i>Kartu Pelaku Usaha Kelautan dan Perikanan</i>
MMR	Maternal Mortality Rate
MOST	Management of Social Transformation Program
MYS	Mean Years of Schooling / <i>Rata-Rata Lama Sekolah (RLS)</i>
NGO	Non Governmental Organization
PKH	<i>Program Keluarga Harapan</i>
Poklahsar	<i>Kelompok Pengolah dan Pemasar (Ikan)</i>
SSF	Small-scale fisheries
WA	Whatsapp Application
WPPNRI	<i>Wilayah Pengelolaan Perikanan Negara Republik Indonesia</i>

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Executive Summary

Introduction

Communities globally have been impacted by climate change, with different levels of severity and variety, affected by geographical, social, cultural, and economic factors. Coastal communities are at the forefront of being impacted by climate change. Furthermore, the 2007 Human Development Report underscores that climate change is not gender neutral. Gender inequality intersects with climate risks and vulnerabilities. Several factors are associated with gender inequality in the literature, highlighting how men and women experience their social, economic, and environmental realities differently. In Indonesia, there is a significant proportion of women in the fisheries and aquaculture value chain, mostly responsible for non-vessel activities and disproportionately constitute a large percentage of the workforce engaged in informal, lowest paid, least stable, and tasks considered to be least skilled. Acknowledging the importance of addressing barriers faced by women and other vulnerable groups, the Blue Halo S-Blue Ecosystem Adaptation Mechanism (BEAM) Project, which aims to support the Government of Indonesia's target in responding to the impact of climate change, conducted a gender assessment. The study was conducted in six provinces covered in WPPNRI (*Wilayah Pengelolaan Perikanan Negara Republik Indonesia*) 572, namely Aceh, West Sumatera, North Sumatera, Bengkulu, Lampung, and Banten, which will be the area for the initial pilot of Blue Halo S. The result of the study is utilized to develop a Gender Action Plan (GAP), covering recommendation to strengthen adaptive capacities to ensure the project achieving gender equality and social inclusion.

Methodology

The assessment was conducted with qualitative study as a main approach, utilizing in depth-interviews, focus group discussions (FGD) with 64 male and 71 female participants from community groups engaged in fishery and other blue economy field, relevant government officials, and non-governmental organizations, as well as observations on relevant activities in fisheries. The analysis utilizes qualitative content analysis method, where themes or patterns that emerged from the data were identified through a systematic classification process of coding. The study also collected quantitative/numerical data from local government offices and websites as secondary data, most of which underwent analysis using descriptive statistical methods. This information serves to enhance the understanding of the provincial socio-economic context, thereby reinforcing the qualitative analysis.

Findings

The study finds that those regarded as small-scale fisheries actors, particularly small-scale poor traditional fishers (male and female), women working in post-harvest, workers in fish farms, female elderly, and female heads of the household in coastal areas, are the most vulnerable to climate change, due to their high reliance on marine resources. While in general, fishers and other community groups in coastal areas have low awareness of climate change phenomenon (perceiving the relevant nature signs as part of inevitable/ non-preventable changes of natural phenomenon) and have been affected in their ability to make ends meet, women have been impacted significantly by extreme weather events and other damages caused by both climate and non-climate drivers, and have to juggle with domestic chores. Moreover, women's contribution throughout the fishery value chain is underreported, which in turn causes their roles to be undervalued and excluded from relevant program assistance. These factors have been impacting the ability of women and vulnerable groups to adapt to climate change. Program and assistance received by coastal fisher households across six provinces are limited, including those relevant to the fishery sector since they have an intersection with the interests and needs of coastal communities and the ones that target poor households in general.

Recommendations

The study highlights several issues that need to be addressed to ensure the project aims for gender equality and social inclusion, ranging from low awareness and knowledge on climate change, sustainable fishery and livelihoods among women and other vulnerable groups, lack of sex-disaggregated data and information about roles of women in blue economy sectors that lead to lack of acknowledgment of women's contribution to fishery and access to government program and assistance, to the need for improving research and the development of assisting technology for fishing and processing to improve the livelihood of those in need, as well access for them to channel their aspiration and participate in decision making and collective learning. To address the issues, the study recommends strengthening adaptive capacity of women and other vulnerable groups by building five critical domains, including assets that can be accessed in times of need, flexibility in changing adaptation strategies, social organizations, the learning process to recognize as well as respond to change, and agency to take action in dealing with the impact of climate change. The measures are expected to enable women and other vulnerable groups to anticipate and respond, mitigate the consequences of climate change, and build the ability to recover and find new opportunities from the change as an advantage.

Report Gender Assessment for Blue Halo S Program

I. Introduction

The Blue Halo S¹ - Blue Ecosystem Adaptation Mechanism (BEAM) Project aims to support the Government of Indonesia's target to transform the country's marine and coastal economy in responding to the impact of climate change by ensuring that marine production benefits from protection while driving sustainable growth and development. Focused on the protection of resources and ecosystem, producing blue carbon, decreasing vulnerabilities to climate change, supporting the advancement of science, empowering the local community, boosting investment in fisheries, and expanding the market for Indonesian fisheries products, the program was designed to close the ecological and economic loop between ocean production and protection. As suggested by the developmental and environmental conservation community globally, the strategy of the program will cover the domain of climate change adaptation and mitigation², prioritizing the expansion of support for Marine Protected Areas (MPAs) and financing for community-based investments. The initial pilot of Blue Halo S will be focused on Fishery Management Area or WPPNRI (*Wilayah Pengelolaan Perikanan Negara Republik Indonesia*) 572, which will include West Sumatera and Indian Ocean, with a plan for replication and scale-up throughout the entire Indonesian archipelago and beyond. Administratively, WPPNRI 572 covers six provinces: Aceh, West Sumatera, North Sumatera, Bengkulu, Lampung, and Banten. Component 1 strengthens policies, institutions, data systems, marine protection, and creating the enabling conditions for the GoI's regulatory and policy transition to a sustainable blue economy. Component 2 supports locally led climate action through adaptation and mitigation subgrants, together with pre-identified investment-readiness activities. Konservasi Indonesia will serve as the sole Executing Entity. Gender equality and social inclusion will be integrated across both components. The Project will address barriers that limit women and vulnerable groups from accessing information, finance, technology, livelihood support, decision-making, and Project benefits.

Having extensive resources and biodiversity, WPPNRI 572³ has critical roles in marine and fishery production in the country, which will eventually affect social and economic welfare in the surrounding region. Aligned with national priority in marine and fishery management, one of the objectives of the Blue Halo S program is to improve community well-being and resilience to climate change, especially in coastal communities. Within the fishery management plan, WPPNRI 572⁴ it is explicitly emphasized that the social aspect is inseparable within the integrated management, aiming to improve community well-being, particularly the coastal marine community. This is also aligned with the mandate of Law no 7/ 2016 on Protection and Empowerment of Fishers, Fish Farmers, and Salt farmers (*Perlindungan dan Pemberdayaan Nelayan, Pembudidaya Ikan dan Petambak Garam*), which highlights the importance to protect and

¹ The Blue Halo name is based on the understanding that when the resources of ocean (blue) are protected and well managed, the environmental benefits (halo) will impact livelihoods, equity, and food security. BEAM is part of the Blue Halo S Platform. More information about the program can be accessed here <https://www.konservasi-id.org/inisiatif-program-nasional/blue-halo-s>

² Adaptation in climate change context defined as "changes in processes, practices, and structures to moderate potential damages to or benefit from opportunities associated with climate change." Mitigation is referring to "an anthropogenic (human made) intervention to reduce the sources of green-house gases or enhance their sinks (IPCC (as cited in UNDP, 2009))

³ WPPNRI 572 covers 94,368,838 Ha, including conservation area (2020) 1,318,007 Ha, with captured fish production 713,720 ton. Information about WPPNRI 573 can be seen in <https://kkp.go.id/djpt/ditpsdi/page/5049-wppnri-572>

⁴ Based on Decree of Minister of Maritime Affairs and Fisheries no 76/2016

empower in particular small scale holders in fisheries, and that climate change with all the related risks need to be addressed to protect and empower these vulnerable groups.

Communities globally have been impacted by climate change, with different levels of severity and variety, affected by geographical, social, cultural, and economic factors. Coastal communities are at the forefront of being impacted by climate change. The 2007 Human Development Report highlights that climate change exhibits gender-specific implications. Gender inequality intersects with climate-related risks and vulnerabilities, with women being disproportionately affected by climate change-induced events, resulting in a higher number of female casualties in extreme weather incidents compared to men.^{5,6,7} Several factors are associated with this inequality in the literature, highlighting how men and women experience their social, economic, and environmental realities differently. As survival from disaster is highly determined by social factors like poverty, access to resources, and process of decision making, women are more often to have higher vulnerability to climate impact because women are more likely to live in poverty⁸, have limited access to land ownership, health care, education, face more restrictions to contribute in the social sphere, as well as policy and decision-making process in the community, that eventually limit their freedoms and options to deal with climate change⁹.

In the context of fishery and the blue economy in general, most of the inequalities are also reflected and rooted in gender-based task allocation throughout the value chain. As occurs globally¹⁰, there is a significant proportion of women in the fisheries and aquaculture value chain in Indonesia, mostly responsible for non-vessel activities and disproportionately constitute a large percentage of the workforce engaged in informal, lowest paid, least stable, and works considered to be least skilled¹¹. One of the studies in Indonesia conducted by *KIARA (Koalisi Rakyat untuk Peradilan Perikanan)* shows that 48% of income from fishers' households comes from women, and the majority of female fishers work more than seventeen (17) hours a day. Despite their valuable contributions, women's roles in the fishery and the blue economy in general in Indonesia are still overlooked. Combined with issues related to the absence of legal recognition from the government and inadequate data on their existence, women are often denied their right to access social protection, financial and other kind of government assistance¹². On the other hand, despite the fact that in a patriarchal society, men have more access to information and other resources to deal with climate change, poor and small-scale male fishers are reported to be prone to a

⁵ Bambrick, H. (2015, October 26). Worldwide, Climate Change is A Worse News for Women. The Conversation. <https://theconversation.com/worldwide-climate-change-is-worse-news-for-women-49668>

⁶ Pratiwi, A.M. (2023, November 17). Bagaimana Perubahan Iklim Memperparah Ketimpangan Gender di Kawasan Pesisir?. The Conversation. <https://theconversation.com/bagaimana-perubahan-iklim-memperparah-ketimpangan-gender-di-kawasan-pesisir-217923>

⁷ United Nations Development Programmes. (2009). Resource Guide on Gender and Climate Change.

⁸ Women Watch: Information and Resources on Gender Equality and Empowerment of Women. Women and Poverty. https://www.un.org/womenwatch/directory/women_and_poverty_3001.htm

⁹ United Nations Development Programmes. (2009). Resource Guide on Gender and Climate Change.

¹⁰ Food and Agriculture Organization of The United Nations. (2022). The State of World Fisheries and Aquaculture 2022. Advancing Towards Gender Equality in Fisheries and Aquaculture. <https://www.fao.org/3/cc0461en/online/sofia/2022/gender-equality-in-fisheries.html>

¹¹ Napitupulu, L., Smita, T. (2020). 3 Reasons why Women in Fisheries Matter for An Inclusive Economic Recovery. World Resources Institute (WRI) Indonesia. <https://wri-indonesia.org/en/insights/3-reasons-why-women-fisheries-matter-inclusive-economic-recovery>

¹² Medianti, E., Ade, Y. (2022, March 6). Menghapus Bias Gender di Pesisir Indonesia. Mongabay. <https://www.mongabay.co.id/2022/03/06/menghapus-bias-gender-di-pesisir-indonesia/>

large set of vulnerabilities; they face hazardous impact due to their nature of work on board fishing vessels^{13 14 15}.

To have an effective and impactful climate change adaptation strategy, the evidence is mounting that prioritizing women and the most vulnerable groups is crucial; vulnerable groups are impacted more by climate change, with women and children being 14 times more likely to die during a disaster¹⁶. It is evident that the most vulnerable groups are often excluded from programs and policies on conservation and alternative livelihood program, and this has been a common source of failure of these programs and policies, eroding desired impacts¹⁷. Protection of vulnerable groups from the impact of climate change by ensuring any innovations do not impose further burdens on these groups is declared as one of the main principles In Indonesia's National Adaptation Strategy Plan 2019 developed by *Bappenas*¹⁸, local communities have been identified as one of the key stakeholders to be empowered by increasing or maintaining their adaptive capacity¹⁹ to cope with climate change. Acknowledging the importance of developing gender sensitive and inclusive program design to address barriers faced by women and vulnerable groups, Blue Halo S conducted a gender assessment, and the result will be utilized to develop a Gender Action Plan (GAP) to ensure the design of the program promotes gender equality.

II. Objectives

The objectives of this Gender Equality and Social Inclusion (GESI) assessment are described below:

1. To identify potential beneficiaries for the program, in particular for targeted women and other vulnerable groups, so that the project will be able to increase the resilience and adaptive capacity of coastal community livelihood.
2. To ensure that women and vulnerable groups have fair access to Project participation, resources, services, subgrants, livelihood opportunities, decision-making, and grievance mechanisms.
3. To understand more how the livelihood of women and other vulnerable groups will be impacted by climate change, especially on how the gender roles will affect men and women (roles, access to, control of resources) differently at household and community levels, and what factors related to their vulnerabilities contribute to their resilience and adaptive capacity.
4. To understand specific potential barriers that will be faced specifically by certain vulnerable groups, including how men and women will be affected differently by these barriers to participate and access the project benefits
5. To identify efforts that had been done and required to address the needs and barriers faced by women and other vulnerable groups of coastal marine communities to increase their resilience and adaptive capacity to climate change

¹³ Ministry of Women Empowerment and Child Protection, Republic of Indonesia. (2015). Technical Guideline: Gender-Responsive Climate Change Adaptation at Regional level

¹⁴ Food and Agriculture Organization of the United Nations (FAO). (2016). The State of World Fisheries and Aquaculture: Contributing to food security and nutrition for all

¹⁵ Suhartoyo, F.M., Oksfriani, J.S., Novie, H.R. (2022). Occupational Accidents among fishermen in Manado, South Sulawesi. <https://ejournal.unsrat.ac.id/index.php/eclinic>

¹⁶ UN Women. (2018). *Turning Promises into Action: Gender Equality in the 2030 Agenda for Sustainable Development*

¹⁷ The World Bank. (2023). Social Dimensions of Climate Changes in Indonesia

¹⁸ Indonesia's Ministry of National Development Planning (*Bappenas*), (2019). National Adaptation Plan 2019

¹⁹ Adaptive capacity is "The (in)ability of communities to cope with the expected impacts of climatic changes. The capacity to adapt is driven by social and economic factors, such as access to information, political power, and networks; and access to resources and opportunities, including the ability to diversify away from at-risk livelihoods (such as skills, remittances, ability to migrate). (The World Bank, 2023)

6. To identify relevant and strategic entry points and mechanisms in the program design, including financing and investment mechanism under window 3 to mainstream and promote gender equality, as well as meaningful participation of women and other vulnerable groups.
7. Collect other relevant data and information that will be identified further during the assessment to develop a Gender Equality and Social Inclusion Action Plan for Blue Halo S.
8. To integrate gender equality and social inclusion into Project screening, appraisal, implementation, monitoring, and reporting.

Based on these objectives, this assessment will address these research questions:

1. Which women's and community groups can be identified as the most vulnerable groups in a coastal marine context that will be relevant for the Blue Halo S program?
2. How will their vulnerabilities affect their ability to be resilient and adapt to climate change?, and What factors contributed to their vulnerabilities?
3. How gender roles affect men and women differently at household and community levels (in roles, access to, control of resources, and decision making), particularly in relation to their involvement in fisheries and aquaculture sector.
4. What existing efforts have been done to address barriers faced by women and other vulnerable groups in becoming resilient and adaptive to climate change? What has worked and what has not? What is required to address these barriers?

III. Output

This GESI assessment will produce these documents as described below, which will be included in this report:

1. **Report document for the result of qualitative analysis.**
2. **Gender Action Plan (GAP) document** for Blue Halo S Program Design that will be developed based on findings and analysis from gender assessment.

IV. Approach & Methodology

The assessment was conducted in several stages using qualitative study as a main approach. A range of methods have been utilized to collect primary as well as secondary data and information, which will be described in the next section below. Primary data collection was done through observations and consultations with relevant stakeholders from community groups, government, and non-governmental organizations using qualitative methods, in particular in-depth interviews and focus group discussions (FGDs). Secondary data collection was carried out through desk reviews and government-official data gathered from local government offices.

Data collection was conducted in 6 provinces, led by two consultants with expertise in Gender Equality and Social Inclusion (GESI), with assistance from local enumerators in each province. All interviews and FGDs, as well as observations and secondary data collection conducted in this study, were guided by specific instruments developed for each group of respondents or dataset (please see Annex 1 for all study

instruments). The selection of diverse team members was promoted²⁰ and monitored, especially on the representativeness of females and males in team composition when conducting interviews and FGD in the field. The selection of eligible respondents also considers the representativeness of women and men in all activities during data collection.

1. Desk Review

The resources for the desk review include documents available through online search, relevant institutions' websites, and contact persons from this project team members' network, local government, journal repositories, and other credible resources that have been identified during the assessment (see Annex 2). Data and information gathered through desk review provide relevant data²¹ and information as a context to enable the team to identify women and other vulnerable groups, especially those among coastal marine communities, who have and will be impacted the most by climate change, and how their vulnerabilities affect their resilience and capability to adapt, as well as opportunities for the project to be able supporting these community groups to promote their resilience and adaptive capacity. Particularly at the initial stage of the assessment, a desk review was conducted on several regulations on marine and fisheries national management in general, specifically related to management WPPNRI 572, as well as studies related to gender equality issues in this sector in Indonesia. The result has informed and been utilized to develop the assessment plan on determining community groups considered as vulnerable to be targeted respondents; these groups are small/ poor fishers, traditional fishers, small fish farmers, and salt farmers²² (men and women), women from poor households and women involved in the informal sector of the blue economy²³. This is also to ensure that prioritizing these groups will be aligned with the national priorities in protecting and empowering coastal marine communities that heavily rely on marine and fishery resources.

The desk review was also conducted on studies related to the blue economy in global and Indonesian contexts, along with grey literature such as programs related to marine and coastal livelihoods in the area of WPP572, especially about existing vulnerable and women's groups, their livelihood, and how climate change has impacted their roles at household and community level. To provide context for the analysis, secondary data and information related to the general situation of gender equality in each province covered in WPPNRI 572 was also gathered through desk review, along with information related to relevant social and cultural norms that influence the livelihood of surrounding communities, as well as existing programs that might be relevant and intersect with the project's objectives.

²⁰ Participation of women with relevant skills and expertise across team members was promoted to ensure gender-balanced perspective is in place and provide more opportunities for women in the area of expertise related to blue economy, marine and fisheries

²¹ Relevant data here refers to quantitative and qualitative information that can provide overview on men's and women's access to basic services and development outcomes

²² Law no 7/2016 stipulates the mandate to protect and empower small fishers, fish and salt farmers from natural disasters, climate change, and the risks arises from those factors. Furthermore, family members from these groups are also entitled to access government financing assistance, trainings, and scholarships. It is emphasized that the involvement and participation of women need to be addressed in protection and empowerment efforts.

²³ Blue economy defined as a "sustainable development framework for developing countries addressing equity in access to, development of and the sharing of benefits from marine resources; offering scope for re-investment in human development and the alleviation of crippling national debt burdens." (Blue Economy Concept Paper, UNEP 2016)

2. Data Collection in 6 provinces

The study team conducted primary and secondary data collection in pilot areas in 2 stages, covering 6 provinces: Aceh, West Sumatera, North Sumatera, Bengkulu, Lampung, and Banten.

2.1 Primary data collection through FGDs, interviews, and observations:

Considering the importance of involving vulnerable groups as part of the participatory gender assessment, focus group discussions (FGDs) and in-depth interviews were conducted with members of community groups, particularly those identified as vulnerable in coastal communities, within the context of blue economy, based on findings of desk review, as well as references from local stakeholders. Interviews were also conducted with relevant government officials and local Non-Governmental Organizations (NGOs). The combination of in-depth interviews and the FGD method was chosen to allow the study to enrich the data with more personalized individual experiences, revealing issues of gender inequality and social exclusion, as well as information related to group dynamics and collective agreement among coastal community members from the FGDs.

Below are the targeted respondent groups²⁴ for the interviews and FGDs in all study sites:

- 1) Small/poor fishers (Male and Female)
- 2) Women working in the informal sector of the blue economy²⁵
- 3) Female head household in a coastal community
- 4) Fishermen (middle or big scale) employ small fishers
- 5) Small/poor Fish or Salt Farmers (Male and Female)
- 6) NGO working with coastal communities
- 7) Government officials from the Provincial & District Office of Marine Affair & Fisheries
- 8) Government officials from the Provincial & District Office of Women Empowerment and Child Protection.

Respondents were selected purposively with selection criteria determined before the assessment and consulted with the research team and local stakeholders²⁶ in each province. Criteria for each respondent group was developed (please see the details for each respondent group in the instruments attached in Annex 1), in summary, the selection of respondents in this study was made as follows:

1. Identification of sampling area within each province

Coastal areas inhabited by small fishers, poor coastal communities, and there are existing activities related to fisheries and other blue economy, especially where women are involved, were selected based on the

²⁴ The criteria for targeted respondents was initially used as a basis to identify eligible respondents, but adjustments were made based on situation on the field and local context. The follow up mapping found not all targeted groups (in particular salt farmers) exist in most of the selected sites. Community members interviewed in most of the study areas told the study team that there is low interest from community in the area on salt farming due to cost-benefit consideration; the need to hire land becomes one of the major challenges for poor farmers to undertake this work.

²⁵ Criteria for this targeted group set to allow room for other sectors in blue economy undertake by women's group in coastal community. However, the study team found none of the community members working in other marine related or blue economy sector than fishery.

²⁶ Through network of provincial team, local NGOs, government officials were contacted for consultation. For example, fishery instructors in few study sites (West Sumatera, North Sumatera) were managed to be involved in identifying targeted coastal community groups and consulted for the selection of respondents based on the required criteria and local context.

information from the provincial team, consulted with the team of Konservasi Indonesia (KI). Resources and time constraints only allow the study team to collect data from 1 village in each district. When it is possible, 2 villages nearby visited to ensure all targeted groups were represented. In a few areas where targeted respondent groups do not exist, it was decided to recruit targeted respondents from other villages as long as it was still reachable within 30 minutes by car or motorcycle.

2. Selection of targeted respondents and arrangement of interviews & FGDs

Identification of eligible respondents for certain community groups or members was also done through the snowball method; it is a non-probability sampling method, using a small pool of initial informants to recommend other eligible participants who have the potential to contribute to a specific study²⁷. With this method, research participants in this study assist the research team in identifying or recruiting other potential respondents. In general, the eligible respondents in selected locations were recruited based on their engagement in the fishery and other blue economy fields (roles in the value chain, occupation, length of their engagement/experience in the field). The targeted vulnerable groups were identified based on the criteria defined in the regulations. Small-scale fishers for example, defined in this study as fishers use boats with a maximum size of 10 Gross Ton (GT), as stated in Law no 7/ 2016 on Protection and Empowerment of Fishers, Fish Farmers, and Salt Farmers.

Government officials from relevant offices at Provincial and District levels were also interviewed, as well as non-governmental organizations (NGOs) working in the area. All respondents involved in all FGDs, and interviews were informed about the study and asked to provide their consent (informed consent), either written or verbally. The total number of respondents who participated in FGDs and interviews are 135 people, with 64 male and 71 female respondents (please see the breakdown for each province in Annex 3- List of Respondents in Each Province).

In the selection of respondents and the arrangement of interviews, FGDs pay attention to gender balance composition, location, and time availability of respondents. Especially for the interview with community members, interviews with female respondents were conducted in separate locations with males to ensure they feel free to express their voices, and it was set not too far from where they live. Moreover, the time for the interview was set based on the respondents' availability so that it did not interfere with their work, and all respondents were informed about the purpose of the interview and compensated for the time spent on the interview.

3. Observation was conducted in selected working sites where women's groups usually undertake the work related to fisheries

Once the study sites were selected at the village level, the study team then identified the specific location where women's groups usually undertake the work related to the fishery to provide more information regarding workplace arrangements and available facilities. The working sites were selected based on their proximity to the study site in the village, and the study team ensured it was still operating. Before the observation was conducted, the study team asked for permission from the owner of the working site and informed all the workers who were present during the observation about the purpose of the observation and the study. A guideline was developed for this observation activity (please see Annex 1 in study instruments for the observation guideline), looking at access, participation, safety measures, and to what

²⁷ Morgan, D. (2008) Snowball Sampling. In: Given, L., Ed., The SAGE Encyclopedia of Qualitative Research Methods, SAGE Publications Inc., Thousand Oaks, 816-817

extent the working station is friendly for women and children²⁸. These activities were conducted in selected areas in several provinces during data collection in the field from 05th of June to 07th of July 2023. However, in some study sites, the observation could not be conducted due to conflicting schedules with the interviews and FGDs.

2.2 Secondary data collection

The collection of secondary data (both quantitative and qualitative) related to the gender equality situation was conducted in each province, assisted by local enumerators. The process was closely coordinated with a Gender consultant in Jakarta, using the developed list of data and information as a guideline for the provincial teams to collect required information. Secondary data collected from a range of resources are mostly gathered from government offices in study sites and websites owned by relevant institutions like Statistics Indonesia (BPS), and local government at the provincial and district levels.

3. Data Management & Analysis

3.1 Data Management

Primary data collected through FGDs, Interviews, and observation, as well as secondary data, are stored in a dedicated Google Drive made accessible for assessment team members in Jakarta and each province to ensure all the data is kept safely, coordinated by gender consultant in Jakarta (only study team members have access to this storage through the dedicated link).

For all FGDs and interviews conducted, there are field reports developed summarizing findings and points of observation structured by the field report template developed for the data collection in 6 provinces. The digital record of all FGDs & Interviews are transcribed digitally for the analysis. All related documents (recording, transcript, report) are named with standard format containing information of activity (FGD/Interview), Group of respondents (Fishers or Farmers), Sex (male/female), time of data collection (date, month, year), and initial for individual respondent interviewed, and transferred to the cloud storage.

3.2 Analysis

The final result of the analysis is based on primary and secondary data collected throughout all stages of this assessment and will be utilized for the development of the Gender Equality and Social Inclusion (GESI) action plan. The development of the GESI action plan for Blue Halo S aims to comply with the requirements and template developed by GCF.

The main approach for the analysis utilizes qualitative content analysis method, which involves a systematic classification process of coding and identifying themes or patterns that emerge from the data²⁹. The method puts emphasis on languages' characteristics as a way to communicate, with attention

²⁸ Even though there were no children found to be involved in the work when the observation being conducted, it is well known that often times women with younger children need to bring their kids when they undertake the work because no one can take care their children when they work or not at home.

²⁹ Hsieh, H., Sarah E.S (2005). Three Approaches to Qualitative Content Analysis. *Qualitative Health Research*, 15 (9), 1277-1288. <https://journals.sagepub.com/doi/pdf/10.1177/1049732305276687>

to the content or contextual meaning of the text. As explained by Downe Wamboldt (1992)³⁰, content analysis has the purpose of providing knowledge and understanding of certain phenomena being studied. This study utilizes a content analysis method, which is categorized under a conventional type, where the use of categories and names for categories are based on insights that emerge from the data. The analysis looks at the gendered division of labor in fisheries (in pre-, post, and harvesting stages)³¹ gender roles within coastal communities, to understand how this eventually impacted access, participation, control, and benefit gained by women and vulnerable groups. The analysis also considers the intersectionality of women and other vulnerable groups in each province.

For secondary data, the study collected quantitative/numerical data from secondary sources (as mentioned above), most of which underwent analysis using descriptive statistical methods. This information serves to enhance the understanding of the provincial socio-economic context, thereby reinforcing the qualitative analysis.

3.3 Research Limitations

Using a qualitative approach, this study bases its analysis on qualitative data and information provided through FGDs and In-depth interviews with key informants. While the existence of vulnerable groups had been identified before the data collection conducted, there is a possibility that not all vulnerable groups were identified and reached by the study due to time and resource constraints. Therefore, it is important to take into account research limitation described below in interpreting analysis provided in this report:

- All study sites across six provinces were selected based on the availability of activities related to fisheries or blue economy undertaken by women in the area. This might lead to the exclusion of area and community groups that are actually vulnerable but do not have existing women's groups or activities. This also means that not all existing community groups in the area are represented in this study based on their socio-economic characteristics.
- One of the vulnerable groups that had not been identified in this study is a person with a disability. Information regarding the existence of coastal community members with a disability is very limited, especially those working as fishers, fish farmers, and salt farmers. Due to resource constraints, the study team was not able to reach out to this group. However, it is recommended for the project to further assess and include them in the design, implementation, monitoring, and evaluation of the program.
- This study assesses potential risks related to gender-based violence that might arise in the project and related factors to the issue. However, this study can only provide a brief narrative of the existing situation due to the lack of data required to strengthen the analysis. Most of the information is qualitative information and obtained from relevant government officials as well as community members. This also highlights the importance of having specific measurements on this issue if the project decides to address issues related to gender-based violence.
- As some of the provinces in WPPNRI 572 have indigenous communities residing in certain areas, it is important to understand their vulnerabilities and challenges faced due to climate change, and this needs to be specifically assessed. However, due to resource constraint, this study was unable to include them to participate in the study.

³⁰ Downe Wamboldt (as cited in Hsieh, H., Sarah E.S, 2005)

³¹ Better understanding of gendered division of labour will be required to understand the processes of economic activities in fishery sector taken by women and men, that will improve accounting of women's participation, so that women's interests as one of the main actors in the Fishery sector can be taken fully into account (Fitriana, R. & Stacey, N. 2012)

V. Findings & Analysis

V.1 Context of Gender Equality and Social Inclusion in Indonesia

In this section, data and analysis on the general state of GESI in Indonesia and six Provinces within WPPNRI 572 will be discussed to enhance the understanding of the socio-economic context, thereby reinforcing the qualitative analysis. The analysis will be based on the available data that is usually utilized to picture gender equality at the national, provincial, or district levels.

Overall, Indonesia's score for the inclusivity index³² is relatively low compared to countries around the world, even ASEAN countries; Indonesia is currently ranked 125th, below the Philippines and Vietnam. Indonesia's performance on this measurement is crucial to ensure the implementation of policies and actions in the country are inclusive and leave no one behind. In 2021, Indonesia's achievement towards SDG goal number five-gender equality and women's empowerment were ranked as 'moderately improving. Looking at the 2021 Sustainable Development Report dashboard, Indonesia uses four indicators upon which their assessment was made. Those indicators are the demand for family planning, education, the labor force participation rate, and women's participation in the national parliament (see <https://dashboards.sdgindex.org/profiles/indonesia/indicators>).

In 2020, total population in Indonesia reached 270.204 million people and has increased to 275.774 million (2022)³³, with women's population comprising 49.4 percent of the population. Delving deeper into the proportion of women in vulnerable groups, statistical data reveals results that are more or less similar. There are over 10 per cent of Indonesian population are elderly, with more than half (51,7%) are women. It is estimated there are 23.3 million (9%) people with disability in Indonesia and 55.5 percent are women³⁴.

Indigenous Peoples' Alliance of the Archipelago/*Aliansi Masyarakat Adat Nusantara* (AMAN) estimates there are around 70 million indigenous people in Indonesia (2018), of which almost half by its population are women (34.3 million or 49%). The Indonesian Indigenous people population is divided into 2.371 indigenous communities spread across 31 provinces. Sumatera has 392 Indigenous communities, which has put the province as the third largest concentration of Indigenous Communities, following Kalimantan in the first and Sulawesi in the second rank (772 and 664 Indigenous Communities, respectively)³⁵. These statistical figures indicate that women have a significant proportion of the Indonesian population, meaning that success in enhancing their participation and contribution to development will have a substantial impact on the country's well-being.

Indigenous women and men in Indonesia face different forms of discrimination. Women often lack access to land through inheritance and are only guaranteed the use of land when staying within their

³² Inclusivity Index score is based on holistic measurement of inclusive development focuses on equality (race/ethnicity, religion, gender, and disability) in the realm political representation, out-group violence, income inequality, level of detention, as well as immigration and refugee policy (National Research and Innovation Agency, 2022)

³³ Statistics Indonesia. (2023). Statistical Yearbook of Indonesia 2023: Interim population projection 2020-2023 (mid year/June) 3

³⁴ Ibid

³⁵ Andriarsi, MK., (2010, October 10). Sebaran Masyarakat Adat. <https://katadata.co.id/padjar/infografik/5f8030631f92a/sebaran-masyarakat-adat>.

community³⁶. Furthermore, some of the knowledge traditionally held by women can face systemic barriers to being recognized. For example, in many indigenous communities in Indonesia, women have deep knowledge of native seeds that might be hindered by national legal regimes of intellectual property rights. Furthermore, a study carried out in 44 villages in provinces different from the ones prioritized by the project suggests that ninety percent of the indigenous women surveyed reported never having exercised their right to Free, Prior and Informed Consent (FPIC), even though in some of the villages, agroindustry projects had carried out consultations for seeking FPIC³⁷. In the West Sumatra province, women from the Metawai culture are rarely involved in decision-making regarding indigenous lands and their use³⁸.

One of the factors often found in the field related to the various limitations experienced by vulnerable communities to adapt to climate change is poverty³⁹. Evidence across the globe has been showing that vulnerabilities and inequalities are closely associated with poverty due to the inability to access basic services and resources. In relation to climate change, poor households are often affected the most due to their inability to afford the required resources to adapt (e.g., water storage, adaptation technologies, capital for alternate livelihood), while they often cultivate land that is vulnerable to extreme weather events. Based on poverty data published by Statistics Indonesia/ *Badan Pusat Statistik*, in 2022, there are 9.57% or 26.36 million people live in poverty in Indonesia, where the proportion of women living under the poverty line is higher than men (9.68% of women compared to 9.40 of male). Moreover, there is relatively high proportion (15.8%) of female-headed households reported as poor households.

Households with a family member who has a disability are also more likely to live in poverty as a consequence of the inability of the primary carer to access paid work, hence reducing the household income. In addition, there is a higher disability-related living expenses compared to families without disability family members. A study conducted by Wibowo et al. (2021)⁴⁰ reveals that the poorest households who have members with disability have to bear additional costs of up to 20% to meet their basic needs. Moreover, people with disabilities are still facing barriers to accessing various basic services; access in 9 years of compulsory education and employment opportunities for people with disabilities in Indonesia are 8.6 and 5.4 times lower, respectively, than those without disabilities⁴¹.

Across six provinces in WPPNRI 572, there are almost 4.7 million (1,7% of Indonesia's total population or 9,5% of total population across six provinces) people living below the poverty line. Aceh, Bengkulu, and Lampung have the highest proportion, with more than 12% of their total population reported as poor⁴² (please see Annex 4- Statistical Information for GESI Indicators). Disaggregated by gender, the average of households headed by women in six provinces in WPPNRI 572 (15.5%) is higher than the national average (12.7%). Provinces with the highest proportion of female-headed households are Aceh (21.3%), North Sumatera 17.3%), and West Sumatera (17.3%).

³⁶ Noor, RS et al (2024). "GENDER EQUALITY IN INDIGENOUS PEOPLES IN INDONESIA (CHALLENGES AND EFFORTS TOWARDS THE 2030 SUSTAINABLE DEVELOPMENT GOALS)". Available at: <https://ojs.journalsdg.org/ilss/article/download/2173/1442/11893>

³⁷ Yusvitasari, D. and Yunitasari, D. (2024). "Reflections on The Neglect of Indigenous Women's Voices in Development Projects and The Need for Their Legal Protection: The Case of Indigenous Women in Indonesia". Available at: <https://bhri.blog/2024/02/22/reflections-on-the-neglect-of-indigenous-womens-voices-in-development-projects-and-the-need-for-their-legal-protection-the-case-of-indigenous-women-in-indonesia/>

³⁸ Ibid.

³⁹ Most of the respondents from community groups in this study are reported to have low educational, social, and economic backgrounds. Many reported themselves to be a recipient of government assistance for poor household.

⁴⁰ Wibowo, G., Marlina, I., Arifin, B., Waristi, F., Bastias, D., Aulia, A., & Silalahi, M. (2021). Concession and Incentives to promote economic participation of people with disabilities in Indonesia. Fiscal Policy Agency Ministry of Finance Republic of Indonesia. <https://fiskal.kemenkeu.go.id/kajian/2021/12/31/2441-konsesi-dan-insentif-untuk-mendorong-partisipasi-ekonomi-penyandang-disabilitas-di-indonesia>

⁴¹ National Research and Innovation Agency/ BRIN. (2022). Policy Manuscript for Increasing Inclusive Social Protection for Persons with Disabilities: Policy Recommendations of the Indonesian MOST-UNESCO National Committee

⁴² National and Provincial Central Bureau of Statistics, Ministry of Marine and Fisheries Affair. (2020)

V.1.1 Human Development Index (HDI) and Gender Development Index (GDI)

Disaggregated by sex, in 2021, the national index showed a gap between males and females (69.59 for women and 76.25 for men). A higher HDI score in the country means better access to basic services for its population, which is associated with longer life expectancy, better education attainment, and a higher standard of living. The lower index of women compared to men means women are facing greater barriers to accessing basic services in the country.

Based on a Report published by Statistic Indonesia/ *Badan Pusat Statistik* on Indonesia's Human Development Index (HDI)⁴³ in 2022, there were only two out of six provinces in WPPNRI 572 had achieved above or equal to the national HDI (72.29)⁴⁴, namely Banten (72.72) and West Sumatera (72.65), while the other four provinces are below the national HDI (as the other 24 provinces in Indonesia).

Table 5.1 Gender Development Index (GDI) of six provinces in WPPNRI 572

Area/Province	2020	2021	2022
Indonesia (national)	91.06	91.27	91.63
Aceh (Banda Aceh)	92.07 (95.26)	92.93 (95.54)	92.24 (95.91)
Banten (Pandeglang)	91.74 (86.71)	91.83 (86.83)	92.18 (86.93)
Bengkulu (Kota Bengkulu)	92.07 (95.67)	92.23 (95.77)	92.24 (96.07)
Lampung (Bandar Lampung)	90.33 (93.86)	90.37 (93.93)	90.58 (94.02)
Sumatera Barat (Mentawai)	94.17 (89.59)	94.34 (89.81)	94.72 (89.91)
Sumatera Utara (Nias Utara)	90.67 (79.37)	90.73 (79.63)	91.06 (80.12)

(Sources: <https://www.bps.go.id/indicator/40/463/1/indeks-pembangunan-gender-ipg-.html>)

However, overall, Gender Development Indexes (GDI)⁴⁵ in almost all provinces within WPPNRI 572 are above the national Index, except for North Sumatera Province. From 2020 to 2021, the overall GDI in all six provinces increased within the range of 0.04 – 0.17. Among six provinces in WPPNRI 572, West Sumatera was reported to have the highest accelerated growth (an increase of 0.17 from a score of 94.17 in 2020 to 94.34 in 2021). Its GDI (94.34) is among the top four provinces in Indonesia that achieved the highest score and above the national GDI (91.27). Based on both indexes of HDI and GDI, there are three out of six provinces in WPPNRI 572, namely North Sumatera, Bengkulu, and Lampung reported achieving lower scores than the national indexes⁴⁶. Aceh is the only province within WPPNRI 572 that has a lower HDI than the national index, with its GDI showing better scores than the national. This shows that gender equality in the province is relatively high, but the overall quality of development is still low⁴⁷.

⁴³ HDI value shows how far a region has achieved the specified targets, which are high life expectancy, basic education for all level of society (no exception), expenditure and consumption level have reached decent living standard (Statistics Indonesia)

⁴⁴ There are only 10 out of 34 provinces in Indonesia have achieved above the National HDI

⁴⁵ Indicator used to describe comparison (ratio) between HDI achieved for women and men, assessing gender disparities in human development within a country. The lower the score means the disparity is higher between men and women in terms of human development

⁴⁶ HDI value shows how far a region has achieved the specified targets, which are high life expectancy, basic education for all level of society (no exception), expenditure and consumption level have reached decent living standard (Statistics Indonesia)

⁴⁷ Statistics Indonesia. (2022). Indeks Pembangunan Manusia 2022

V.1.2 Health

Referring to two globally common indicators used to assess gender inequality in health, namely Maternal Mortality Rate (MMR) and Adolescent Birth Rate (ABR), Indonesia have made a progress but has not yet achieved the desired outcomes and there are still regional disparities, particularly in relation to Adolescent Birth Rate (ABR).

In terms of MMR, Indonesia's rate is still high, ranking 136 out of 185 countries and 8 out of 10 ASEAN countries. Over the past 10 years, Maternal Mortality Rate in Indonesia has declined by 45% (From 346 in 2010 to 305 in 2015 and to 189 in 2020). Most of the provinces with the highest MMR in Indonesia are in the east part of Indonesia. Within WPPNRI 572, Aceh is reported to have the highest MMR in Sumatera, with 201 maternal death incidents per 100,000 live births in 2020 (Statistics Indonesia, 2023)⁴⁸. Looking at the other five provinces within WPPNRI 572, the numbers are quite high in 2020, with several provinces (Bengkulu, Banten) managing to decline the MMR under 100 (please see Annex 4, table 4.B.1).

Analysis done by Statistics Indonesia based on Long Form Survey SP2020 (Statistics Indonesia, 2023) linked with the result of Socio-economic Survey 2020 reveals that maternal deaths in Indonesia are most likely to occur in households led by young age head of household, with low education, inadequate housing, and poor health facilities and basic infrastructures. Maternal deaths generally occur in women who live in poverty, in remote areas, or in regions with poor access to health facilities and basic infrastructures. Therefore, it is more likely to occur in women in rural areas. Moreover, the availability of maternal services at village/ *kelurahan* level can lead to lower maternal deaths⁴⁹. The available data on the distribution of health facilities in villages/kelurahan across six provinces of WPPNRI 572, including maternal hospitals, does not provide a clear indication of its impact on the Maternal Mortality Ratio (MMR) in the region. For instance, despite Aceh having a high maternal mortality rate, there are only a few maternity hospitals and a relatively low overall number of hospitals. On the other hand, Bengkulu, which has a low MMR, particularly in 2021-2022, also has a relatively low number of general and maternity hospitals, as well as polyclinics (please refer to Annex 4, table 4.B.2).

Regarding the ABR indicator, based on the average score obtained by Indonesia (47.4) from 2015 to 2020, the average ABR in Indonesia is higher than the global average (43.3). (Ministry of Women Empowerment and Child Protection, 2021). According to the 2022 Human Development Report by UNDP, the Adolescent Birth Rate (ABR) in Indonesia declined to 33.90 in 2021, ranking it as the fifth highest among ASEAN countries. Studies from around the world have found that female adolescents aged 15-19 living in rural and poor households, as well as areas with high poverty rates, are more likely to give birth or become pregnant.

Other indicators that might be able to inform on the gender gap in health is the unmet needs of health services⁵⁰. In general, at the national level, the unmet needs of health services are more likely to be higher for women than men from 2019 to 2023, with slight fluctuation; in 2019 and 2021, the number was lower for women (please see Annex 4, table 4.B.3). The smallest gap among men's and women's group, where

⁴⁸ Statistics Indonesia. (2023). Thematic Analysis of Indonesian Population: Adolescent Fertility, Maternal Mortality, Infant Mortality, and People with Disabilities

⁴⁹ Ibid

⁵⁰ Unmet needs of health services defined as number of population with health complaints which have affected their daily activities but not seek for treatment, compared with total of population in the area (Statistics Indonesia).

women's unmet needs are higher is reported in 2020 (Men 5.41, Women 5.46), while the highest is in 2023 (Men 5.08, Women 5.36).

Looking at the total percentage for men and women in six provinces in WPPNRI 572, in all provinces, the total percentage for unmet needs of health services have increased in 2022 and 2023 (sex-disaggregated data is not available). This might be caused by the COVID-19 pandemic; people were advised not to come to the health services if it is not severe or for emergency. Among six provinces in WPPNRI 572, however, unmet needs of health services in Aceh and Lampung are above the national percentage in 2022, while in 2023, there are Aceh, Bengkulu, Lampung, and Banten. In 2022, Lampung has the highest total percentage of unmet needs by 7.33 (please see Annex 4, table 4.B.6).

Other variable to be seen due to its representation of social, economic, education, health, and the overall quality of life of the population is Life Expectancy⁵¹. Indonesia's life expectancy is relatively low compared to most of the countries in ASEAN and Southeast Asia. Like in all countries around the world, Women's (73.83) life expectancy in Indonesia has always been higher than Men. In 2021 and 2022, for example, national life expectancy for women is 73.55 and 73.83, while for Men is 69.67 and 69.93 (Statistics Indonesia, 2022)⁵². Within WPPNRI 572, all six provinces' Life Expectancy is below the national Life Expectancy, both for men's and women's groups, from 2019 to 2022. Over four years (from 2019 to 2022), Aceh has always been the province within WPPNRI 572 with the lowest life expectancy both for men and women, followed by Bengkulu in the second lowest (see Annex 4, table 4.B.5).

V.1.3 Education

In Indonesia, there has been progress in narrowing the gender gap in education. However, as in other sectors, regional disparity persists as a challenge. Analysis of the numbers of Expected Years of Schooling (EYS) or *Harapan Lama Sekolah (HLS)*⁵³ at the national level shows that from 2010 to 2021, EYS for females has always been higher than for males, and it has always been increasing every year (Ministry of Women Empowerment and Child Protection, 2022)⁵⁴. In 2021, for example, EYS for females was 13.22 and 12.95 for males (Statistics Indonesia); this means that on average, children aged 7 years old who attend formal school in 2021 will have the opportunity to be in school for 12-13 years or in minimum complete senior high level. Within WPPNRI 572, Aceh (Banda Aceh City- M 17.84, F 17.72)) and West Sumatera (Padang City- M 16.33, F 16.87), and Bengkulu (Bengkulu City- M 16.01 F 16.44)) are reported to have EYS above 14 years, both for male and female.

Another variable often used to see the quality of education in certain areas is Mean Years of Schooling (MYS) or *Rata-Rata lama sekolah (RLS)*⁵⁵. The national MYS from 2010 to 2021 has always been increasing both for males (from 7.19 in 2010 to 8.92 in 2021) and females (from 6.89 in 2010 to 8.17 in 2021), with MYS for males always higher than females over 11 years (Ministry of Women Empowerment and Child Protection, 2022)⁵⁶. According to data from Statistics Indonesia in 2021, only two provinces in Indonesia

⁵¹ Life Expectancy at Birth Life is defined as the estimated average number of years a person can live from the time of birth (Statistics Indonesia).

⁵² Statistics Indonesia. (2022). Life Expectancy Rate by City/Region and Gender. <https://www.bps.go.id/en/statistics-table/2/NDU1IzI=/life-expectancy-rate-by-regency-city-and-gender.html>

⁵³ Expected years of schooling (EYS) is defined as the length of time (in years) that can be expected experienced by a child at certain age in the future. This indicator is measured from population aged above 7 years old

⁵⁴ Ministry of Women Empowerment and Child Protection Republic of Indonesia. (2022). *Pembangunan Manusia Berbasis Gender* 2022.

⁵⁵ Mean Years of Schooling (MYS) the length of time population attending school (in years), measured from population aged above 25 years old

⁵⁶ Ibid

have higher RLS (Ratio of Literacy Skills) for females than males. These provinces are Gorontalo (F 8.22 M 7.58) and Sulawesi Utara (F 9.64 M 9.59). Within WPPNRI 572, in 2022, the lowest MYS (Mean Years of Schooling) numbers for males are reported to occur in Lampung, Bengkulu, and West Sumatera, while for females, they occur in Lampung, Bengkulu, and Banten (please see Annex 4, table 4.C.6).

Looking at six provinces within WPPNRI 572, in general, from Nett Enrolment Rate (NER) in 2023, there are provinces with a lower rate than the national NER in primary, junior high, and senior high. At the primary level, six provinces reach a higher rate in NER than the national rate (97.89). North Sumatera lagged behind in 2021 with NER 97.69, but then progressed to achieve a higher rate in 2022 and 2023. At the Junior high or secondary school level, there are West Sumatera (80.22), Bengkulu (81.08), and Lampung (80.64) which have lower rates than the national (81.35). For percentage of the literate population aged above 15 years old, among six provinces in WPPNRI 572, the literate female population is relatively low in Banten, Lampung, and Bengkulu (ranging from 95.4% to 97.5%) from 2018 to 2023 (please see Annex 4 table 4.C.7). The pattern is similar for a percentage of the population (aged 10 or above) not/never attending school from 2018 to 2023 (see Annex 4 table 4.C.5); Banten, Lampung, and Bengkulu have a relatively high proportion of female who are not/never attending school (ranging from around 2.4% to 4.17%).

V.1.4 Economic Sector and Labour Participation

Data published by Ministry of Women Empowerment and Child Protection/ *Kementerian Pemberdayaan Perempuan dan Perlindungan Anak (KPPPA)* in a Report of Gender-based Human Development 2022, nationally, economic sector are still dominated by men with annual per capita expenditure in 2021 reached IDR 15,770 million, and 16,736 in 2023, compared to only IDR 9,050 million in 2021, and 9,579 million in 2023 by women, per capita expenditure annually. This data indicates economic inequality between men and women in the country.

The report also reveals that in terms of labour participation, women's labour participation rate is reported to be much lower (53%) than men's (82%). Similar to this, the average monthly salary for men is reported to be higher than for women. One of the factors affecting this is that there is a huge proportion of women in the country working in the informal sector, undertaking part-time jobs, and there is a greater proportion of women undertaking unpaid work. Data from Statistics Indonesia/ *Badan Pusat Statistik* 2023 shows that from 65.6 million men and women who are not economically active, 48.8 million or 74.3% are women. Of these 65.6 million, 41.2 million are taking care of households, where 37.6 million (91.2%) are women, and less than 10% (3.6 million or 8.7%) are men.

In the six provinces covered by WPPNRI 572, the data shows that men continue to dominate the economic sector, with their annual per capita expenditures ranging from 13.3 to 15.4 million Rupiah from 2019 to 2021. This range slightly increased to 14.02 to 16.03 million Rupiah in 2022 and 2023. Meanwhile, women's annual expenditures were reported to be around 7.8 to 9.8 million Rupiah from 2019 to 2021 and increased to approximately 8.4 to 10.2 million Rupiah in 2022 and 2023.

While the other five provinces in WPPNRI 572 have lower annual per capita expenditures for both males and females, Banten is the only province with higher annual per capita expenditure than the national average, and consistently being the province with the highest annual expenditure from 2019 to 2023, for both men and women. In 2023, it was reported that Banten reached 18,03 million and 10,7 million for men's and women's annual expenditures, respectively. It is important to note, however, when we see the

number closer across districts in Banten, the high average number on annual per capita expenditure is actually not distributed equally across districts/cities in Banten, it is affected by relatively high annual per capita expenditure only from several city/districts like Tangerang and Tangerang Selatan City, Cilegon, and Serang. This might reflect the wide development gap across districts/cities in the province. Furthermore, in a few districts with a significant proportion of coastal communities, namely Pandeglang and Lebak, there is still a wide gap in the participation of men and women in the economic sector, as is reflected in their annual per capita expenditures (in 2023, the annual per capita expenditure for men 14,6 million, and only 6,4 million for women in Pandeglang, and 13,7 million for men and only 4,4 million for women in Lebak).

Table 5.2 Adjusted per Capita Expenditure in Six Provinces of WPPNRI 572 Disaggregated by sex (thousand/person/year) 2019-2023

Province	2019		2020		2021		2022		2023	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
ACEH	13496	8212	13351	8103	13484	8162	14025	8495	14497	8751
NORTH SUMATERA	15471	8315	15058	8176	15265	8227	15762	8540	16033	8655
WEST SUMATERA	15311	9899	15031	9707	15167	9748	15634	10044	15954	10218
BENGKULU	14538	8207	14510	8159	14689	8233	15173	8499	15617	8718
LAMPUNG	14399	7863	14268	7720	14308	7778	14722	7999	15288	8283
BANTEN	17532	10593	17027	10309	17253	10371	17503	10497	18032	10785
INDONESIA	15866	9244	15463	9004	15770	9050	16215	9281	16736	9579

(Sources: <https://www.bps.go.id/en/statistics-table/2/NDYxIzI=/pengeluaran-per-kapita-yang-disesuaikan-menurut-jenis-kelamin.html>)

The labour participation rate in six provinces of WPPNRI 572 shows a similar pattern, where women's labour participation rate is much lower than men's. From 2021 to 2023, men's rates in most of the provinces are close to men's national rate (82.27, 83.87, 84.26, respectively). During this period, among other provinces, Aceh shows a relatively lower rate both for men (79.4, 81.06, 80.57) and women (48.36, 46.15, 49.05). It is interesting to see that during this period, in 4 of 6 provinces, women's rates (around 54.3 to 57.8) are higher than the national (53.34, 53.41, 54.52 respectively). The lowest is found in Banten Provinces, where women's labour participation rates are less than 48% from 2021 to 2023. Lampung is in the second lowest for women participation, compared to the national rate and the other 4 provinces, particularly in 2021 and 2023. In 2022, Lampung was slightly higher 53.54) than the national rate in women's participation in labour.

Table 5.3 Labour Participation Rate in Six Provinces of WPPNRI 572 Disaggregated by sex in 2021-2023

PROVINCE	Male			Female		
	2021	2022	2023	2021	2022	2023
ACEH	79.4	81.06	80.57	48.36	46.15	49.05
SUMATERA UTARA	81.9	83.89	84.4	56.5	55.37	57.81
SUMATERA BARAT	80.67	82.58	82.21	55.04	56.28	56.94
BENGKULU	83.54	84.72	84.99	55.45	54.36	56.22

PROVINCE	Male			Female		
	2021	2022	2023	2021	2022	2023
LAMPUNG	85.55	85.84	87.3	52.36	53.54	52.01
BANTEN	80.16	81.69	82.16	46.84	47.17	46.16
INDONESIA	82.27	83.87	84.26	53.34	53.41	54,52

(Source: <https://www.bps.go.id/id/statistics-table/2/MjJwMCMY/tingkat-partisipasi-angkatan-kerja-menurut-jenis-kelamin.html>)

Related to the participation of women and men in labour, it is also important to acknowledge the prevalence of sexual harassment in the workplace as a common issue in the country. In a study developed jointly between the ILO and the “Never Okay Project” in 2022, a survey was applied to 1,173 respondents across Indonesia to understand violence and harassment in the workplace. This study concluded that “women and persons with disabilities are more vulnerable to violence and harassment”⁵⁷. Furthermore, 50,48 percent of respondents reported having experienced sexual violence and harassment. In 2023, Indonesia, through its Ministry of Manpower, issued Decree No. 88 on Guidelines for the Prevention of and Response to Sexual Harassment in the Workplace⁵⁸. This decree provides guidelines to employers for the prevention, improved monitoring, and response to sexual harassment in the workplace, including a recommendation for employers to create a dedicated task force to address this issue. Similarly, in 2022, a National Law on Sexual Violence was adopted by Indonesia.

V.1.5 Social and Politics

Social and gender norms in Indonesia strongly affect many cultural practices and processes of decision-making related to policy and access to basic services. Gender norms in Indonesia are strongly influenced by patriarchal values that put men as the head of the household, while domestic responsibility and care duties are placed onto women’s main responsibilities. This has also been reflected in many administration of legal documents, e.g., men (husbands) are by default registered as heads of the household, while women are often registered as housewives on their national ID card and family cards, which become the main legal document to access basic services. These factors, in turn, can limit women’s access to paid work and participation in the public sphere. In addition, there are strong cultural norms related to women’s bodies that restrict them from accessing certain health services.

Among six provinces within WPPNRI 572, Sumatera Barat, or to be more specific, the Minangkabau region, is the only province (and one among few provinces in Indonesia) well known to hold kinship customs based on mother line) or known as matrilineal. In this kinship system, women have more power, which is reflected especially in the arrangement of land ownership, decision-making, and Minangkabau traditional marriage institutions. When it comes to domestic work, women are still the ones in charge. Historically, women in Minangkabau were in charge of the domestic sphere and agricultural land in the era of agricultural civilization because men went hunting and wandering. Moreover, the matrilineal value is held

⁵⁷ ILO (2022) “It can Happen to Anyone”. Available at: <https://www.ilo.org/resource/news/no-workers-immune-violence-and-harassment-actions-needed-company-level>

⁵⁸ IOE (2023) “Indonesia: new Guidelines on Workplace Sexual Harassment” Source available at: <https://industrialrelationsnews.ioe-emp.org/fr/news/article/indonesia-new-guidelines-on-workplace-sexual-harassment>

not by all regions in West Sumatera. Mentawai Island, the study site in West Sumatera, holds patrilineal kinship as the other regions in Indonesia.

In politics and government, the Government of Indonesia (GoI) has adopted a gender quota target of 30 percent women to increase women's participation in parliament since 2004. However, the implementation still faces many challenges, as women's representation in all levels of government is quite low. Currently, at the national level, women comprise only 20 percent in parliament and only 30.9 percent at the provincial representative level. Similarly, at the executive level, there are only 6 women out of 34 ministers (18 percent), only one female governor (3 percent), and 13 female district heads/mayors (2.7 percent) and 5 percent village heads. Despite the little progress in promoting women's representation in parliament, the implementation of gender quota has successfully increased female representation to above 10 percent since its initiation in 2004. It is evident that to achieve higher women representation, the implementation of the quota alone will never be adequate. Improving the capacity of women in the political field, as well as establishing an enabling environment to support women taking roles in politics, are required.

Table 5.4 Representation of Women at National Parliament in Indonesia

Period	Women	Men
1950-1955	9 (3.8%)	236 (96.2%)
1955-1960	17 (6.3%)	272 (93.7%)
1956-1959 (Konstituante)	25 (5.1%)	488 (94.9%)
1971-1977	36 (7.8%)	460 (92.2%)
1977-1982	29 (6.3%)	460 (93.7%)
1982-1987	39 (8.5%)	460 (91.5%)
1987-1992	65 (13%)	435 (87%)
1992-1997	62 (12.5%)	438 (87.5%)
1997-1999	54 (10.8%)	446 (89.2%)
1999-2004	46 (9%)	454 (91%)
2004-2009	65 (11.6%)	435 (87%)
2009-2014	101 (18%)	459 (82%)
2014-2019	97 (17.3%)	463 (82.7%)
2019-2024	118 (20.5%)	457 (79.5%)

Source: Umagapi, J.L., 2020

The situation in six provinces of WPPNI 572 is quite similar, proportion of regional representative council is still male dominated as can be seen in the table below. From the general election in 2009, 2014, and 2019, Bengkulu, Lampung, and Banten shows slight progress; there is an increase in the number of female representatives.

Table 5.5 Number of Representatives of The Regional Representative Council (*Dewan Perwakilan Daerah/DPD*) Disaggregated by Sex
from the 2009, 2014, 2019 General Election

Province	2009		2014		2019	
	Male	Female	Male	Female	Male	Female
INDONESIA	97	35	98	34	94	42
Aceh	4	0	4	0	4	0
North Sumatera	3	1	3	1	3	1

Province	2009		2014		2019	
	Male	Female	Male	Female	Male	Female
West Sumatera	3	1	3	1	3	1
Bengkulu	3	1	2	2	2	2
Lampung	4	0	4	0	3	1
Banten	4	0	3	1	3	1
Total in 6 Provinces (% compared to national proportion)	21 (21.6%)	3 (8.6%)	19 (19.4%)	5 (14.7%)	18 (19.1%)	6 (14.3%)

Source: Statistik Indonesia 2011, 2015, 2019, 2023, Statistics Indonesia

Despite women's low participation in decision-making roles, Indonesia has made progress in establishing enabling conditions for gender equality through policy, regulations, and programs. The following table summarizes all policies and regulations supporting gender equality at a national level.

Table 5.5a Policies, Regulations and Programs focused on Advancing Gender Equality in Indonesia

Name of Regulations	Description
Law on 8/1984 on ratification on CEDAW	The ratification of CEDAW laid the foundation for gender mainstreaming, with many related agendas subsequently aligned as priorities in line with CEDAW's principles.
Law No. 39/1999 on Human Rights	The law stipulates protection from gender-based discrimination, including the rights to work, education, and healthcare; protection against gen of women; safeguarding of reproductive rights; and the right to participate in politics. The law explicitly states that women's rights are human rights.
Law No. 35/2014 on the Amendment to Law No. 23 of 2002 on Child Protection	The law stipulate the governmnet obligation to protecting children's rights and expands legal protections for children from violence, exploitation, neglect, and discrimination.
Law No. 8/ 2016 on Disability	Law No. 8 of 2016 on Persons with Disabilities guarantees the rights and protection of persons with disabilities in Indonesia, based on principles of equality and social inclusion. It ensures access to education, health, employment, political participation, legal protection, and public services. The law mandates both national and local governments to provide reasonable accommodation and accessible infrastructure. It also establishes the National Commission on Disabilities to monitor and advocate for disability rights. Sanctions are applied to those who discriminate, making this law a key foundation for an inclusive and just society.
Law No. 23/2004 on the Elimination of Domestic Violence	Law No. 23 of 2004 on the Elimination of Domestic Violence criminalizes domestic violence and mandates state responsibility for prevention, protection, recovery, and prosecution.
Law No. 12/2022 on Sexual Violence Crimes (UU TPKS)	Provide comprehensive avenues in addressing sexual violence, including prevention, protection, recovery, and prosecution.

Name of Regulations	Description
Law no. 13 /2003 on Manpower	Contains gender-sensitive labor rights, including maternity leave, equal pay, and non-discrimination.
Law No. 21/2007 on trafficking	includes several provisions that implicitly and explicitly recognize the gendered nature of trafficking, although the word “gender” is not always used directly.
Law No. 20/2003 on National Education System	Promotes gender equality in access to education and includes principles of non-discrimination.
Law No. 23/2014 on Regional Government	Mandates local governments to mainstream gender in planning and budgeting (gender-responsive planning).
Presidential Instruction No. 9/2000 on Gender Mainstreaming	Mandates all ministries and local governments to mainstream gender in development planning, budgeting, implementation, and evaluation
Ministerial Regulation of Home Affairs No. 15/2008 on Guidelines on Gender Mainstreaming Implementation at the regional level.	Provide guidance for local governments in administering governance, development, and public services with a gender perspective.
MoWECP Regulation No. 4/ 2018 on Guidelines of Establishment UPTD PPA (Unit Pelaksana Teknis Daerah Perlindungan Perempuan dan Anak)	The 2018 regulation aims to formalize and institutionalize services for the protection of women and children through the establishment of UPTD PPA (Regional Technical Implementation Unit for Women and Children Protection). Unlike P2TP2A, which often operated as a non-structural or semi-formal service center, UPTD PPA is embedded within the local government structure as a technical unit under the relevant regional office (Dinas). It is equipped with a clear legal mandate, standard operating procedures, dedicated staffing, and funding sourced from the regional budget (APBD). The regulation positions UPTD PPA as a standardized, government-managed mechanism that is intended to replace or evolve from P2TP2A, ensuring more sustainable and accountable service delivery for women and children at the subnational level.
Government Programs	
Program Keluarga Harapan (PKH)	It is a conditional cash transfer program aimed at improving access to health, education, and social services for poor families, breaking the intergenerational cycle of poverty through human capital development, and supporting vulnerable groups, particularly women as primary caregivers.

Name of Regulations	Description
The Musrenbang for Women and Children (Development Planning forum for Women and Children)	The Musrenbang for Women and Children is a component of the regional development planning forum (Musrenbang) that focuses on integrating the interests and needs of women and children into local development plans. It aims to ensure their active participation in the planning process and to promote the inclusion of their rights in the resulting policies. Its implementation is not mandatory and largely depends on the political will of local governments. Some provinces and districts have already adopted it. Among the BEAM target areas, Aceh and Lampung are examples of provinces that have incorporated it into this year's regional development cycle.

In addition to the above, Indonesia also has a series of institutions that support the implementation of some of the policies and regulations to advance gender equality, as summarized in Table 5.5b.

Table 5.5b Institutions with a role in addressing gender-related issues in Indonesia and some of the challenges they face

Name of Institutions	Level	Description	Challenges
Ministry of Women Empowerment and Child Protection (MoWECP)	National	a government ministry responsible for the rights and welfare of women and children. The ministry's key functions include formulating and implementing policies, coordinating efforts, and providing services related to gender equality, child protection, and the overall empowerment of women and children.	The Ministry of Women's Empowerment and Child Protection (MoWECP) is not a technical ministry; rather, it serves a coordinating and policy development role within the Indonesian government. Its core mandate is to formulate national policies on women's empowerment and child protection, and to promote gender mainstreaming across sectors. However, MoWECP lacks regulatory authority over other ministries, leading to criticisms regarding its limited institutional power to ensure effective implementation. As a result, the ministry relies heavily on coordination, inter-ministerial collaboration, and engagement with both technical ministries and local governments to advance gender mainstreaming in planning, budgeting, and programming.

Name of Institutions	Level	Description	Challenges
			In the context of decentralization, this limitation is further compounded at the subnational level, where gender and child protection functions are often merged with other sectors such as social affairs, labor, or family planning. This institutional merging—combined with minimal budget allocations—significantly constrains the capacity of local governments to fully carry out the national mandate on gender equality and the protection of women and children.
National Commission on Violence Against Women	National	a national human rights institution established to address violence against women. It is mandated to create a enabling environment for the elimination of all forms of violence against women and to promote women's rights	Unlike the National Human Rights Commission (Komnas HAM), which is established by law and has investigative powers, the National Commission on Violence Against Women (Komnas Perempuan) was established through a Presidential Regulation and lacks law enforcement authority. Its mandate is limited to monitoring, advocacy, mediation, and policy recommendations. As a result, it cannot compel law enforcement officers to act on its recommendations, and many cases of violence against women remain unaddressed. Komnas Perempuan does not operate shelters, provide direct psychological services, or have emergency funds for survivor. Protection relies heavily on other institutions whose availability and quality vary across regions. Its limited

Name of Institutions	Level	Description	Challenges
			authority also means that its recommendations, such as those on sexual violence or agrarian conflicts affecting women, are often ignored by ministries, police, or local governments. Furthermore, its work is constrained by limited state funding, which hampers outreach and case monitoring in remote areas.
Integrated Service Center for Women and Children Empowerment and Protection (P2TP2A)	In district level (and sub-district in some cases)	P2TP2A is services center for women and children, particularly those who are victims of violence, discrimination, or neglect. Its services typically include legal assistance, medical and psychological support, social and shelter services, case handling and referrals, as well as awareness raising and advocacy to promote the rights of women and children. This services usually provided by respect women and children protection office.	The quality and effectiveness of P2TP2A varied widely across regions, as their establishment and operational support depended heavily on the policy commitment and capacity of local governments. P2TP2A was never mandated by national law—its formation was encouraged but not required. As a result, while some centers operated effectively with trained staff and strong multi-sector coordination, many others suffered from limited capacity, inadequate funding, or even inactivity. The absence of national standards for staffing, budgeting, and service provision further contributed to this uneven implementation across provinces and districts.
UPTD PPA (Regional Technical Implementation Unit for the Protection of Women and Children)	National	UPTD PPA is a government unit established at the provincial or district/city level to provide integrated services for women and children who experience violence, discrimination, or neglect. It is part of the formal structure under the local office for women's empowerment and child protection (Dinas PPPA).	MoWECP has been encouraging local governments to transform P2TP2A (Pusat Pelayanan Terpadu Pemberdayaan Perempuan dan Anak) into UPTD PPA (Unit Pelaksana Teknis Perlindungan Perempuan dan Anak). This transition is aimed at formalizing their institutional structure under local

Name of Institutions	Level	Description	Challenges
			government authority, enabling them to have clearer mandates, standardized operating procedures (SOP), and access to regional budgets (APBD). UPTD PPA in provincial level has been established in all BEAM targetted areas: Aceh, North Sumatera, West Sumatera, Bengkulu, Lampung and Banten.

Overall, although the legal framework is advanced, the main gap lies in its weak implementation. Several factors contribute to this, including limited understanding of the law among stakeholders, inadequate capacity (in terms of budget and infrastructure) to carry out programs, and political reluctance often rooted in prevailing cultural and patriarchal norms.

V.2 Community members and groups considered to be vulnerable in coastal communities

As identified in the regulations⁵⁹ governing the protection and empowerment of fishers, fish farmers, and salt farmers, certain groups are considered to be vulnerable; therefore, they need to be prioritized in various government programs and assistance targeting the well-being of coastal communities. This study finds that these groups are particularly vulnerable to climate change due to their high reliance on marine resources. These groups are regarded as small-scale fisheries actors, as they practice activities ranging from fishing, boat building, fish-processing, and marketing, which are usually characterized by the use of low-technology and low capital-based methods (Short, R.E. et al. 2021)⁶⁰. In Indonesia, small-scale fishers have a very important role, as they contribute to sixty (60%) of fish production in Indonesia (Rudianto, E., & Seftiariski, R. (n.d.))⁶¹.

V.2.1 Small-scale, poor, traditional fishers (male and female)

Across the study location in six provinces, this group was identified to be vulnerable, particularly due to their high reliance on marine resources for income and food security. Since men and women typically

⁵⁹ Act of Republic Indonesia no 76/2016 regulates Protection and Empowerment of Fishers, Fish, and Salt Farmers). This regulation then replaced by Peraturan Pemerintah Pengganti Undang-Undang (Perpu) 2/2022. However, there is no change in the definition of groups identified to be vulnerable

⁶⁰ Short, R.E. et al. (2021). Harnessing the diversity of small-scale actors is key to the future of Aquatic food systems. Nat.Food 2, 733-741

⁶¹ Rudianto, E., & Seftiariski, R. (n.d.). *The Impacts of Climate Change to Marine and Fisheries Sector and Its Relevances to United Nation of Convention of Law of the Sea (UNCLOS) Arrangements*. Directorate General of Surveillance for Marine and Fisheries Resources

have different roles at the household and community levels, their experiences and the impacts of ocean-related risks resulting from climate change are different.

V.2.1.1 Male Fishers

Across all study sites, male fishers usually have roles as the head of the households and breadwinners, usually the ones who undertake fishing trips to the sea. Particularly for male fishers, most of the time, side or alternative jobs are very limited in the coastal area, while certain types of jobs are only available in certain seasons (construction worker, farming, carpenter, etc). On the other hand, low education and skill outside fisheries become two of the factors for this group to have very limited options for alternate jobs and income.

Many of the interviewed male fishers grew up in households where fishing was the main source of income. As a result, fishing became a profession passed down through generations, with many fishers joining fishing trips from a very young age. For most of the male respondents interviewed in this study, it was explicitly expressed that being fishers has become an occupational identity for them. While the agency of fishers determines their behaviours towards climate change, key cultural values like place attachment and occupational identity can also be the potential source of resistance and opposition to adaptation efforts (Cinner, JE. et al., 2018). Therefore, it can be challenging for fishermen to take other jobs outside the fishery or ocean economy sector. Furthermore, as described by Cinner, JE. (2011)⁶², diversification is not always seen as an option for severely poor households since the potential costs and risks arise from trying something new can be insurmountable.

Aside from the vulnerability related to the livelihood, the study also finds other concerning issues related to occupational risk affecting the health and life of the male fishers; several cases of death identified from respondents' stories due to sickness from exhaustion, the use of improper equipment for the work involves diving activity. However, this study does not have enough data and information on this matter; a further study is highly recommended to explore more the occupational risks and health consequences faced by male fishers from fishing trips.

V.2.1.2 Female Fishers

Across study sites, task allocation for men and women in the fishery sector is quite clear, with women usually in charge of processing and marketing the catches (usually called and registered as *Poklahsar/ Kelompok Pengolah dan Pemasar* by the office of Fishery). The *Poklahsar* groups rarely have few male members; most of the time, it is reported to be dominated by women. At the household and community level, women are responsible mainly for domestic chores (cooking, taking care of children and family members, and cleaning the house). Women's role as caretakers of the house and family members can be considered inherent and perceived to be the main roles.

In addition, a study finds that the term fishers is commonly perceived to be male domain in all study areas, as this is similar to what happens in Indonesia and other countries (Branch, T.A. & Kleiber, D. 2017)⁶³, there

⁶² Cinner JE. (2011). Social-ecological traps in reef fisheries. *Global Environmental Change* 2011, 21(3): 835-839

⁶³ Branch, T.A. & Kleiber, D. (2017). Should we call them fishers or fishermen? *Fish and Fisheries*. 18, 114-127. Wiley Online Library. <https://doi.org/10.1111/faf.12130>

are common practices found in several areas for women to do fishing activities, particularly in Banten, Mentawai, and Bengkulu Provinces. However, the types of catches typically targeted by women and men differ. Most women in these areas reported going on fishing trips, usually gleaning snails and seashells as their main catches on a regular basis, both for commercial and subsistence purposes. It is also important to note that the study found a widespread misperception that gleaning snails and seashells are often considered not as fishing since seashells and snails are not 'fish'. As a consequence, women are usually not considered as fishers. The study identified the misconception as one of the factors causing gaps in the registration of women in fisheries sectors as fishers, while in fact, the fishery sector in Indonesia defining Fishes as all types of organisms that all or part of their life cycle are in the aquatic environment⁶⁴. This issue, with its consequences in hindering women from accessing government assistance programs, will be discussed in the next section.

Aside from their vulnerabilities related to being excluded from the official data/registration system, female fishers are found to be one of the most vulnerable, particularly due to their reliance on marine resources (both for earning income and providing food for their families), unavailability of proper working equipment and safety measure, excessive burden and working hours from domestic chores, as well as fishery pre & post harvesting work. The double burden faced by women and being excluded from most of the assistance programs for fishers often put women more vulnerable than their male counterparts. A previous study done by *Jurnal Perempuan* highlighted the issue of the excessive burden and working hours, as well as exclusion from access to fisher's card faced by women in coastal community, as illustrated by the quotes from the interview with few of their respondents below (Pratiwi, AM., Abby, G., 2017)⁶⁵.

"Well, (I) want recognition as a fisherwoman because my husband and I both go out to sea. It's heavy for me, plus taking care of husband, child(ren), household chores, selling as well, selling martabak, chicken noodle, shaved ice. Once I arrive home, I take care of children first, cook, and at 3pm I leave the house again to sell chicken noodle, martabak in front of my own home until 9pm. And then I wake up again at 2. Well, what can I do. I work more than my husband." (Surotun 2017, interview 4 September 4)

"Once women are acknowledged as fisherwomen, access to a fisher's card can be obtained by fisherwomen. Also, in demanding access for fisherwomen, we're also (demanding) the protection of fishermen/women's rights because, in fact, Law No. 7/2016 on the Protection of Fishermen, Salt Farmers and Fish Farmers has not yet touched on fisherwomen and has not been implemented well in practice, only on paper." (Masnuah 2017, interview 3 September)

In this study, it is quite common to find women who work as snails and seashell gleaners also undertake the processing and marketing to earn more money, except in Bengkulu and Mentawai. Women often take various jobs outside the fishery and ocean-related sectors to meet their family needs, ranging from farming, providing services as a laundress, household assistant, and masseuse, and making and selling crafts from plastic trash. One of the success stories shared by women's group in Lampung on their alternate livelihood in making and selling crafts. The activity was facilitated by the local government through the provision of support to one of the women's groups. The group is able to sell their products in the exhibition events and this has been reported as one of the sources of additional income for women in the local area.

A. Women working in the informal sector (particularly in post-harvest)

⁶⁴ The Act of Republic Indonesia no 76 on Protection and Empowerment of Fishers, Fish, and Salt Farmers categorized clams, oysters, snails, and other mollusc species that often caught by women as Fishes

⁶⁵ Pratiwi, AM., Abby, G. (2017). The Presence of Power of Fisherwomen in the Villages of Morodemak and Purworejo: Against Violence, Bureaucracy & Biased of Religious Interpretation. *Jurnal Perempuan*, vol. 22 no.4. <https://doi.org/10.34309/jp.v22i4.203>

Around the world, women's involvement in small-scale fisheries is fundamental yet undervalued, as it is found across many fisheries and contexts that women are most likely to undertake labour-intensive post-harvest activities, which typically pay less compared to harvest-related work (FAO 2016). Similar to this, in Indonesia, post-harvest tasks are well known to be female-dominated, as there are large proportion but unknown numbers of women are involved in long hours work in post-harvest related activities, with low payment (Fitriana, R., Stacey, N 2012, Salagrama, V. and A. Salka. 2010⁶⁶). Based on information gathered from respondents in all study areas, below is the comparison of average fees among various tasks in pre-, post, and harvest-related activities performed by men and women.

Table 5.6 Tasks and activities done by men and women in fishery

Stage/Activities	Fee/ Earning	Stage/Activities
Pre-Harvest		
Preparing meals	unpaid	Women
Mending nets	unpaid	Men (sometimes women undertake the task)
Preparing bait	unpaid	Men
Prepare fuel	unpaid	Women
Prepare boat & vessel	unpaid	Men
Harvest-related		
Catching fishes	50-300K/day	Men
Picking up Snails, Seashells	20-100K/day	Women
Picking up crab	50K/day	Women
Post-Harvest		
Handling (preserve the fresh catches)	unpaid	Men & Women
Cleaning	100K/day (2 boxes)	Women
Sorting	5K/kg	Women
Chopping	3K/kg	Women
Filleting	3-4K/kg	Women
Peeling clams	5K/kg	Women
Selling catches (fish)	5-10K/kg or 50K/day (nett profit)	Women
Farming (Fishes)		
Applying seed, feed, Monitoring, watering, etc	IDR 2-3 mio/month	Men
Preparing meals for workers	IDR 1.2-1.5/month	Women

The list of activities above has shown that most of the post-harvest-related tasks are usually done by women, with very low pay. Across study areas, most of the women working in fishery interviewed in this study to some extent involved in the post-harvesting process (handling, cleaning, sorting, smoking, boiling, chopping and marketing, and selling). Those whose main income comes from this sector are highly reliant on the availability of fish caught by their partners or other fishers to be able to earn money from processing the catch. As mentioned above, other than paid jobs, women must take many unpaid works at the household level (cleaning the house, cooking, doing laundry, caring for the children), assisting their

⁶⁶ Salagrama, V. and A. Salka. (2010). A Study of the Fisheries Post-Harvest and Market Supply chains in Nias Island, North Sumatra Province, Indonesia. FAO Nias Information Bulletin 1. Food and Agriculture Organization of the United Nations (FAO). 128 pp.

partners in pre-harvest tasks (preparing meals, buying fuels, mending nets) and post-harvesting (processing, marketing and selling the catch).

B. Workers in Fish Farms, Aquacultures

Among the other respondent groups, this group was the hardest to interview since they usually live in a compound and are involved in labour-intensive work, especially those in charge of supervising the working process of fish farming and aquaculture. The study team managed to talk with a few staff living inside the compound while they were not working. Information gathered from informal talk with the workers in the field indicates that they are usually living in a compound during their work period, have very limited access to information, and live outside the compound, and it is common to work without a contract. While most of the workers are usually men, women live in the compound, usually the wives of the workers, and sometimes employed as cooks, and there are children living with them. There is a high possibility they are not even registered as actors of fisheries in KUSUKA and do not have access to any assistance, as most of them are not registered as fishers or farmers and rely on informal working agreements.

C. Other vulnerable groups

Female-elderly & Female head of the household in coastal areas

Female head of the household is found to be vulnerable across all study areas in six provinces; they usually have low education and skills outside fisheries since most of the time they have been involved in fishery-related works, making them highly dependent on marine resources as the main source of income. In addition to that, having no partner in earning income for the household means they must undertake a double burden of replacing the role of the main breadwinner, along with all the responsibilities of caring for the children and household.

The other group, the elder⁶⁷ women working as fishers are particularly found in Mentawai, while in another area, only a few of them are found to work in fish sorting or processing. In one of our interviews with the elderly in Mentawai, we found cases where the older women undertake fishing and other kinds of work to cover not only their needs but also other family members (adult children, grandchildren, daughter-in-law) even though they are often limited by their physical condition. The fact that it is common to find even elderly to undertake fishing might, to some extent, reflect the large proportion of fisher households in Mentawai. Accurate numbers on the existence of women's groups involved in fisheries, including the elderly, are not available, not only in Mentawai but across Indonesia.

Poor Coastal Community Groups involved in the tourism sector

In several study sites where tourist attractions are located nearby, especially for marine tourism, the study finds intersecting interests and roles of poor coastal communities, including those involved in fisheries, with activities in tourism, which sometimes results in conflict. In one of the discussion sessions with male fishers, there is a story about an illegal practice done by a certain group of people to sell subsidized fuel to resorts, involving small fishers hired to deliver the fuel with their boats. The case was identified by authorities and led to the shutdown of the fuel subsidy program targeting small farmers in that area. There are also reports from fishers and NGO staff interviewed on destructive behaviours from tourists dropping anchors to deeper water in prohibited areas, resulting in damage to corals. It is important to note,

⁶⁷ According to Presidential Decree no. 88/2021 on National Strategy for Elderly, individual aged 60 years old above categorized as elderly

however, that information provided about the involvement of the poor coastal communities in the tourism sector is anecdotal and not experienced by the respondents themselves. Therefore, it is recommended that it be assessed further. There is a lack of information on their roles, experiences, and contributions in this sector. While this study is set to allow the involvement of actors from another blue economy sector in the interviews and FGDs, none of the respondents in this study have experience working in the tourism sector; most of the respondents rely on fishery as their main income.

In general, the tourism sector in Indonesia has relatively high labour absorption. Ministry of Tourism and Creative Economy and Statistics Indonesia/BPS (2022)⁶⁸ reported that in 2021, there are 333.47 million labourers, or 25.54% of total workers in Indonesia, reported working in tourism and the creative economy. This sector has a higher proportion of females (55.232%) than male labours (44.68%). In tourism alone, the shared proportion is about 16.2%, meaning that there are 16 people working in tourism among every 100 workers in Indonesia. During 2020 and 2021, the male labourers are predominantly consisted of the age group 25-40 years old (38.75% and 37.61%), while their female counterparts dominated by labourers aged 41–59 years old (37.65% and 38.80%). Both for male and female groups, the lowest percentages are among labours aged above 60 years old.

Within six provinces of WPPNRI 572, below are the number of labourers in each province working in the tourism sector, with the percentages representing the proportion of total workers in the country. Among six provinces, from 2018 to 2021, North Sumatera and Banten have the greatest shares of labours working in tourism, followed by Lampung and West Sumatera.

Table 5.7 Number of workers in tourism in six provinces of WPPNRI 572 in 2018 – 2021

Province	2018	2019	2020	2021
Aceh	235,333 (1.21%)	250,189 (1.20%)	263,796 (1.29%)	282,834 (1.33%)
North Sumatera	1,006,444 (5.17%)	1,062,386 (5.12%)	1,016,434 (4.97%)	1,083,979 (5.09%)
West Sumatera	378,073 (1.94%)	386,079 (1.86%)	407,282 (1.99%)	415,896 (1.96%)
Bengkulu	99,090 (0.51%)	105,850 (0.51%)	114,319 (0.56%)	110,012 (0.52%)
Lampung	536,535 (2.75%)	545,316 (2.63%)	515,970 (2.53%)	546,111 (2.57%)
Banten	905,147 (4.65%)	1,028,254 (4.95%)	1,110,507 (5.43%)	1,133,570 (5.33%)
Indonesia	19,457,554	20,760,624	20,434,296	21,255,535

Sources: Statistics of Labours in Tourism and Creative Economy 2018-2021, Ministry of Tourism and Creative Economy & Statistics Indonesia

**Percentages are proportion in each province compared to total workers in Indonesia*

Looking further at the national data of labour in tourism, there is evidence indicating socioeconomic vulnerabilities from the great proportion of labours in the sector. In 2021, both in urban (45.69%) and rural

⁶⁸ Ministry of Tourism and Creative Economy/Kemenparekraf (2022). Statistics of Labours in Tourism and Creative Economy Sector 2018-2021.

<https://api2.kemenparekraf.go.id/storage/app/uploads/public/63e/d99/bb5/63ed99bb5d83b591570455.pdf>

(63.10%) areas, there are great shares of workers in tourism with completed highest education from junior high school or below. Compared to other sectors in Indonesia, tourism has a relatively higher proportion of informal workers, with greater percentages among female than male groups. In 2021, 81.83% of informal workers in tourism are female, and 56.76% are male, compared to 68.3% and 56.61% in all sectors for informal female and male workers. Most of them are blue-collar workers, with a higher proportion coming from a female group (95,90% for females and 94,28% for males in 2021) and those residing in rural areas (97.23% in rural and 94.33% in urban areas in 2021). In addition to that, both among male and female groups, there are significant numbers reported to work more than 48 hours/week (42.02% for male and 45.61% for female in 2021). While this is the pattern identified for other sectors (all sectors column) in the country, it is also important to take notes on the significantly higher numbers of female workers reported undertaking unpaid work or considered as family workers compared to their male counterparts, as one of the gender gap indicators in this sector. From 2018 to 2021, the total number of female labourers who undertook unpaid work was consistently more than two times higher than the male group.

Table 5.8 Number of unpaid/family Workers in tourism and all Sectors by sex from 2018-2021

Sex & Years	Tourism				All Sectors (2021)
	2018	2019	2020	2021	
Male (Unpaid/Family Workers) (% from total)	740,717 (8.15%)	724,656 (7.40%)	724,656 (7.74%)	1,193,100 (12.63%)	5,311,225 (6.70%)
Total Male Workers with all status	9,092,512	9,785,152	9,357,772	9,447,567	79,263,314
Female (Unpaid/Family Workers) (% from total)	1,887,125 (18.21%)	2,089,334 (19.04%)	2,588,937 (23.37%)	2,717,256 (23.01%)	12,614,924 (24.36%)
Total Female Workers with all status	10,365,042	10,975,472	11,076,524	11,807,968	51,787,209

Sources: Statistics of Labours in Tourism and Creative Economy 2018-2021, Ministry of Tourism and Creative Economy & Statistics Indonesia

SEAH and the tourism sector

According to national studies, sexual exploitation associated with tourism is present in almost all of Indonesia. The most affected age group ranges between 14 and 18, and the majority are girls.⁶⁹ In the island of Sumatra, the most affected province by the sexual exploitation of children associated with tourism is North Sumatra, especially the area of Medan. Child prostitution's demand in North Sumatra is driven by men who travel for business or tourism, from other regions within Sumatra, and also coming from countries outside Indonesia. The main vulnerability factor for children who are sexually exploited in this region is poverty. Children are usually identified and approached by sex traffickers through their school peers. Even though sexual exploitation is currently not reported to be a major issue in the provinces of Sumatra, which are prioritized by this project, a potential increase in the influx of male tourists or male workers could potentially expand this issue to the provinces supported by the project if mitigation measures are not considered.

⁶⁹ ECPAT Indonesia. "Global Study on Sexual Exploitation of Children. Country-specific Report-Indonesia" (2016). Report available at: <https://ecpat.org/wp-content/uploads/2021/05/3-SECTT-INDONESIA.pdf>

Gender Roles in the tourism sector in Indonesia

Tourism is one of the sectors in Indonesia which has a significant participation of women. Despite the participation is high, women are often engaged within the sector in community-based tour, such as ecotourism and rural tourism⁷⁰. Women in Indonesia often have roles like homestay operators, cooks, artisans, and cultural performers⁷¹. Less frequently, they occupy management positions or as business owners. This context makes important to acknowledge that often initiatives focused on tourism might replicate existing gender stereotypes and will continue to maintain women in the roles within the sector that are unpaid or have lower salaries. This risk is highlighted by Lestari(2020) by highlighting that often “greenwashing” in ecoturismo initiatives also comes together with processes that reproduce inequalities and gender stereotypes⁷².

Gender Roles in the Waste Management Sector in Indonesia

In Indonesia, the waste management sector tends to have very differentiated roles, responsibilities, and opportunities for women and men. Although sometimes women and men work together in waste-picking (as a household or a couple), it is common to observe that women experience more stigma doing this labour, and they also face higher security risks of experiencing sexual harassment⁷³. In addition to this, women are more often participating in the waste management informal sector and have less access to formal job opportunities⁷⁴. This is often due to gender stereotypes, for example, the belief that men are more capable of doing the work due to physical strength.

The types of roles for women and men in the waste management sector are often different as well. Men usually have collection and transporting roles, while women's roles are more related to sorting, recycling and participating in waste banks. These roles tend to be less valued, and remuneration tends to be less than that of their male counterparts⁷⁵. Approximately 75 percent of those participating in waste bank programs in Indonesia are currently women⁷⁶. Also, it is observed that women have lower access to equipment and markets, and this often results in them facing greater health risks.

⁷⁰ Bently, C. (2020). “Towards Gender Equality in Indonesian Tourism”. Available at: <https://www.tourism-watch.de/en/article/focus/towards-gender-equality-indonesian-tourism/>

⁷¹ Ibid.

⁷² Lestari, S.F. (2020). “Ecotourism, Greenwashing, and Reinforcement of Gender Roles in Lombok, Indonesia”. Available in: <https://medium.com/@serunifauzialestari/ecotourism-greenwashing-and-reinforcement-of-gender-roles-in-lombok-indonesia-94d0f17b263c>

⁷³ Putri & Colombijn (2025). "Debilitating Domestic Duties: Precariousness of Female Waste Pickers in Indonesia". Available at: <https://www.whp-journals.co.uk/WW/article/view/1135>

⁷⁴ Ibid.

⁷⁵ World Bank (2019). "Improvement of Solid Waste Management to Support Regional and Metropolitan Cities Project". Available at: <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/608321575860426737/indonesia-improvement-of-solid-waste-management-to-support-regional-and-metropolitan-cities-project>

⁷⁶ Ibid.

In addition to all the above, women also have a higher participation in managing waste at the household level, as part of the domestic unpaid labour⁷⁷. They also participate more than men in community-based waste management efforts. Furthermore, as women participate more often of the informal sector, and have higher burdens of unpaid domestic work, they have less time available for productive work. This often translates in them having lower incomes than men. Overall, there are many barriers for women who participate in the waste management sector, but there are also opportunities to improve their current working conditions and enhance their already existing associative initiatives.

V.3 Their vulnerabilities, challenges faced, and how it impacts the ability of women and vulnerable groups to adapt to climate changes

A. Fishers and other coastal community members in general are not familiar with the term nor aware of climate change phenomenon that occurs globally, perceiving the relevant nature signs as part of inevitable changes of natural phenomenon

All the fishers (both male and female) and other coastal community members interviewed in this study are not aware of the term nor of the climate change phenomenon that occurs globally, but all respondents across study sites reported several similar natural signs and how it impacts their work. :

- Decrease in the amount of catches, harder to catch the usual amount of fish.
- Catching areas move further from the coastal line. Fishers often need to travel further or move to several spots in one fishing trip.
- Unpredictable bad weather, harder to predict the weather.
- Unexpected/non-targeted species like mammals often get caught in the net.

One of the male fishers explained to the interviewers that they could never predict the weather as they usually did in the past.

"...but before, a week before the storm we usually can predict it. It is not the case for now, lets say we go to the sea today, and we could see from the weather at night that the storm will be coming tomorrow, but suddenly we have good weather, we really cannot predict the weather now."

As documented and highlighted by the Ministry of National Development Planning/Bappenas (2021a)⁷⁸, the nationwide climate impacts, including increasing extreme waves, rising sea levels and temperatures, and changing rainfall, have been found to increase hazards in marine and coastal ecosystems. Those hazards are similar to what has been reported by respondents in this study: coastal slope decline due to floods, ecosystem damage, as well as decreasing fishing range for small boats (<10GT), storm surges, and extreme waves.

Despite all the negative impacts experienced by fishers and the communities, these changes are perceived more as inevitable natural phenomena, that can't be prevented and are part of the natural occurrence.

⁷⁷ Fitriani et al. (2024). ""Community-Based Waste Management in the Township PT. Bukit Asam, Tanjung Enim, Indonesia". Available at: <https://ijoems.com/index.php/ijems/article/view/369>

⁷⁸ Ministry of National Development Planning/Bappenas (2021). Climate Resilience Development Policy 2020-2045. https://lcdi-indonesia.id/wp-content/uploads/2021/11/0_Executive-Summary.pdf

On the other hand, changes reported above have been associated by many respondents with some ocean-related incidents that occurred in the past or near the time when interviews were being conducted in study sites. In Aceh, for example, bad weather has been reported to be more unpredictable since the Tsunami in 2004, while a decrease in catches was linked to the ship incident spilling asphalt into the ocean in Nias and the development of a power plant tower in Banten.

While the low awareness of how climate change can impact livelihood among coastal communities might be caused by a lack of access to information, this leads to misunderstanding on what can be done. This is due to low awareness and level of knowledge on sustainable fishing and farming practices, as well as a wider context of what is happening to the ocean and its resources in general. Some of the respondents reported that they never heard any information related to abrasion or damage in marine resources. This has, to some extent, caused a perception that fishers can only surrender, and nothing can be done to address and prevent all those negative impacts.

Interviews with NGOs working on environmental issues and climate change across all study sites confirm that there is low awareness among fishers and coastal communities about climate change and what can be done to prevent and address it. Small fishers, women, and other vulnerable groups have no accessible information related to climate change and how it can impact their livelihood. This is confirmed by several respondents from local NGOs interviewed in this study, who have background and experience as fishers and are now fully or partly working in an NGO with a focus on the environment. They told the study team that the exposure working with NGOs has improved their awareness and knowledge of climate change. Furthermore, Having no access to adequate capital and limited assistance from the government also lead to the condition where they have no flexibility in shifting gears or occupation outside the fishery.

B. As most of the fishers and coastal community members involved in SSF are poor, a decrease in the amount of recent catches has significantly affected their ability to make ends meet.

Climate change has brought negative impacts, particularly on the livelihood of vulnerable groups relying on marine resources and living in coastal areas. All reported changes in frequency, predictability of bad weather, less catches to find in usual catching areas so that fishers need to either travel further or to several locations in one trip, have, in turn, reduced their income and often increased the cost required for the fishing trip since they need to buy more fuels for the trip.

With a very limited option to find alternative sources of income and no savings, most of them often rely on loans from individually owned or informal financial institutions (loan sharks are among them), unions, Badan Usaha Milik Desa (BUMDES), or village-owned enterprises as a way out. These institutions have been chosen by most of the community members looking for loans due to their accessibility and relatively easy, simple procedure (they only need to provide a copy of their ID card, and someone in the family has a job as a warrantor), most of these institutions take high interest rate. As an example, women interviewed in Banten told the interviewer that if they take IDR 2 million loan they have to return IDR 600K for the interest (30% interest rate). Coastal communities also often seek to borrow money from relatives or nearby stores where they can pay later for meals or goods. Interviews with community members and stakeholders from NGOs highlight that fisher households are often in huge debt due to financial mismanagement and no access to financial institutions with fair interest rates. This, in turn, can weaken their resilience and exacerbate their vulnerabilities to climate change in the long run. In one of the FGDs with fishermen, further impact on the coastal community, in general, was discussed, that decreased catches have also, in

turn, affected the ability to surround the coastal community to buy fish. Therefore, it is harder to sell the fish compared to the past.

" It affects us a lot. Their ability to buy have also decreased, before if we travel around with car we can sell 500kg, sold within a short time. But no, even to sell 100kg is hard."

-FGD with fishermen in North Sumatera

In one of the FGDs with a women's group working as fisherwomen in Banten, they reported recent changes in the declined amount of catches, and one of the respondents linked this with the development of a steam power plant in the area.

" (R1) Since none of us here have a land to cultivate, so we rely on marine resources. But recently it is not reliable, not enough for us to (to meet daily needs), I don't know why....."

" (R2) Since the steam power plant built here, the mud becomes too thick, therefore somehow lamis, and other seashells, hard to be found....i can say, the waste can't flow and trapped there, so all the organisms from the sea, like seashell, clams, crab, could not live there. In the past i can just take the catches there and sell it in the market, and it is enough, i can have (the money) to buy all the needs to take care my children. But since the power plant built there, all the waste are trapped there."

-FGD with fisherwomen in Banten

One of the interesting practices observed is how the community, especially women's groups, create a mechanism to help each other in a group when they take a loan from the *rentenir* (called *Bank Keliling*), appointing a leader/coordinator, making trust-based agreement among the members that when one of the members could not pay their instalment, the other members will help to cover it. Women are often the one who deal with the loan administration even though it needs to be registered under their husband or other adult family members. Women usually cannot register themselves to get the loan since their ID recorded them as housewives.

Interviewer : Have you ever experienced one of the members could not pay the debt?

R (Respondent)1 : Yes, it oftentimes

R2 : Not only once...however, we help each other, because we made an oath that we will back each other up

R3 : Bearing this together.

R1 : We take the loan with an oath, taken in group. We made an oath first, and when we get it (the loan), we pay weekly, fifty thousand rupiah each. If there is one of us could not pay, then the other will pay on behalf of her.

There are a few other strategies reported to be quite common practice, which could be varied across provinces. In North Nias, for example, men are often traveling outside Nias to work in plantations during low catch season. In Mentawai, coconut farming has been done by several farmers as an alternative source of income beside fishing. Only a few of the respondents are able to have savings and use them when in need; usually, when they have good catches, they will save the money, and when bad weather hits, they will use the savings to cover daily needs. There are only a few examples found in the study where the community utilized technology like cold storage to preserve the catch, oven to smoke fish, and to support the household when there is no catch. Only in Nias Utara did the study find an active union who have cold storage and an oven that can be utilized by its members. Most of the women's group interviewed are making smoked fish with the traditional methods (sun-dried) to earn more money or when there are no catches to be sold.

C. Women have been in particular impacted significantly by extreme weather events and other damages caused both by climate change and non-climate drivers, and at the same time, have to juggle so many tasks in the domestic area

The natural signs and extreme weather events that reflect the effect of climate change have been described by all respondents in this study to have negative impacts on their livelihoods. This study found that for women in particular, the impacts are significantly affecting their roles, both directly and indirectly.

C.1. As women are usually targeting organisms like clams, crabs, and seashells that live in shallow coastal or intertidal habitats, the damages caused by extreme weather events, as well as non-climate drivers, have significantly impacted the livelihood of those depending on coastal biodiversity

As described in the previous section, most of the women who undertake fishing usually target organisms in shallow coastal or intertidal habitats like seashells, clams, and crabs, as they can reach this area without a boat or specific tools. As it is found in previous studies (Colette C.C.W., Robert, B., Sarah, H., et al. 2021), this study found that climate changes described by many female fishers in the form of extreme weather events, sea level rise, coastal erosion, have hindered their ability to get the catches or access nearshore fishing ground. Moreover, non-climate drivers, such as pollution, coastal development, and eutrophication, exacerbate the damage to coastal biodiversity, which in turn impacts the livelihood of those who depend on their existence. The case of damages caused by water pollution has been found specifically in a study site in Lampung Province, where the development of factories has caused damage and water pollution in a coastal area. Therefore, the fishing ground nearshore no longer exists in the area, causing many fishers to lose their jobs. When the study was conducted, many fishers were reported to work as odd labourers or casual workers, undertaking anything they could find to earn money while they were waiting for any program and intervention from the government to restore the fishing ground.

Another concerning issue to be highlighted here is the lack of safety measures and equipment to assist women in conducting the work. As this is observed to be one of the contributing factors that cause fishers in general to be potentially injured by extreme weather events (KOMPAS, 26 July 2023)⁷⁹, women, in particular, are more vulnerable since their activities are often not included as fishing. Therefore female fishers are often excluded from program assistance providing fishing equipment or tools that will enable them to undertake the work safely. The study finds that even though women undertake fishing in shallow coastal areas, the absence of proper gear often puts women at risk arising from the occurrence of extreme weather events and sea level rise when they undertake fishing work, let alone their exposure to pollution. While the necessity of using proper equipment and applying safety measures are rarely discussed, yet considered to be prioritized, there are cases of injuries and high risks of accidents (crooked fingers, pale and numb palms and fingers from water bugs) reported by women during the interviews and FGDs.

⁷⁹ Yunus, S. R., Yulianus, J., Manumoyoso, A. H., Triwibowo, D. R., & Herin, F. P. (2023, July 26). Warga Pesisir Masih Bertaruh Nyawa di Laut. *KOMPAS online*. <https://www.kompas.id/baca/nusantara/2023/07/26/warga-pesisir-masih-bertaruh-nyawa-di-laut>

Image 5.1 One of the organisms (snails or *siput biduan*) collected by women with barre hands (left) and One of the female fishers showed her crooked fingers from gleaning snails with barre hands (right) in Bengkulu



Photo Credit: Melly /Blue Halo S GESI Assessment

Gleaning *siput biduan* or snails is one of the regular fishing activities done by women in Pulau Baai, Bengkulu. During our interview with a group of fisherwomen, they describe that to be able to catch the snails; they have to dip their hands into the sand, groping for the snails, and pick them up when they can reach them. Doing it on a daily basis, it is common to find snail gleaners with crooked fingers. The fisherwomen can collect up to 30kg per day, carrying them on their backs during their trip going back home. They have been doing the work with bare hands, there is no assisting tool or equipment utilized to do the work.

Image 5.2 One of the fishing equipment functioned as a 'boat' by women in Pandeglang, Banten



In one of the FGDs with female fishers in Banten, it was reported that often times one of them ride the white box in the picture as it will float her like being on the boat when she is looking for seashells (*lamis*). The box is not designed for sailing or carrying people but has been utilized as one of the pieces of equipment to assist women when they do fishing, in particular, to enable them to reach the further areas near the shore without being submerged in the water. The female respondent, who often rides the box, told the interviewer that she has no money to buy a proper boat and gear to do her work. Being the female head of the household and breadwinner, she expects the government to provide assistance for poor fishers like her.

Photo Credit: Emmy/ Blue Halo S GESI Assessment

C.2 Most of the jobs available in fishery for women require long hours of work with low pay, but to some extent considered to offer time and arrangement flexibility, especially for those with children

In relation to women's role in the post-harvesting sector, climate change has, in turn, affected activities throughout the supply chain in the fishery and the incomes derived from them. For most of the fishers, particularly the small-scale ones, more days with bad weather means fewer days for boat-based fishers to

go out fishing. This has been impacting the amount of catches, which in turn lessens the income of fishers (in most cases men) and also affects the quantity of fish available to be processed and traded, which in many contexts, including Indonesia, is done by women.

As mentioned in the previous section, most of the women interviewed in this study were involved in fishery-related work to earn additional income for their families. Most of the jobs taken are fishery related, particularly in sorting, processing, and selling. As most of those workers pay a very small fee based on the amount of catches being processed (per kg, per box, etc.), women have to work for long hours (on average, women can work 4-7 hours for this post-harvest alone, interspersed by other domestic works) to be able processing a sufficient amount of the catch so that they can get enough money (as described in table 2 above). It is also important to note that while the work being done in fish processing requires women to perform a certain level of speed and thoroughness, these tasks are often regarded as low-skilled or unskilled work, which is then reflected in the payment, status, and working conditions. This eventually led to practices of women's work being undervalued throughout the fishery value chain.

Image 5.3 Night shift in one of the stalls for fish processing in Pandeglang, Banten



Working time for fish processing depends on the time when the fishing trip is complete. During the data collection, we observed several working stations that usually employ women across study sites and at various work shifts. Women usually work during the day time in fish processing and marketing, but there are times when the catches arrive at night so the processing work needs to be done late at night. As shown in the picture, in one of the fish processing stalls in Banten, workers (mostly women) were sitting on the floor, sorting the anchovy at night shift with bare hands. The night shift usually starts around 6-7 PM until the work is done, which depends on the amount of catches and the number of workers involved. In average, women usually work for five to ten hours in a day, with fee IDR 5K for 1 kg sorted anchovy (earning IDR 25K – 50 K per day).

Photo Credit: Emmy/Blue Halo S GESI Assessment

As household catch decreases and household income is impacted, the fisher household can not rely solely on their own catch to meet needs. The necessity to maintain household expenditures then drives household members to seek additional income besides their main income from fishing activities. The wives of fishermen, in most cases, are the ones who will undertake more work for additional income since their husbands spend most of their time on fishing trips, but sometimes the wives also take additional work on top of accompanying their husbands in fishing. One of the available work opportunities that feel familiar to them, therefore often done by women in coastal areas, is processing catches from larger-scale fishers who are able to ensure a more steady fish supply since they have larger boats, more sophisticated gears, and employ many fishers.

Despite working long hours and being paid low wages, having access to these types of jobs in coastal areas can be a lifesaver for women, especially when there is little or no catch at the household level to be processed. In general, female respondents interviewed in this study told the interviewer that the work arrangement is considered accessible for women. There are no specific requirements for them to be allowed to do the work, and they don't have to worry about being asked to perform skills unrelated to fishery or with which they are not familiar. They also don't have to provide collateral funds, and they get paid on the same day when the work is done. Especially for those with children, factors such as the location of the workstation being close to home and the flexibility in the time to start and finish work enable them to earn money while still taking care of their kids and households.

Gender-based task allocation among coastal communities is reinforced by the perception that certain works are better done by women or men. Fish processing, in particular, is perceived to be better done by women due to its proximity to the type of work undertaken by women at home. The study also finds that the lack of assistance technology and facilities to enable men and women to do certain work has been one of the underlying factors that reinforces this gender-based task allocation. For example, works involving activities of lifting heavy items (pulling the net, drying the processed fish) are better done by men, while in fact the use of assisting technology would enable men and women to do the work. Another example is the availability of an accessible public toilet on the boat near the fishing ground that will enable women to join the fishing trip with other male fishers. The study team found that in certain areas, for example, in Mentawai, there are socio-cultural factors that hinder women from undertaking the fishing trip; women are not allowed to undertake or join the fishing trip when they are menstruating due to the belief this can bring bad luck.

C.3. Women are in charge of managing the household finances, and in most cases, incomes earned by their husbands from the catches are not enough to cover all the household bills. While managing household finance could provide access to resources, in this case, women have the double burden of earning more money to cover the gap, along with their main responsibility for domestic works

From the interviews with coastal community members in six provinces, it is a common practice that women are given the responsibility to manage the finance and day-to-day needs of the household, allocating money for school fees, food, and other household needs, as well as when their husband ask money for cigarette, fuel, etc., (based on the request from their husband). The use of money outside this routine (especially when big spending is involved) will need approval from their husband. While this practice leads to an impression that women have access to financial resources at the household level, it can add a burden for women since, most of the time, the money is not sufficient to cover all the household needs, putting women responsible for covering the gap. Moreover, women have no control or making decisions to use the money for other purpose than daily needs (if there is an excess); they still have to get permission from their husbands.

Different practice of financial management is found in households with higher ⁸⁰income (when they can have a surplus to buy, not only primary needs), where husbands usually take control in managing and allocating the money, while women will be given a certain proportion to be managed. However, this is not a common practice that can be found in coastal households, especially among the SSF community, and

⁸⁰ This is arise from the interviews with few of male respondents reported to earn higher income than small fishers interviewed in this study. They reported to earn higher income from running a medium to big scale business related to marine resources (exporting pearl, lobsters – can earn more than 15mio per month), medium scale aquaculture, agriculture.

was identified only in a few interviews with middle to big-scale fishermen, fish farmers, and aquaculture entrepreneurs.

As women are in charge of managing the money at home, this often includes the responsibility of seeking a way out when the money earned from fishing is not enough to cover all household necessities. This often means women are pushed to undertake work outside the home, sometimes more than 1 job during the day. Other than their main roles as caretakers for all family members and chores at the household level, all women interviewed in this study, to some extent, are involved in various forms of work to earn money. In general, at the household level, women are responsible mainly for domestic tasks, ranging from caring for children, dropping and picking children up from school, cooking, cleaning the house, and doing the laundry and dishes. As in many places in Indonesia, socio-cultural norms in all study sites perceive women's main responsibilities to be in domestic areas. At the household level in a coastal community, these roles are reinforced every day since the fishing trip, which is done mostly by men, requires very long working hours. As a consequence, men are often not at home.

C.4 Women's contribution throughout the fishery value chain is underreported, which in turn causes their roles to be undervalued and excluded from relevant program assistance

In all FGDs and interviews conducted in this study, it is admitted by all community members and govt officials that women have a significant role in creating added value by processing and marketing the catches.

"If there is no fish processing, men's catches will be wasted when unsold or if it can be sold, will have lower value, compared to if it is processed by the women"

-FGD with fishermen in North Sumatera

As reported by women involved in fishery-related works in this study, normal days for women usually started around 5 AM to prepare meals for all family members going to work (fishing trip) and school. In Banten, when the harvesting season for *Lamis* (clams) arrives, sometimes women have to leave home around 2 AM and finish at 5 AM, and then take care of the house chores, preparing and dropping children at school. While waiting for the time to pick up kids from school (for those with kids), many are using their time to work, from catching clams, chopping, sorting fish, or cleaning other's houses. Often times, when doing side jobs like planting rice and farming (labour in ricefield, farm), the work is done together with the husband. Related to fishing trips, women are often involved in preparing (buying) fuels for the fishing trip, as well as repairing the net (only in certain study sites).

Beside their well-known roles in processing and marketing, women undertake many unpaid works throughout the fishery supply chain, even from the pre-harvesting stage (preparing meals, buying fuels, mending nets). However, since most of these works are done at the household level, these are often considered part of women's responsibilities as fishermen's wives to take care of the families and the households. This in turn, has led to the exclusion of women's work in fisheries in the national government census under fisheries-related employment (Fitriana, R., & Stacey, N. 2012)⁸¹. This study also found that

⁸¹ Fitriana, R., & Stacey, N. (2012). *The Role of Women in the Fishery Sector of Pantar Island, Indonesia*. Gender in Aquaculture and Fisheries: Moving The Agenda Forward. Asian Fisheries Science Special Issue, The Journal of Asian Fisheries Society Vol 25s, 159–175.

the government's official data is still lacking in reporting the proportion of women involved throughout the fishery supply chain.

Specifically related to fishery sector, the underrepresentation of women is also reflected in the ownership of KUSUKA⁸² (*Kartu Pelaku Usaha Kelautan dan Perikanan*). National data recapitulation on the ownership of KUSUKA shows there are only 10% women registered, with the lowest proportion as inter-port marketer, there are only 425 women or 13,3% from total 3,189 inter-port marketer registered (<https://kkp.go.id/setjen/PUG/infografis>, accessed August 09, 2023).

Table 5.7 Numbers of KUSUKA Disaggregated by Profession and Sex

Profession/Sex	Fishers	Inter-port Marketer	Marketer	Fish Farmer	Fish Processor	Salt Farmer
Female	19.832	425	25.482	56.403	45.959	3.020
Male	931.236	2.764	14.010	349.696	9.215	10.560

(Source: One data database Ministry of Marine Affairs and Fisheries, updated April 07, 2022)

Looking at the role of women in the fisher households and coastal community in this study and information from previous studies regarding the exclusion of women from being registered as fishers in the system, there is a high possibility that the proportion of women undertakes roles in the categories in the table above is underreported. As highlighted in the previous sections in this report, most women in fisher households undertake work in pre and post-harvesting, but they are often not acknowledged or registered as fishers and, therefore, excluded from KUSUKA.

Qualitative data and information collected in this study further inform that the official reported numbers do not reflect the actual situation in the field related to women's role in the fishery. From interviews and FGDs with women involved in fisheries in six provinces, there are only a few women reported to have KUSUKA, and many (around 80-90% of all female respondents in this study) have not heard about KUSUKA. In addition, another reason causing the exclusion is that even though they know about KUSUKA, they did not register themselves or are being registered by the fishery instructors because their husband already has KUSUKA, or they do not know how to register themselves. In conclusion, there are several factors identified in this study contributing to this issue:

- 1) Fisheries Instructors' understanding of the scope of targeted beneficiaries (who can be categorized as fishers) and rules on how many people in the same household can apply for KUSUKA (If the husband already registered, it is often assumed the wife will not be able to register). In addition to this, the wide scope of tasks and working areas leads to the inability of the instructors to provide assistance for out-of-reach individuals or groups, often causing women and vulnerable groups to be excluded.
- 2) Requirement for eligible beneficiaries to be registered in National ID card as fishers, farmers, or any category of business actors in fisheries while in Indonesia there is a wide practice of registering women as a housewife, especially when they work in informal sector. During the data collection, the study team found there are most of the women (around 80%) joining *Poklamsar* groups registered as housewives in their ID card. For cases like this, a reference letter (valid for 6 months)

⁸² Issued and implemented based on Ministry of Marine Affairs and Fisheries Regulation no 39/2017, KUSUKA is an identity card for business actors in Marine and Fishery sector, including those in small-scale fisheries (<https://kkp.go.id/setjen/satudata/artikel/5374-kusuka-kartu-pelaku-usaha-kelautan-dan-perikanan>). Only those registered in KUSUKA can have access to program and assistance provided by government for actors in Marine and Fishery sector. These program and assistance are ranging from provision of fishing gears, fish processing tools to trainings in making marine-based products.

will be issued by village government while they still need to process amending their ID status from the status of housewives to fishers/farmers/processors.

D. Gender-based violence and domestic abuse in general is estimated to be high among Coastal Community

Nationally, gender-based violence (GBV) remains a significant concern in Indonesia, with women and girls across various social and economic backgrounds being the most affected. Based on the data reported in *SIMFONI PPA*⁸³ (*Sistem Informasi Online Perlindungan Perempuan dan Anak/ Protection of Women and Children Online Information System*), from 2021 to 2024 shows an increasing trend, (total case in 2021, 2022, 2023 and 2024 are 23,964, 27,007, 29,102 and 32,158, see Annex 4 table 4.D.1 for the detail), with a very high proportion of cases occur towards women.

Among six provinces in WPPNRI 572, North Sumatera has consistently reported the highest number of violence cases from 2021 to 2024 (1390,1531,1681, 1573) followed by West Sumatera (774, 801, 1010, 1024, with Banten dan Aceh show a hike in case reported in reported cases (1234, 1089). Among districts/cities that are study sites, Bandar Lampung is reported to have the highest number of reported cases in 2024 (198), followed by Padang (123) and Banda Aceh (111) (see Annex 4 Table 4.D.5).

Interviews with community members in the coastal areas and the local government office of Women Empowerment and Child Protection indicate that there is a potentially high risk of gender-based violence occurring at the household and community levels in the coastal areas. Most of the women interviewed in this study explain that they never experienced abuse, but admit that conflict at the household level (between husband and wife) is very common, especially when they have no enough money to meet the household needs, and there is a possibility for physical violence to occur, as explained by one of the female respondents.

" (I think) it depends on the mistakes being done. If it is a big one, for sure there will be a slap, a fist. But Thank God there is no (incidence) like that in this area"

-FGD with Informal Female Worker in Nias Utara

On the other hand, qualitative information provided by local government staff in study sites emphasizes high prevalence of violence to occur in coastal community, with domestic abuse, physical and sexual abuse towards women and children as the most frequent cases of violence to occur. One of the factors mentioned to contribute the most is economic difficulty, in which economic pressure becomes a stressor, as illustrated in one of the stories told by a female respondent in Bengkulu.

(I) Have you ever experienced a conflict in your household?

(R)Yes, it is often

(I) What kind of conflict?

(R) Grumbling

(I) Who is grumbling?

(R) The housewives

(I) How about the husband?

⁸³ SIMFONI PPA is an application based system for documentation and reporting on violence against women and children that can be accessed by all service unit providing assistance for victims of violence at national, province, and district/city level. The development of SIMFONI PPA has a purpose as a media for documentation, monitoring, and evaluation on violence towards women and children in Indonesia.

(R) Just keep in silence, (he) gives IDR 200K, and it is not enough to pay this and that. (he) went for 1 week and bring home money around IDR 200K, exhausted and hungry. For sure IDR 200K will not be enough, child school tuition need to be paid, but he does not understand (when I grumble); (he said) I want to being more money too, but that's all my luck allow me to, and then (we) fight.

-FGD with Female Fishers in Bengkulu

Another factor being mentioned is the opportunity arises due to the nature of work in a fisher household, where parents are often forced to leave their children at home for the fishing trip. From the interview with local government staff, it is also mentioned that the lack of data has become one of the biggest challenges that is hindering efforts to prevent, monitor, and address the issue. While the development of SIMFONI PPA reflects the progressive efforts of the country to address the issue of violence, low awareness, and understanding of the issue both at the community level and the authorized is still prevalent. Efforts have been made to address gender-based violence through legal reforms and awareness campaigns, but challenges persist in implementation and cultural shifts. As is the case in other regions in Indonesia, conflicts at the household level are often considered as private or family matters that shouldn't be disclosed or intervened by external parties, even though there is violence involved.

As mentioned earlier, due to resource constraints, this study was not able to assess the magnitude of the issue in each province and provide a more general situation on gender-based violence. However, it is important for the project to have a follow-up assessment on this matter and arrange a safe and adequate system to deal with the potential risk of gender-based violence during program implementation.

V.4 The existing programs and assistance targeting women and vulnerable groups in coastal communities & the experience in accessing it

This study identified, in general, that there are two categories of programs and assistance received by coastal fishing households across study sites in six provinces. They are programs and assistance targeting coastal communities and the ones that are not specifically targeting coastal communities as their beneficiaries. The latter was not designed to target coastal communities, in particular women and other vulnerable groups, but its targeted beneficiaries and activities have intersected characteristics with the interests of certain groups in coastal communities.

4.1 Programs targeting coastal community

Most of the fishery-related program assistance received by coastal community members in this study are provided by the Government Office for Marine and Fisheries. As explained by relevant government officials and fishery instructors, program assistance targets businesses and working groups in fisheries, and individual fishers/farmers/marketers/processors are not eligible to receive the assistance if they are not members of local groups. According to the fishery instructors interviewed in this study, in general, four focus area of fisheries included in their scope of work related to assistance for community groups are farming, fishing, marketing, and processing. The most frequent assistance provided by government for community groups based on their category in focus area of fisheries are listed in the table below.

Table 5.8 Assistance Provided for Working Groups in Fisheries

Fisher	Marketer & Processor	Farmers
○ Vessel (outboard engine) ○ Net ○ (plug) Light ○ Fibre (cooler box) ○ Fishing gear ○ Life vest ○ Rope ○ Boat ○ Motor car to transport the catches ○ Fish dome ○ Fuel subsidies	○ Building for workstation (Rented & renovated) ○ Fridge ○ Fibre (cooler box) ○ Freezer ○ Cart ○ Water tank ○ Equipment for Processing (knives, plastic, basket, apron, container) ○ Equipment for packaging (plastic, vacuum sealer) ○ Trainings (making processed seafood, snacks, registering business license)	○ Seed ○ Feed ○ Equipment for farming

As men and women are working on different roles, the group is established, and the types of assistance received by both genders in groups reflect the differences. Men are centralized in fishing and farming groups, while women are in marketing and processing (The government offices used the term *Poklahsar*/kelompok pengolah dan pemasar or group of processors and marketers). The study team found that the way men and women grouped for most of the activities, usually following the gender-based task allocation, exists at the community level. For example, it was rare/ there were only very few of men registered in *Poklahsar* (almost none) across study sites, and the same goes for women, there were no fishing group registered with female members⁸⁴. However, the case is different for Mentawai (especially in Siberut), we found there are groups of women registered as fishers and received fishing aid⁸⁵.

To be able to access this assistance, it is required for fishers and farmers to join the local business/working group and register in KUSUKA. To register, a written application accompanied by an identity, a tax document (Nomor Pokok Wajib Pajak/NPWP card), and a reference letter from the village government have to be submitted to the district Office of Fisheries, assisted by a fisheries instructor. The fisheries instructors are also responsible for assisting in forming, coaching groups, and developing a proposal for assistance. One fisheries instructor is usually responsible for 1 district, and there is a high reliance on these instructors in collecting data on coastal community members and registering them in KUSUKA⁸⁶. This is one of the contributing factors causing many of the eligible fishers/farmers to not register and own the KUSUKA card. In addition to that, the study team found that most of the community members have distrusted the mechanism of applying for assistance since many proposals and feedback in the past have

⁸⁴ The process of selecting beneficiaries for the program or activities usually done by the government officer, assisted by the community leader in targeted area. The segregation for men and women to join certain training is usually determined by their roles, occupations, or characteristic of targeted area. For example, training for making snacks from sea products will be targeting women live in the coastal area, or those already run small business making food products.

⁸⁵ Based on data provided by district office of fisheries in Mentawai, during 2017 to 2023, there are groups of women registered in fishing category and received fishing aid in the form of long tail

⁸⁶ There are 5,700 fisheries instructors located across Indonesia, assisted by 514 office at district level and 139 technical implementation unit/ Unit Pelaksana Teknis (UPT) to input proposal for data collection into the module of KUSUKA (<https://kkp.go.id/setjen/satudata/artikel/5374-kusuka-kartu-pelaku-usaha-kelautan-dan-perikanan>).

never been addressed. According to the instructors interviewed, they often get questioned about the previous proposals from community members. Having very limited information, they cannot promise anything and try to explain that they have to wait. This has caused many to refuse to develop new proposals for government assistance. This is also confirmed by community members; they explain to the interviewers that they never expect government assistance to arrive in a timely manner.

In addition to all these programs, through KUSUKA, scholarship programs are also provided for family members (children) of coastal fishing households to continue higher education. On top of that, insurance for fishers is included for all fishers registered as the owner of the KUSUKA card. However, based on the report from community members, the local government only pays for a 1-year subscription, and the card owner has to pay by themselves to continue the subscription. This has been one of the challenges identified for community members to continue their subscription, especially in areas like Mentawai, where they have to cross the ocean and travel to Padang City to make the payment to an appointed bank.

Other programs identified targeting coastal communities are those delivered by local NGOs working on environmental issues. The most popular programs are related to mangrove restoration, where women are involved and get paid to plan the mangroves around the coastal areas. Other programs run by local NGOs not specifically working on environmental issues found in Aceh; it is a financial management program that has been running for 2 years, delivered by an NGO in collaboration with the Union for Small Fishermen. Another interesting program run by an NGO in Mentawai also targets the coastal community, focused on financial management practices through the establishment of community-based saving groups⁸⁷. The participants of the program are mostly women, aiming to develop the skills and habits of the community to save and manage their money by making priorities. This program, however, was implemented on another island (Siberut Island) in Mentawai and hasn't reached the community in this study site.

While the assistance program provided by the Office of Fisheries aims to improve well-being, especially in food security and economic empowerment of those in need among coastal community members, the way it is planned and implemented is found to have more focus on the existing business than targeting vulnerable groups. As mentioned before, assistance is provided only for community members joining local businesses/working groups and usually targeting businesses that are already run when applying for assistance. This mechanism often creates gaps for the most vulnerable groups, making program assistance less accessible to them. This is because many of the poorest, the most vulnerable groups live in remote areas and do not have access to join groups or information to do so. Therefore, they are most likely to be excluded. In particular, women, besides being often registered as housewives, making them ineligible for getting KUSUKA and having access to program assistance related to the fishery, have less access to information and any kind of channel to voice their aspirations. The latter has made them to be excluded and not counted in program and policy design.

On the other hand, many community members from coastal fishing households reported that the mechanism to provide assistance through groups was seen to be ineffective and benefited as expected. One of the fishers told the study team that when his group got a fishing boat, it ended up with no one willing to use it since there was confusion on how to share the income, cost, etc, from the fishing trip. This is strengthened by one of the heads of the fisher group in Nias, North Sumatera, who explained that based on his past experience, he needs to be careful in receiving assistance since it can create potential conflict among group members.

⁸⁷ The program was designed to target the indigenous community of Mentawai Island in Siberut. It aims to educate the beneficiaries to make financial priorities and create a financial pooling that can be used anytime in need (due to sickness, death).

“...(if) there was a conflict in the union...who got blamed? It must be the head of the group. That’s why I regret to receive that assistance in the past. Before, for many years, we never have conflict among us, I don’t want this group to experience problems just because the assistance, it creates polemic. So I refuse to accept it (the assistance) last time when they offer it, the risk is on the union.” (FGD with Fishermen in North Nias).

One important note taken by this study, based on the interviews with several local government staff from the Fishery office, is that most of the assistance provided for Fishers and coastal communities tends to be one to two times event, not inadequate in providing more intensive, continuous guidance. One of the officers in Banten highlighted, in the example of providing venture capital, the beneficiary will need guidance not only on steps in building a business but also to manage the finance and day-to-day operations. Limited resources have been hindering the existing program assistance to provide a comprehensive package.

4.2 Programs not specifically targeting coastal community

For programs that not target coastal community, there are 2 categories of programs reported have been received by coastal community members in this study:

- 1) **Programs relevant to the fisheries sector:** Program categorized under this category is usually delivered under certain themes where it has an intersection with the interests and needs of the coastal community. The Government Office for Child Protection and Women Empowerment at the district and provincial levels (Dinas Perlindungan Anak dan Pemberdayaan Perempuan/P3A) will have programs targeting women in their working area, where the themes of the program will be designed based on requests from community members. It was explained that most of the focus of the program for women is related to economic empowerment, ranging from training on cooking, making popular meals, and establishing a business, combined with educational material related to gender equality, child protection, and domestic violence). Since the coastal area is part of their working area, there are participants from the coastal communities identified during the delivery of the programs.

Other social assistance programs delivered by the government identified in a few areas are related to assistance for households experiencing tidal floods. Few respondents reported having received assistance in the form of staple food (rice), soap, and toothbrushes.

- 2) **Social assistance targeting poor households in general:** The other assistance program reported has been received by the community is Program Keluarga Harapan/ PKH or the Family Hope program. Targeting poor households, the assistance is provided in the form of cash transfers (around IDR 300K/month, transferred 3 monthly) and staple food (occasionally, not provided on a regular basis). There are assistance programs focused on financing a child’s education through Kartu Indonesia Pintar/KIP or smart Indonesian card (delivered every 6 months). Across study sites, not all respondents reported receiving these assistance programs.

The study notes a few things related to program delivery, access to information, and feedback mechanisms that could be improved to ensure women and vulnerable groups are included:

- a) Selection of time, location for activities, and arrangement for women & child-friendly venues during the program event. It is important to ensure women and other vulnerable groups have

access to program activities by paying more attention to the selection of time and location, as well as arrangement for specific needs at the venue (e.g., multimedia and methods are provided in the delivery of training materials for illiterate community), especially women with young kids and people with disability. This might require pre-assessment and grouping of attending participants based on their needs. Most of the activities held by the program are reported to consider friendly time arrangements for the targeted beneficiaries. In organizing training for women's groups, for example, the schedule is usually arranged from the morning to noon, when women have completed the domestic work like cooking, preparing and dropping kids to school, etc. However, it is still a rare practice to provide child-friendly space or assistance to look after the children while women join the activities.

- b) Lack of mechanism for channelling aspirations and feedback related to programs and assistance in fishery, especially for women who are often excluded from the regular hamlet or village community meetings. When being asked about aspiration channels, respondents mentioned several common channels; they are head of RT/Rukun Tetangga, hamlet, or through development planning meetings at the village level, also known as *musyawarah perencanaan pembangunan desa/ musrenbangdes*. Only a few, however, reported that they had accessed the channel to convey their aspirations or complaints. This study finds that even though almost all community members interviews had complaints and expressed dissatisfaction with the lack of response and assistance from the government to address challenges they have been facing, most of them either have no information about where to file or report their complaints or choose to keep it for themselves because they perceive the channel as not reliable. There is a widespread perception among community members in all study sites that there is no use in filing a complaint since it will not be addressed by the institutions and figures who should be held accountable.

There are few good practices identified across all study sites related to this matter. In Aceh, there is a mechanism for fisher women to participate and involve in decision making process. In Lampung, the Provincial Office for Marine Affairs and Fisheries provide channel for community to voice their aspirations through WhatsApp group and social media account dedicated for this purpose. The official government interviewed told the interviewer that response from community members is positive, reflected in many aspirations and complaints received, but they often failed to respond in timely manner due to limited resources.

VI. Recommendations

In summary, the proposed plan will focus on addressing issues on Gender Equality and Social Inclusion that are particularly related to:

1. Awareness and knowledge on climate change and its impact, sustainable practices in fishery, and livelihoods among women and other vulnerable groups.
2. Availability of disaggregated data by sex, roles in the SSF value chain, and other ocean economy sectors.
3. Acknowledgement of women's contribution to the fishery sector and access to KUSUKA as well as any government assistance, including access to market, credit, and financial instruments with fair rates.
4. Utilization of improved fishing and processing technologies to improve the livelihoods of women and other vulnerable groups and more research in the effort to drive innovations.
5. Access for women and other vulnerable groups to channel their aspirations and participate in decision-making and collective learning.

In addressing these issues, this report proposes several recommendations to strengthen five domains of adaptive capacity to the impacts of climate change. The recommendation will outline the proposed measures for each domain on the issues mentioned above. These recommendations will be developed into a Gender Action Plan. The design, implementation, monitoring, and evaluation of the proposed Gender Action Plan will apply the GESI twin-track approach, a method that combines GESI mainstreaming (GESI is an integral part of program stages, outputs, and outcomes) and targeted initiatives (address the specific issue by developing GESI-focused initiatives targeting women and other vulnerable groups) to integrate and promote GESI perspectives throughout the project, to advance the rights of the vulnerable and marginalized groups.⁸⁸ The identification of GESI mainstreaming and targeted initiatives can be found in the Gender Action Plan document.

Based on the definition developed by Cinner, J.E. et al. (2018)⁸⁹ adaptive capacity here is defined as the conditions that facilitate people to anticipate and respond to change, mitigate the consequences, recover, and take advantage of new opportunities that arise from climate change. There are five critical domains required to build adaptive capacity, they are assets, flexibility, social organizations, learning, and agency. These domains cannot stand alone and are interlinked to each other, meaning that to strengthen one domain, the availability or intervention towards other domains will be required. Please note that measures described under these 4 domains are more focused on building the adaptive capacity of women and other vulnerable groups, while other measures to create an enabling environment for GESI mainstreaming and specific interventions will also be described in this section

1) Assets that can be drawn or accessed in times of need,

Assets here refer to any resources to which the community, especially women and other vulnerable groups, have access. Assets can be available in the form of capital (financial), fishing gears, or fish

⁸⁸ The Fiscal Policy Agency. (2021). Guidelines for Mainstreaming Gender and Social Inclusion in Climate Change Projects: For GCF Project Proponents

⁸⁹ Cinner, J.E., Adger, W.N., Allison, E.H. et al. Building adaptive capacity to climate change in tropical coastal communities. (2018) *Nature Climate Change* 8, 117–123. <https://doi.org/10.1038/s41558-017-0065-x>

processing tools (technology and health care (service) and can be owned by individuals or exist as public goods. While the effort to build assets can focus on individuals (e.g., micro-credit loans) or community-scale public goods (e.g., information dissemination), it is important to pay attention and address gender equality and other gap in social dynamics to ensure the assets can be accessed by the most vulnerable.

The Gender Action Plan proposes several measures to increase the accessibility of assets for the most vulnerable groups identified:

- 1) The establishment of a community-based saving group targeting small-scale fisher households with the objective of facilitating the community in exercising practical financial management and increasing access of the members to save in time of need. Not only facilitating practices to save money, this measure will also provide capacity-building activities for women (who usually have a role as household financial managers) in financial management. This mechanism is expected to facilitate the community to exercise in making priorities, saving, and helping their members in their time of need. The establishment of a community-based saving group will also serve the social organization domain, which will be discussed in the social organization section.
- 2) Improving access to KUSUKA for Female Actors in SSF by increasing knowledge and awareness from the supply side (the service providers, which includes fishery instructors- please see number 3, local fishery office, and the appointed CBOs). Awareness raising and improvement of knowledge activities on demand side targeted women's community groups) will be done through fishery instructors and activities implemented through the appointed community-based organization working in each province. Increased access to KUSUKA is expected to lead to more accessible program assistance, insurance, market, and capital for Female SSF actors.
- 3) Strengthening the capability of agencies and organizations on the supply side, which will include mainly:
 - a. Fishery extension services in targeting & improving women-led MSMEs from Small Scale Fisheries (SSF) at the village level through support for additional human resources and regular capacity building. The existing fishery instructors work very closely with the coastal (fishery) community and have responsibilities for outreach, coaching, and assisting the community to establish a working group. However, there is no specific target for women's groups, and they usually cover large working areas, limiting them to provide more intensive assistance. It is proposed to strengthen their capability through additional human resources and capacity building. Strengthening fishery extension services proposed here aims to provide more resources for the instructors, with a focus on improving women-led MSMEs at the village level in improving their business, including assistance to link them to market and capital. This is a measure on the supply side or the service provider side to create an enabling environment for women to have more access to program assistance, market, and capital.
 - b. Community-based organizations (CBOs) appointed or grantees implementing activities throughout the project cycle. Considering the limited resources and programs available in the area focused on issues related to women's empowerment, it is important for the project to allocate resources to building the capacity of these local organizations on GESI. Measures like regular capacity-building activities for all staff, accessible resources to learning material, network, and forum with a focus on GESI are proposed to build local capacity, not only for the project purpose but also to empower local organizations in the long run. As described above, embedded regular capacity-building activities for all staff focused on building an understanding of GESI and how to implement its principles will be one of the mandatory requirements to be included in the proposal for selected grantees.

2) Flexibility in changing strategies by having various potential adaptation options

As organizations and individuals with more flexibility will have a better ability to adapt to climate impacts, this domain becomes a crucial part of adaptive capacity construction. Flexibility here refers to the ability to switch between adaptation strategies and have various potential adaptation options. Strengthening flexibility is expected to enable vulnerable groups to minimize losses or even take advantage of climate-related changes. As mentioned briefly in the previous section, it is important to note that job diversification is often not feasible when households are trapped in deep poverty due to the insurmountable costs and risks associated with trying something new. Therefore, intervention aims to build flexibility to shift occupations, primarily focusing on developing alternative income or subsistence livelihoods that are often implemented in conjunction with poverty alleviation intervention.

To strengthen this domain, the Gender Action Plan proposes for:

- 1) Appointing a community-based organization led by women or having a relevant program focusing on women empowerment in each province to manage and implement programs targeting vulnerable women in coastal communities, with a focus, especially on improving their access to more sustainable alternate livelihood options (can be different for each province, based on local commodity), knowledge and resources related to climate-resilient measures, protection of marine and coastal ecosystem. This will include the involvement of women in paid tasks within the existing rehabilitation programs of mangroves and seagrass. It will be mandatory for the appointed CBO to have specific regular capacity-building sessions during the project implementation for their staff on understanding and implementation of Gender Equality and Social Inclusion in the context of this project.
- 2) Production and Provision of fish processing technology that can reduce the burden of excessive working hours and load experienced by women, which will be executed through grant allocation for innovative research looking for ideas for the innovation, piloting, and development of the assisting technology.

To promote inclusive innovation aiming to improve the livelihoods and welfare of the coastal communities, especially women working in fishery, it is proposed to allocate grants for research focused on developing technology that can assist women in fish processing. The project needs to collaborate with universities and local NGOs in proposal selection and review to ensure the idea will answer the needs of women and vulnerable groups in coastal community members.

In the selection process, the requirements for the consultation and involvement of women throughout the research stages need to be made explicit and clear. This could include, for example, the use of alternative media adjusted by the needs of targeted vulnerable women in all relevant discussion sessions with community members (e.g., using visual and audio media to facilitate the delivery of information to groups with low literacy levels). New and improved technologies produced by the innovative research should be piloted, involving all relevant stakeholders from government, NGOs, universities, and targeted community groups (female fish processors), and focus on facilitating the needs of this women's group.

3) Social organizations

As explained by Cinner, JE (2018), “Social organization is the domain of adaptive capacity that captures the ways in which society is organized to enable (or inhibit) cooperation, collective action, and knowledge sharing.”

This domain involves aspects of individual, community, and organizational relationships (both formal and informal) and bonding social capital (trust and social cohesion) that play a key role in whether or not people will support each other in times of crisis or agree on coordinated action. The emerging evidence suggests some practical efforts to build social organization, which include the creation of interaction arenas where people can work together towards shared goals and build trust, which can occur through community meetings or other social events at the community level. Strengthening this domain is aligned with the existing mechanism developed by the Ministry of Marine and Fisheries. The ministry only delivers the assistance program to groups of fishers, fish processors, etc.; there is no scheme for individual assistance.

These measures are proposed as part of the Gender Action Plan to strengthen the domain:

- A. Strengthening the existing local working/business groups (that have been registered in the Ministry of Marine and Fisheries or regional fishery office) through capacity-building sessions to extend these groups' function as innovation platforms (self-organized social platforms to build trust, social cohesion, the platform for collective learning). The innovation platform will serve a function as a self-organized social platform to build trust and social cohesion, a platform for collective learning and channeling their voices. The innovation platform should be accessible for women not joining any existing working group but interested in learning from others who are already joining a group or running a business in the fishery or ocean field. This platform aims to facilitate not only capacity-building activities provided by fishery offices, NGOs, or private institutions but also to build social cohesion and trust through community events organized by and delivered for communities.

The establishment of a community-based saving group described in the domain of assets will also serve the purpose of strengthening this domain. As it is mentioned earlier, the proposed measures do not stand alone, they are interlinked to each other.

(4) Learning to recognize and respond to change

Domain Learning here is defined as the ability to generate, absorb, and process information related to climate change and options to adapt to the change, how to live with it, and how to manage uncertainty. Strengthening this domain can be done through facilitating access to formal education and informal forums for learning. It is highlighted that access to critical information related to climate change and its impacts is central to building this domain in coastal communities, as this will enable people to assess the potential risk, frame the issue, and decide on preventive measures.

The necessity to invest in peer-to-peer networks (known as communities of practice) is emphasized by Cinner JE et al. (2018), as it can facilitate people to share experiences of ecological surprises from other locations and knowledge systems. This, in turn, will facilitate learning and empowerment, where people can develop novel adaptation strategies.

Based on this understanding, the Gender Action Plan proposes for this measure to strengthen the domain:

1) The development of inclusive KIE materials on climate change and its impact on the coastal community and their livelihood. The material will include information on how it impacts men and women differently, the power dynamics in coastal communities, and what roles they can undertake to improve climate resilience based on previous research and scientific findings. It will also include more inclusive research dissemination materials for future research conducted by the program. The material will be adjusted to the needs of the local fisher community and fisher households (e.g., using local language or dialect, using visual and audio rather than written media to improve their understanding of the result of research on climate-related events, its impact on their livelihood, and climate-resilient measures).

This activity is proposed as a response to improving awareness and knowledge of fisherfolks and their household members on climate change, how it impacts men and women differently, its impacts on their livelihood, and required measures to improve climate resilience

Other than raising awareness and knowledge of women and other vulnerable groups on climate change and its impacts, the Gender Action Plan also proposes for capacity building activities on sustainable fisheries and protection of coastal ecosystem:

2) Capacity building to improve knowledge and skills on sustainable fisheries and protection of coastal ecosystems, including eco-tourism, targeting the most vulnerable groups in coastal communities, especially local fishers. The capacity-building activities will be arranged in series under sustainable fisheries and protection of coastal ecosystem topics, delivered in varied sessions. There will be sessions delivered for men and women separately and sessions both for men and women. The capacity building will take into account specific roles men and women play in the fishery value chain, for example, discussion and exercise on specific measures for women's groups related to the fact that women usually harvest shells and snails. These sessions will also integrate fundamental issues around GESI, including gender bias, Gender Based Violence (GBV), and how it impacts the power relationship between men and women in the community. Materials produced in no 1 activity will be utilized in this capacity-building activity.

(5) Agency to take action in dealing with the impact of climate change

The agency domain here refers to the ability of individuals or groups (collective) to have free choice in responding to environmental change. Agency is influenced by belief whether the individual or group has the ability to take action on and manage prospective situations and control events that impact them. Agency encompasses empowerment, motivation, and cognition and plays a vital role in activating the other domains of adaptive capacity. People will perceive to have no benefit or incentive to adapt to climate change unless they believe that their actions can prevent climate change from getting worse or improve their livelihood. Agency is the foundation for creating visions of alternative futures when changes in large scale are required.

Measures that have been mentioned above for the other 4 domains will also serve to strengthen Agency, in particular the development of inclusive KIE materials, capacity building, and the establishment of innovation platform that enable women and other vulnerable group to equip themselves with information,

lessons learned from their peers, and having access to channel their aspiration. All these measures are expected to improve awareness and how women and other vulnerable groups perceive climate change and encourage them to adapt and contribute to a larger purpose set with their communities.

As mentioned earlier, besides measures focused on building the adaptive capacity of women and other vulnerable groups, there will be other measures proposed to mainstream GESI in the program that will also work as a mechanism to create an enabling environment for building the adaptive capacity. These measures are:

- 1) Development and integration of specific modules for capacity-building activities across the program (including the BEAM on-granting windows for adaptation and mitigation) to strengthen knowledge and awareness of relevant government institutions on the needs of women and other vulnerable communities for more inclusive, sustainable, integrated protection-production & national blue investment. This will include a specific section on improving access for women, promoting a more inclusive institutional & regulatory framework on improving legal acknowledgment for women's role in fisheries, and access for women to amend their ID status and register in KUSUKA

This activity is an intervention from the supply side/from the service provider side required to facilitate the program developing adaptive capacity among women and other vulnerable groups

The GESI-related module will be treated as a default module, required to be integrated across capacity-building activities within the program, and cover issues related to GESI across provinces in WPP572 based on the assessment conducted or follow-up assessment for specific areas will be conducted. A detailed module will need to be developed by the program.

- 2) Develop a practical guideline on GESI-responsive approach for research grantees selection, research implementation & dissemination, capacity building activities

Another vital component of the program is the implementation of research. The program will need to ensure all the studies conducted will mainstream GESI throughout all stages, and as mentioned earlier there will be production of research-based learning materials targeting women and other vulnerable groups in SSF. To consistently ensure GESI mainstreaming is in place across research conducted during the program implementation, a practical guideline will need to be developed as a manual for a GESI-responsive research approach.

Several basic criteria for mainstreaming GESI in grantees selection, research implementation & dissemination, capacity building including a gender-balance proportion of research team and participants, representative of women and other vulnerable groups in participant groups, specific analysis for GESI issues, compliance on research ethical clearance to protect the vulnerable, reasonable accommodation for vulnerable groups to participate in dissemination. However, more detailed guidelines will be required for program implementation

To strengthen the availability of sex-disaggregated data for the use of Monitoring, Evaluation, and Learning, these measures will be put in place to ensure GESI mainstreaming in the data aspect:

- 3) The implementation of inclusive data recording and collection, disaggregated by sex, disabilities, roles in the fishery value chain, and other blue economy sectors across activities in the program, including research conducted during program implementation.
- 4) Conducting qualitative study measuring changes that occur as an impact of the project on gender equality, focused on looking at the benefit from the project gained by women and other vulnerable groups (how the project has an impact towards improved adaptive capacity to climate change).

This study is proposed to strengthen MEL data on the impact of the program, especially those related to GESI. The qualitative approach is specifically proposed since the indicators proposed for MEL data are most likely quantitative, as recommended in the GCF guidelines. Qualitative information gained from this study is expected to enrich the analysis related to desired and unexpected impact.

GENDER ACTION PLAN

Cross-cutting issues: from the findings of the Gender Assessment, the project identified a series of cross-cutting issues which are not necessarily limited to a specific Component, but are relevant to the project as a whole:

Activities	Indicators & Targets	Baseline	Timeline	Responsibilities	Costs
Improve accessibility of women and other disadvantaged groups to the GRM by: - Disseminating the redress grievance mechanism channels to women and other disadvantaged groups; - Proactively seek for feedback among women and those from disadvantaged groups; The GRM provides specific measures in case of receiving GBV or SEAH-related grievances (see Annex 06c).	Indicator: Number of times the GRM has been disseminated to communities, with emphasis on women and those from disadvantaged groups. Target: 5 sessions (once per year in Y1–Y5)	0 0	Throughout project implementation, at least once per year.	-Executing Entity	US\$ 47,674 - Costs for workshop/ meetings to facilitate local and national government and other stakeholders on AGM (Accountability Grievance Mechanism); once per year in Y1-Y5
Implement awareness-raising sessions on GRM's availability to receive and respond to SEAH and GBV-related grievances	Indicator: Number of sessions implemented to raise awareness on the GRMs availability to receive and respond to SEAH-related grievances.	0			US\$ 28,627 – Costs for Workshop training and awareness on SEAH (Sexual Exploitation, Abuse, and Harassment) case response; once per year in Y1, Y3, and Y5.

Activities	Indicators & Targets	Baseline	Timeline	Responsibilities	Costs
	Target: 3 sessions (once in Y1, Y3, and Y5)				
Provide capacity building to all project team members and contractors on SEAH and GBV prevention.	Indicator: Percentage of staff and contractors who have received capacity building on SEAH and GBV. Target: 100%	0			\$11,700 – Costs for internal Training workshop AGM, Gender, Enviromental Social Management Plan, and Enviromental Social Management Framework for KI staff & Consultants Partial cash grant from KI to CI Foundation for technical assistance including safeguards and gender.
Update continuously the reference list of public services/institutions where SEAH/GBV cases can be reported and where survivors can obtain support; d	Indicator: SEAH and GBV reference list updated at least once every 6 months. Target: list updated every 6 months	List included in the GRM Annex	Throughout project implementation, at least once every six months.		Staff time – KI's ES Safeguard and Gender. Roles: Provide technical support on environmental and social safeguards across project components by advising on safeguard instruments,

Activities	Indicators & Targets	Baseline	Timeline	Responsibilities	Costs
					conducting screenings, supporting ESMF implementation, delivering training, and ensuring compliance with safeguard and GEDSI requirements.
Include SEAH prohibitions and mitigation measures in procurement documents related to project implementation.	Indicator: Percentage of contracts and sub-grant agreements including clauses related to SEAH prohibitions and mitigation measures. Target: 100%	0	Throughout project implementation		No additional costs.
For capacity-building activities, adaptation measures will be provided as needed, such as scheduling them in times and venues accessible for women, providing compensation for travel costs, and providing childcare support services when needed.	Indicator: Percentage of training activities that consider adaptation measures to respond to women's overburden of unpaid care work. Target: all training activities (100%) that target communities consider adaptation	0			\$12,304 – Costs for childcare for workshop/ meetings attendees \$35,683 – Costs for expertise to respond to survivors of GBV/SEAH and gender grievances as a result of project interventions

Activities	Indicators & Targets	Baseline	Timeline	Responsibilities	Costs
	measures as needed.				

In addition to the above, the project will implement an inclusive approach in which both men and women are sensitized to gender equality. The project will also support working at the household level, rather than just working with men or women. This approach will prevent men from feeling displaced or excluded, at the same time that it opens space for women's participation. If necessary, the project can also provide separate spaces for women to have discussions and talk about topics they want to discuss among other women, and don't feel comfortable talking with men. Other relevant activities to mitigate the GBV risk are included in the different Components. Here is a summary (for details, please refer to the action plan tables developed for each Component):

Activity No.	Description	GBV Mitigation Element
Activity 1.1.3)	Development of inclusive KIE materials on climate change impacts	Includes information on gender bias, GBV, power dynamics in coastal communities
(Activity 1.1.3)	Capacity building on sustainable fisheries & coastal protection	Separate and joint sessions for men/women; integrates GBV awareness and prevention strategies
Activity 2.1.1)	Innovation platforms for collective learning and safe community engagement	Creates safe spaces for women to discuss issues (including GBV) without fear of exclusion
(Activity 2.1.1)	Appointment of women-led to implement programs	Mandatory capacity building for staff on Gender Equality, Social Inclusion, and GBV response
(Activity 2.1.1)	Community-based savings groups for women in small-scale fisher households	Reduces economic stressors that can lead to domestic violence; supports women as financial managers

Impact Statement: Improved climate resilient livelihood of coastal communities, in particular women and other vulnerable groups, to the negative impact of climate change by improving their knowledge, attitude, and practice towards sustainable livelihood in ecosystem protection and blue economy production model.

Component 1: Strengthen Enabling Conditions

Outcome 1 Statement: Improved legal, regulatory, and financial conditions that facilitate climate responsive protection and production in coastal & marine areas.

Outputs Statement (gender-related):

- 1) Improved knowledge and awareness on the needs of vulnerable groups in coastal community among project partners, governmental and non-governmental entities

Activities	Indicators & Targets	Baseline	Timeline	Responsibilities	Costs
	dissemination, capacity building 3) Percentage of GESI-responsive practices institutionalized or adopted by grantee organizations (e.g. gender-sensitive methodology, focus in solutions that are gender-responsive, inclusive recruitment, etc.). Target: At least 75% of grantees implementing research, dissemination, and capacity-building activities adopt GESI-sensitive policies, which may include, but are not limited to, affirmative measures to enhance women's participation in research teams and capacity-building initiatives; inclusive selection criteria for participants and beneficiaries; integration of gender and social inclusion considerations in research design and methodology; and the use of disaggregated data and intersectional analysis in reporting. (Note: grantees will be encouraged to provide commitment to mainstreaming gender in their organization's	3) 0			

Activities	Indicators & Targets	Baseline	Timeline	Responsibilities	Costs
	governance/rules. The grantees will be required to provide sex-disaggregated data and intersectional analysis in their reporting). . 4) Percentage of sub-grantees who received capacity building on how to mainstream gender into their proposals or their organization. Target: At least one representative of each sub-grantee organization received capacity building on how to mainstream gender into their proposals or their organization.	4) 0			
	Indicator: 2) % of studies conducted by Blue Halo S Program or its partner include specific section to discuss issue of women and other vulnerable groups in coastal community Target: At least 50% of study conducted by Blue Halo S or its partner include specific section discussing issue of women and other vulnerable groups in coastal community	0		-GESI Specialist -Executing Entity (KI), and Penabulu,	N/A

Activities	Indicators & Targets	Baseline	Timeline	Responsibilities	Costs
I.A2. Development and integration of a specific module for capacity building activities across the program (including BEAM on-granting windows) to strengthen knowledge and awareness of relevant government institutions on the needs of women and other vulnerable communities for more inclusive ecosystem protection and sustainable fishery practices ⁹¹ . (Activity 1.1.1)	Indicator: 1) % of training activities targeting relevant government institutions include specific material on issues related to women and other vulnerable groups in coastal community Target: 80% of of the training activities targeting relevant government institutions are gender sensitive and cover issues of social inclusions for coastal community.	0	The development of module will be started since initial stage. The implementation will be carried out until the end of the program (Timeline for collecting indicators data:) Year 1 Q1 and continued annually in Q4 until the end of the program (Y6))	-GESI Specialist -Executing Entity (KI)	1)Development of module-estimation USD 3,352*. GESI Specialist will oversee the implementation & delivery.
	Percentage of women and men from government institutions trained. Target: 50 percent of the participants in the training are women.	0			
	Indicator: 2) Number of new initiatives from relevant government institutions to improve female	0	(Timeline for collecting indicators data:) Started in Year 1 Q4 and	-GESI Specialist -Executing entity (KI)	N/A

⁹¹ This will include specific section on improving access for women, promoting more inclusive institutional & regulatory framework on improving legal acknowledgement for women's role in fisheries and access for women to amend their ID status and register in KUSUKA(Card for business actors in Maritime and Fisheries/ Kartu Pelaku Usaha Kelautan dan Perikanan). The GESI related module will be treated as a default module required to be integrated across capacity building activities within the program, and cover issues related to GESI across provinces in WPP572 based on the assessment conducted, or follow up assessment for specific area will be conducted. Detailed module will need to be developed by the program. This activity is an intervention from supply side/from service provider side required to facilitate the program developing adaptive capacity among women and other vulnerable groups)

Activities	Indicators & Targets	Baseline	Timeline	Responsibilities	Costs
	actors in fishery to access KUSUKA Target: At least 2 new initiative from relevant government institutions with the objective to address barriers of female actors in fishery to be registered in KUSUKA		continued annually in Q3 until the end of the program		
I.A3. The implementation of inclusive data recording and collection system, disaggregated by sex, , roles in fishery value chain and other blue economy sector across activities in the program, including research conducted during program implementation	Indicator: % of data collection activities across program that gather GESI-sensitive data, disaggregated by sex, disabilities, roles in fishery value chain and other blue economy sector Target: 80% of data collection activities across program activities (including research) disaggregated by sex, disabilities, roles in fishery value chain and other blue economy sector when relevant	0	In the whole cycle of the program (from beginning until the end of the program (Y6))	-Executing entity (KI) -GESI Specialist -Grantee Organizations	Included in the regular budget (This activity will be an integrated part of regular data collection or studies conducted, therefore there is no separated budget, and will need to adjust based on the scope of the data collection or research activities)
I.B. GESI Targeted Initiatives: I.B.1 The development of inclusive and gender-responsive KIE materials on climate change and its impact on coastal community	Indicator: 1) % of materials developed to be inclusive and gender-responsive. Target: 100 percent of materials targeting community audiences are designed to be inclusive and gender-responsive.	0	Year 1 Q4 until Year 6 Q4	-Executing entity (KI) -GESI specialist	Development of the first inclusive KIE material on the impact of climate change on vulnerable community livelihood Estimation USD 8,382*

Activities	Indicators & Targets	Baseline	Timeline	Responsibilities	Costs
and their livelihood ⁹² .					For the future studies across program activities should be included in the regular budget (integrated in the budget for studies of dissemination activities)
	Indicator: 2) Number of women and other vulnerable groups outreached by the inclusive KIE material delivery Target: 80% of beneficiaries from vulnerable groups outreached by the inclusive KIE material delivery*, and 5% of the beneficiaries will be female-headed households <i>* 80% of beneficiaries here is referring to 80% from total number of vulnerable community member in coastal area in the prioritized (project) areas/ being intervened. Targeted vulnerable groups here include: (as defined in the gender assessment report) 1) Small, poor, traditional fishers (male & female)- please see definitions set</i>	0			

⁹² The material will include information on how it impacts men and women differently and what roles they can undertake to improve climate resilience, based on previous research and scientific findings. It will also include more inclusive research dissemination materials for future research conducted by the program. The material will be adjusted with the needs of local fisher community and fisher households (e.g using local language or dialect, using visual and audio than written media to improve their understanding on the result of research on climate related events, its impact on their livelihood, and climate-resilient measures).

Activities	Indicators & Targets	Baseline	Timeline	Responsibilities	Costs
	<i>by govt regulation for this group</i> 2) Women working in informal sector (particularly in post-harvest) 3) Workers in fish farms, aquacultures 4) Female-elderly & female head of the household in coastal area 6) Poor coastal community groups involved in tourism sector – categorized as poor by local government, or the recipient of govt assistance				
I.B.2 Capacity building to improve knowledge and skills on sustainable fisheries and protection of coastal ecosystem, targeting the most vulnerable groups in coastal community, especially local fishers, including gender-responsive content (materials from point no 1.B.1 utilized to deliver this activity) ⁹³ .	Indicator: % of increase in knowledge among women and other vulnerable groups, including female headed households, on climate change, its impact, sustainable fisheries, and protection of coastal ecosystem Target: 30% of increase (in the first year) and 60% (at the end of the program) in knowledge among beneficiaries from women and other vulnerable groups, including 5% of female headed households, on climate change, its impact, sustainable fisheries, and protection of coastal	TBD (see footnote 94)	Year 1 Q2 Year 2 – Year Y5 (Q3)	- Executing entity - NGO/CSO/CBO	Estimated cost USD 24,482* Included as part of activities under 1.3

⁹³ The capacity building activities will be arranged in series under sustainable fisheries and protection of coastal ecosystem topic, delivered in varied sessions. There will be session delivered for men and women separately, and session both for men and women. Materials produced in no 1 activity will be utilized in this capacity building activity

Activities	Indicators & Targets	Baseline	Timeline	Responsibilities	Costs
	ecosystem ⁹⁴ . Baseline for this indicator will be collected at the start of implementation.				
I.B.3 Conduct a qualitative study measuring changes that occur as an impact of the project on gender equality, focused how the project has contributed to improved adaptive capacity to climate change for women, men and those from vulnerable groups.	Indicator: No. of qualitative studies completed to measure gender-transformative and/or gender-responsive results and impacts for vulnerable groups. Target: At least one qualitative study measuring gender-transformative and/or gender-responsive results and impacts for vulnerable groups.	0	Year 6 Q2	-GESI Specialist -Research Organization -Executing entity (KI)	Estimated cost USD 149,008* (for six provinces) Included as part of MEL Plan

*The total amount of the GEDSI Component 1 Consultancy is USD 188,577 which is distributed within the different activities.

Component 2: Locally Led Climate Action + Investment Readiness

Outcome 2 Statement: Improved condition and extent of coastal ecosystems in WPP572 resulting in reduced GHG emissions

Outputs statement:

- 1) Increased in the number of event/program/assistance targeting women and other vulnerable coastal community groups for sustainable livelihood
- 2) Increased in the number/percentage of women and other vulnerable groups provided with assistance
- 3) Assisting technology for fish processing is developed and utilized by local community, in particular women and other vulnerable groups

⁹⁴ There will be pre and post assessment, measuring level of knowledge and awareness among participant of capacity building activities. For women and other vulnerable groups, the assessment method need to be developed based on their specific needs, combining methods to create more inclusive setting, not only relying on single method or written assessment (e.g, written assessment, observation, interview).

Activities	Indicators & Targets	Baseline	Timeline	Responsibilities	Costs
Crosscutting for Component 2 subgrantees Provide GESI training and technical support to all Component 2 subgrantees and include GESI requirements in grant agreements, implementation plans, monitoring, and reporting.	Percentage of subgrantees receiving GESI training and technical support. Percentage of approved subgrants with relevant GESI actions, indicators, responsibilities, and budgets. Percentage of subgrants reporting disaggregated beneficiary data.	0	Year 1-year 5	Executing Entity -GESI and safeguards specialists	Included as part of the budget for Component 2.
2. A. GESI Mainstreaming: 2.A.1 Strengthening the existing local working/business groups (that have been registered in Ministry of Marine and Fisheries or regional fishery office) through capacity building sessions to extend these groups function as innovation platforms (self-organized social platform to build trust, social cohesion, platform for collective learning) ⁹⁵	Indicator: % of beneficiaries from women and other vulnerable groups participate in community activities organized by the innovation platform Target: 50% of beneficiaries from women and other vulnerable groups, including 5% of female headed household, participate in community activities organized by the innovation platform	0	Year 1-year 6 (Timeline for collecting indicators data:) Year 1 Q4 Continued annually until Year 6 in Q4	-Executing entity -Grantee organizations -GESI Specialist	Included as part of the Call for Proposal - activities under C2.1

⁹⁵ The innovation platform will serve a function as a self-organized social platform to build trust, social cohesion, platform for collective learning, and channeling their voices. Innovation platform should be accessible for women not joining any working group but interested to learn from other who already joining group or running a business in

Activities	Indicators & Targets	Baseline	Timeline	Responsibilities	Costs
All sub-grantees under Component 2 will be required to collect sex-disaggregated baseline data and monitor, and report sex-disaggregated data.	Percentage of sub-grantees contractually required to collect sex-disaggregated data. 100 percent of the subgrantees under Component 2 are contractually require to collect and report sex-disaggregated data.				
2.B GESI Targeted Initiatives: 2.B.1 (BEAM) Grant allocated for innovative research looking for ideas to improve fish processing with technology that can reduce burden of excessive working hours and load experienced by women ⁹⁶	Indicator: 1) Number of innovative technologies developed to assist women in fish processing Target: At least 3 distinct prototypes addressing different stages of fish processing (e.g., automated sorting & washing machine, controlled	0	Year 1 Q4 (Timeline for collecting indicators data:) Year 2 Q3	-Executing entity -Grantee Organizations -GESI Specialist	Included as part of the Call for Proposal-Activities under C2.1

fishery or ocean-related. This platform aim to facilitate not only capacity building activities provided by fishery office, NGOs, or private institutions, but also to build social cohesion and trust through community events, organized by and delivered for communities.

⁹⁶ To promote inclusive innovation aiming to improve livelihood and welfare of coastal community, especially women working in fishery, it is proposed to allocate grant for research focus on developing technology that can assist women in fish processing. The project needs to collaborate with universities and local NGOs in proposal selection and review to ensure the idea will answer the needs of women and vulnerable groups in coastal community members.

In the selection process, requirement on the consultation and involvement of women throughout the research stages need to be made explicit and clear. This could include, for example, the use of alternative media adjusted by the needs of targeted vulnerable women in all relevant discussion sessions with community members (e.g using visual and audio media to facilitate the delivery of information to groups with low literacy level). New and improved technologies produced by the innovative research should be piloted, involving all relevant stakeholders

Activities	Indicators & Targets	Baseline	Timeline	Responsibilities	Costs
	smoking unit, and modular drying rack system).				
	Indicator: 2) % of reduction in fish processing time by men and women through the use of innovative technology in fish processing Target: 20% reduction of fish processing time spent by women and men.	TBD Rationale: Based on GEDSI analysis, it is identified that one of the work in fish processing that can be assisted by technology is smoking/drying. Assuming that the assisting technology developed to do this work, it will save the time usually spent for this work, estimated roughly 20% (sun-drying fish can take 12-24 hours from arranging the fish to collect the dried fish, with the help of technology/machine, it can reduce the time to 6-12 hours for the drying process only. The estimation 20% comes from the assumption that while waiting for the fish to dry, women usually work on other tasks, and the use of technology can reduce around 2-3 hours for arranging & collect the fish, the risk of failure	(Timeline for collecting indicators data:) Year 3 Q4 -Year 6 Q4	-Executing entity -Grantee Organizations (potentially using the same organization who is doing the research under 2.B.1) -GESI Specialist	Included in the regular budget for MEL

from government, NGOs, universities, targeted community groups (female fish processors), and focus on facilitating the needs of this women's group.

Activities	Indicators & Targets	Baseline	Timeline	Responsibilities	Costs
		due to climate-related event			
2.B.2 Strengthening the capability of fishery extension services ⁹⁷ in targeting & improving women-led MSMEs from Small Scale Fisheries (SSF) at village level through support for additional human resources and regular capacity building. Specific capacity building needs will be further identified during project implementation in order to better tailor the contents to the needs of women-led MSMEs.	Indicator: 1) Number of women-led MSMEs from SSF at village level provided with any kind of assistance by the fishery instructor Target: 6 women-led MSMEs ⁹⁸ from SSF are provided with assistance by the fishery instructor per year	0	Year 1 Q2- Year 6 (Timeline for collecting indicators data:) Year 1 Q4 – Year 6 Q4	-Executing entity -Grantee Organizations -Relevant government partner (Fishery Instructor under MMAF)	Included as part of the Call for Proposal-activities under C2.1
	Indicator: 2) % of targeted beneficiaries from female fisher, fish processor groups assisted to register in KUSUKA Target: 50% of targeted beneficiaries from female fisher, fish processor groups assisted to register	0	(Timeline for collecting indicators data:) Year 1 Q4 – Year 6 Q4	-Executing entity -Grantee Organizations -Relevant government partner (Fishery Instructor under MMAF)	Included as part of the Call for Proposal-activities under C2.1

⁹⁷ The existing fishery instructors work very close with coastal (fishery) community, and have responsibilities in outreaching, coaching, and assisting community to establish working group. However, there is no specific target for women's group and they usually cover large working area, limiting them to provide more intensive assistance. It is proposed to strengthen their capability through additional human resources and capacity building. Strengthening fishery extension services proposed here aiming to provide more resources for the instructors, with focus on improving women-led MSMEs at village level in improving their business, including assistance to link them to market and capital. Improving awareness, knowledge, as well as access of targeted women's groups to KUSUKA will be included in fishery instructor scope of work..This is a measure on the supply side or the service provider side, to create enabling environment for women to have more access to program assistance, market and capital.

⁹⁸ Indonesia as a country does not have a definition of what is considered to be a women-led MSMEs; therefore, for this project, the 2X Criteria definition will be adopted and adapted as needed for the context, before launching the call for proposals: <https://www.2xchallenge.org/2xcriteria>. These criteria include definitions that consider ownership by women, women in leadership positions, participation of women as employees, and/or inclusion of women in the supply chain.

Activities	Indicators & Targets	Baseline	Timeline	Responsibilities	Costs
	in KUSUKA at the end of the project				
2.B.3. Appointing a community-based organization led by women/ working with women/women's organization in each province to manage and implement programs targeting vulnerable women in coastal community, with focus especially in improving their access to more sustainable alternate livelihood options , knowledge and resources related to climate-resilient measures, protection of marine and coastal ecosystem	Indicator: % of female beneficiaries from vulnerable coastal community participate in sustainable livelihood program delivered by the appointed community-based organization Target: 50% of female beneficiaries from vulnerable coastal community, including 5% female headed household, participate in sustainable livelihood.	0	Year 1 Q1 (program implementation carried out until the end of the program) Timeline for collecting indicators data:) Y1 Q4 - Y6 Q4	-Executing entity -Grantee Organizations -Technical staff in MEL	Included as part of the Call for Proposal-activities under C2.1 & C2.2
2.B.4. The establishment of community based saving group targeting small-scale fisher households with the objective to facilitate community in	Indicator: 1) number of community based saving group established Target: At least 1 community based saving group established in each province	0	Year 2 Q1 – Y6 (Timeline for collecting indicators data:) Year2 Q3 Year3 Q4 - Year6 Q4	Executing entity -Grantee organizations -GESI Specialist	Included as part of the Call for Proposal-activities under C2.1

Activities	Indicators & Targets	Baseline	Timeline	Responsibilities	Costs
exercising practical financial management and to increase access of the members to saving in the time of need. Not only facilitating practices to save money, this measure will be provided with capacity building activities for women (who usually have a role as household financial manager) on financial management ⁹⁹ .	Indicator: 2) % of female beneficiaries from SSF households participate in community based saving group Target: 20% of female beneficiaries from SSF households, including 5% of female headed household, participate in community based saving group	0	Timeline for collecting indicators data:) Year 2 Q3 Year 3 Q4 – Year 6 Q4	-Executing entity -Grantee organizations -GESI Specialist	Included as part of the Call for Proposal-activities under C2.1
	Indicator: (qualitative) 3) Good practice from female members of saving group (from SSF household) in financial management practice documented (Qualitative indicators will be developed for case study measuring the good practices-please see in the brief below) Target: female members of saving group (from SSF household) can	No good practices identified yet.	(Timeline for collecting indicators data:) Year 3-Year 6 Q4	Executing entity -Grantee organizations -GESI Specialist	Included as part of the Call for Proposal-activities under C.2.1

⁹⁹ This measure proposed with the objective to facilitate community in exercising practical financial management and to increase access of the members to saving in the time of need. Not only facilitating practices to save money, this measure will be provided with training activities for women (who usually have a role as household financial manager) on financial management. This mechanism is expected to facilitate community to exercise in making priorities, saving, and helping their members in the time of need.

Activities	Indicators & Targets	Baseline	Timeline	Responsibilities	Costs
	practice saving, prioritizing, and case for the use of fund in emergency/time in need 4) Percentage of savings group members who report using their savings for climate-resilient investments Target: At least 60% by project end, including 5% from female headed household 5) Percentage of community members demonstrate improved understanding of climate-related risks and apply this knowledge in financial decision-making (e.g., prioritizing savings for adaptation needs). Target: 70% of literacy training participants can articulate climate-related risks and actions taken 6) Women and marginalized group members express increased confidence and influence in household and	0 TBD (baseline information to be collected upon the setup of the saving groups) TBD (baseline information to be			

Activities	Indicators & Targets	Baseline	Timeline	Responsibilities	Costs
	group-level financial planning related to climate adaptation. Means of Verification: Self-assessment tools, participatory storytelling, gender outcome journals Target: Reported increase in perceived agency in at least 50% of women and vulnerable groups beneficiaries, including 5% of female headed households.	collected upon the setup of the saving groups)			
2.B.4. Conduct targeted outreach and proposal-development support for women-led groups, community organizations, small enterprises, persons with disabilities, and other underserved applicants.	Number of targeted outreach and proposal-support activities conducted; percentage of applications from women-led or women-representative organizations; participation tracked by sex and relevant social groups.	To be established during the first proposal call	Each grant cycle	KI PMU, GESI Specialist, grant-management team, and technical partners	Included in outreach, technical assistance, and grant-management costs

These additional consultancies will be hired for Component 2:

Consultancy	Purpose	Amount (USD)
GEDSI Grantee Screening Consultant	Conduct GEDSI criteria screening for all subgrantees	65,448
GEDSI Policy	Develop GEDSI policy and technical guidance for project implementation, and compile final reports on gender and inclusion	31,979

There are also trainings for grantees under Component 2 on Safeguard and Grant Management capacity buildings for a total of USD 302,694.

The whole overall of this plan the Executing Entity will also hire dedicated GEDSI staff. KI will have a full-time ES & Safeguards Coordinator All these positions will be supporting GEDSI related activities, the total amount of these positions is USD 563,451.

Gender Action Plan costs will be included in the Project budget, annual work plans, contracts, and relevant subgrant budgets. Eligible costs include GESI staffing, applicant outreach, accessibility support, training, consultation, data collection, monitoring, studies, grievance outreach, translation, childcare or other participation support where appropriate, and corrective actions.

Finally, GAP implementation will be monitored through Project reports, subgrant reports, site visits, stakeholder feedback, grievance records, and sex-disaggregated beneficiary data. The PMU will review progress at least annually and update actions, targets, or resources where gaps are identified. Reporting will include participation, access to benefits, women-led applicants and grantees, livelihood outcomes, decision-making roles, SEAH/GBV training, grievances, and corrective actions.

Gender Action Plan (GAP) for Blue Halo S (Brief)

In general, the proposed plan will focus on addressing issues on Gender Equality and Social Inclusion that are particularly related to:

- 1) Awareness and knowledge of climate change and its impact, sustainable practices in fishery, and livelihoods among women and other vulnerable groups.
- 2) Availability of disaggregated data by sex, roles in the SSF value chain, and other ocean economy sectors.
- 3) Acknowledgement of women's contribution to the fishery and access to KUSUKA as well as any government assistance, including access to market, credit, and financial instruments with a fair rate.
- 4) Utilization of improved fishing and processing technologies to improve the livelihood of women and other vulnerable groups and more research in the effort to drive innovations.
- 5) Access for women and other vulnerable groups to channel their aspirations and participate in decision-making and collective learning.

In addressing these issues, the GAP proposes to strengthen five domains of adaptive capacity to the impacts of climate change. The design, implementation, monitoring, and evaluation of the proposed Gender Action Plan will apply the GESI twin-track approach, a method that combines GESI mainstreaming (GESI is an integral part of program stages, outputs, and outcomes) and targeted initiatives (address the specific issue by developing GESI-focused initiatives targeting women and other vulnerable groups) to integrate and promote GESI perspectives throughout the project, to advance the rights of the vulnerable and marginalized groups¹⁰⁰.

Based on the definition developed by Cinner, J.E. et al. (2018)¹⁰¹ adaptive capacity here is defined as the conditions that facilitate people to anticipate and respond to change, mitigate the consequences, recover, and take advantage of new opportunities that arise from climate change. There are five critical domains required to build adaptive capacity, they are assets, flexibility, social organizations, learning, and agency. These domains cannot stand alone and are interlinked to each other, meaning that to strengthen one domain, the availability or intervention towards other domains will be required.

While measures described under these five domains are more focused on building adaptive capacity of women and other vulnerable groups, other measures to create enabling environment for GESI mainstreaming and specific interventions will be necessary to ensure gender equality takes place. The Project will integrate gender equality and social inclusion into subgrant outreach, screening, appraisal, contracting, implementation, monitoring, and reporting. Applicants will identify barriers affecting women and vulnerable groups and include practical actions, indicators, responsibilities, and budgets to address them. Engagement methods will also be adapted to support their meaningful participation.

1. Assets that can be drawn or accessed in times of need,

Assets here is referring to any resources to which community, especially women and other vulnerable groups, have access to. Assets can be available in the form of capital (financial), fishing gears or fish

¹⁰⁰ The Fiscal Policy Agency. (2021). Guidelines for Mainstreaming Gender and Social Inclusion in Climate Change Projects: For GCF Project Proponents

¹⁰¹ Cinner, J.E., Adger, W.N., Allison, E.H. *et al.* Building adaptive capacity to climate change in tropical coastal communities. (2018) *Nature Climate Change* 8, 117–123. <https://doi.org/10.1038/s41558-017-0065-x>

processing tools (technology, and health care (service), and can be owned by individual or exist as public goods.

The Gender Action Plan proposes several measures to increase the accessibility of assets for the most vulnerable groups identified.

1) The establishment of a community-based saving group targeting small-scale fisher households with the objective of facilitating the community in exercising practical financial management and increasing access of the members to save in time of need.

The establishment of a community-based saving group will also serve the social organization domain, which will be discussed in the social organization section.

Case studies will be developed and utilized to assess good practices in financial management from female members of the savings group (from SSF households). The case study will describe the qualitative indicators described below, showing the positive impacts the community-based saving group has at the household and community level, along with challenges and unintended consequences during the implementation, for lessons learned at the community and project levels. In general, the case study will need to look at these for the indication of good practices (further details need to be developed for project delivery, monitoring, and evaluation): practices in setting aside money for saving on a regular basis, making regular (daily, weekly, monthly) financial planning & priorities, keeping a record of income and expenditure of the household, attendance in training or saving group meetings, increase in the practices of accessing health services, registering school-aged children among the members of community based saving group. The case study will also need to look at challenges faced at household and community level to keep the saving group running and benefiting the members, especially women who are often managing household finance.

2) Improving access to KUSUKA for Female Actors in SSF, by increasing knowledge and awareness from supply side (the service providers, which includes fishery instructors-please see number 3, local fishery office), and it is expected to lead to more accessible program assistance, insurance, market and capital for Female SSF actors.

3) Strengthening the capability of agencies and organizations on the supply side, which will include mainly:

- c. Fishery extension services in targeting & improving women-led MSMEs from Small Scale Fisheries (SSF) at the village level through support for additional human resources and regular capacity-building. This is a measure on the supply side or the service provider side to create an enabling environment for women to have more access to program assistance, market, and capital.
- d. Community Based Organizations (CBOs) appointed or grantees implementing activities throughout the project cycle. Measures like regular capacity-building activities for all staff, accessible resources to learning material, network, and forum with a focus on GESI are proposed to build local capacity, not only for the project purpose but also to empower local organizations in the long run. As described above, embedded regular capacity-building activities for all staff focused on building an understanding of GESI and how to

implement its principles will be one of the mandatory requirements to be included in the proposal for selected grantees.

The existing fishery instructors work very closely with the coastal (fishery) community and have responsibilities in outreach, coaching, and assisting the community to establish a working group. However, there is no specific target for women's groups, and they usually cover large working areas, limiting them to provide more intensive assistance. Strengthening fishery extension services proposed here aiming to provide more resources for the instructors, with focus on improving women-led MSMEs at village level in improving their business, including assistance to link them to market and capital. This is a measure on the supply side or the service provider side to create an enabling environment for women to have more access to program assistance, market, and capital.

2. Flexibility in changing strategies by having various potential adaptation options

Flexibility here refers to the ability to switch between adaptation strategies and have various potential adaptation options. Strengthening flexibility is expected to enable vulnerable groups to minimize losses or even take advantage of climate-related changes.

To strengthen this domain, the Gender Action Plan proposes for:

1) Appointing a community-based organization led by women or having a relevant program focused on women empowerment in each province to manage and implement programs targeting vulnerable women in coastal communities, with a focus, especially on improving their access to more sustainable alternate livelihood options (can be different for each province, based on local commodity), knowledge and resources related to climate-resilient measures, protection of marine and coastal ecosystem. This will include the involvement of women in paid tasks within the existing rehabilitation programs of mangroves and seagrass. It will be mandatory for the appointed CBO to have specific regular capacity-building sessions during the project implementation for their staff on understanding and implementation of Gender Equality and Social Inclusion in the context of this project.

2) Production and Provision of fish processing technology that can reduce the burden of excessive working hours and load experienced by women, which will be executed through grant allocation for innovative research looking for ideas for the innovation, piloting, and development of the assisting technology.

New and improved technologies produced by the innovative research should be piloted, involving all relevant stakeholders from government, NGOs, universities, and targeted community groups (female fish processors), and focus on facilitating the needs of this women's group.

3. Social organizations

As explained by Cinner, JE (2018), "Social organization is the domain of adaptive capacity that captures the ways in which society is organized to enable (or inhibit) cooperation, collective action, and knowledge sharing." These measures are proposed as part of the Gender Action Plan to strengthen the domain:

Strengthening the existing local working/business groups (that have been registered in the Ministry of Marine and Fisheries or regional fishery office) through capacity-building sessions to extend these groups' function as innovation platforms (self-organized social platform to build trust, social cohesion, platforms for collective learning).

The innovation platform will serve a function as a self-organized social platform to build trust and social cohesion, a platform for collective learning and channeling their voices. The innovation platform will also serve a function as an open forum at the community level; there will be activities accessible for women not joining any existing working group but interested in learning from others who are already joining a group or are running a business in the fishery or ocean related.

The establishment of a community-based saving group described in the domain of assets will also serve the purpose of strengthening this domain.

4. Learning to recognize and respond to change

Domain Learning here is defined as the ability to generate, absorb, and process information related to climate change and options to adapt towards the change, how to live with, and manage uncertainty.

It is highlighted that access to critical information related to climate change and its impacts is central to building this domain in coastal communities, as this will enable people to assess the potential risk, frame the issue, and decide on preventive measures.

Based on this understanding, the Gender Action Plan proposes for this measure to strengthen the domain:

- 1) The development of inclusive KIE materials** on climate change and its impact on the coastal community and their livelihood. The material will include information on how it impacts men and women differently, power dynamics in coastal communities, and what roles they can undertake to improve climate resilience based on previous research and scientific findings.

It will also include more inclusive research dissemination materials for future research conducted by the program. The material will be adjusted to the needs of the local fisher community and fisher households (e.g., using local language or dialect, using visual and audio rather than written media to improve their understanding of the result of research on climate-related events, its impact on their livelihood, and climate-resilient measures). This activity is proposed as a response for improving awareness and knowledge of fisherfolks and their household members on climate change, how it impacts men and women differently, its impacts on their livelihood, and required measures to improve climate resilience

- 2) Capacity building to improve knowledge and skills on sustainable fisheries and protection of coastal ecosystems, including eco-tourism, targeting the most vulnerable groups in coastal communities, especially local fishers.** The capacity-building activities will be arranged in series under sustainable fisheries and protection of coastal ecosystem topics, delivered in varied sessions. There will be sessions delivered for men and women

separately, and sessions both for men and women. These sessions will also integrate fundamental issues around GESI, including gender bias, Gender Based (GBV), and how it impacts the power relationship between men and women in the community. Materials produced in no 1 activity will be utilized in this capacity-building activity.

6. Agency to take action in dealing with the impact of climate change

The agency domain here refers to the ability of individuals or groups (collective) to have free choice in responding to environmental change. Agency is influenced by belief whether the individual or group has the ability to take action on and manage prospective situations and control events that impact them. Measures that have been mentioned above for the other 4 domains will also serve to strengthen Agency, in particular the development of inclusive KIE materials, capacity building, the establishment of innovation platform that enables women and other vulnerable groups to equip themselves with information, lessons learned from their peers, and having access to channel their aspiration. All these measures are expected to improve awareness and how women and other vulnerable groups perceive climate change and encourage them to adapt and contribute to a larger purpose set with their communities.

Besides measures focused on building the adaptive capacity of women and other vulnerable groups, there will be other measures proposed to mainstream GESI in the program that will also work as a mechanism to create an enabling environment for building the adaptive capacity. These measures are:

- 1) Development and integration of specific modules for capacity-building activities across the program (including the BEAM on-granting windows)** to strengthen knowledge and awareness of relevant government institutions on the needs of women and other vulnerable communities for more inclusive sustainable, integrated protection-production & national blue investment

This activity is an intervention from the supply side/from the service provider side required to facilitate the program's development of adaptive capacity among women and other vulnerable groups. The GESI-related module will be treated as a default module, required to be integrated across capacity-building activities within the program, and cover issues related to GESI across provinces in WPP572 based on the assessment conducted or follow-up assessment for specific areas will be conducted. A detailed module will need to be developed by the program.

- 2) Develop a practical guideline on GESI-responsive approach** for research grantees selection, research implementation & dissemination, capacity building activities
- 3) The implementation of inclusive data recording and collection**, disaggregated by sex, disabilities, roles in the fishery value chain, and other blue economy sectors across activities in the program, including research conducted during program implementation
- 4) Conducting qualitative study measuring changes occur as an impact of the project on gender equality**, focused on looking at the benefit from the project gained by women and other vulnerable groups (how the project has an impact towards improved adaptive capacity to climate change). This study is proposed to strengthen MEL data on the impact of the program, especially those related to GESI. The qualitative approach is specifically proposed since the indicators proposed for MEL data are most likely quantitative, as recommended in the GCF guidelines.

Qualitative information gained from this study is expected to enrich the analysis related to desire and unexpected impact.

7. Executing Arrangements for the GAP: KI is responsible of implementing all the activities included in the GAP and for the application of GCF gender policy requirements . To do this, staff focused on safeguards and gender were included in the PMU. The Safeguards and M&E Manager and the Safeguards and M&E Coordinator to be hired to implement this GAP.

CI in its role as AE will flow down GCF and CI obligations to the Executing Entity will conduct oversight to confirm adherence to the GAP and compliance with GCF gender policy compliance.

Appendix 1: Instruments for Data Collection

(please find in a separate document)

Appendix 2: List of Reviewed Literature

NO	TYPE OF DOCUMENT/ TITLE	AUTHOR/ YEAR
A. REGULATIONS, POLICY, GUIDELINE		
1	Resource Guide on Gender and Climate Change	United Nations Development Programme (UNDP), 2009
2	Technical Guideline: Gender-Responsive Climate Change Adaptation at Regional level	Ministry of Women Empowerment and Child Protection, 2015
3	Blue Economy Concept Paper	UN Environment Programme (UNEP), 2016
4	Decree of Minister of Maritime Affairs and Fisheries no 76/2016	Minister of Maritime Affairs and Fisheries, 2016
5	Law no 7/2016 on Protection and Empowerment of Fishers, Fish Farmers, and Salt farmers <i>*this regulation has been replaced by Perpu no 2/2019</i>	Ministry of Marine Affairs, 2016
6	Ministry of Marine Affairs and Fisheries Regulation No. 39/2017 on KUSUKA	Ministry of Marine Affairs and Fisheries Regulation, 2017
7	Ministry of Marine Affairs and Fisheries Regulation No. 42/2019 on KUSUKA (reviewing Regulation No. 39/2017)	Ministry of Marine Affairs and Fisheries Regulation, 2017
8	National Adaptation Plan 2019	Indonesia's Ministry of National Development Planning/Bappenas, 2019
9	Climate Resilience Development Policy 2020-2045	Ministry of National Development Planning/Bappenas, 2021
10	Guidelines for Mainstreaming Gender and Social Inclusion in Climate Change Projects: For GCF Project Proponents	The Fiscal Policy Agency, Ministry of Finance, 2021
11	Presidential Decree no 88/2021 on National Strategy for Elderly	2021

NO	TYPE OF DOCUMENT/ TITLE	AUTHOR/ YEAR
12	Policy Manuscript for Increasing Inclusive Social Protection for Persons with Disabilities	National Research and Innovation Agency, MOST-UNESCO, 2022
B. REPORT, BOOK		
1	A Study of The Fisheries Post-Harvest and Market Supply Chains in Nias Island, North Sumatera Province, Indonesia (FAO Nias Information Bulletin 1)	Venkatesh Salagrama, Aminudin Salka (Food and Agriculture Organisation of The United Nations (FAO)), 2010
2	Gender Dimensions of Ocean Risk and Resilience in SIDS and Coastal LDCs	CCW Colette, Robert B, Sarah H, et all, 2021
3	Gender-based Human Development 2022/ <i>Pembangunan Manusia Berbasis Gender 2022</i>	Ministry of Women Empowerment and Child Protection
4	<i>Pengantar Sosiologi Masyarakat Pesisir/</i> Introduction to Sociology of Coastal Community	Arif Satria, 2015
5	Promoting Gender Equality and Women's Empowerment in Fisheries and Aquaculture	Food and Agriculture Organization of The United Nations (FAO), 2016
6	Social Dimensions of Climate Changes in Indonesia	The World Bank, 2023
7	Statistical Yearbook of Indonesia 2023	Statistics Indonesia
8	<i>Statistik Tenaga Kerja Pariwisata dan Ekonomi Kreatif 2018-202/</i> Statistics of Labour in Tourism and Creative Economy 2018-2021	Ministry of Tourism and Creative Economy & Statistics Indonesia, 2022
9	Thematic Analysis of Indonesian Population: Adolescent Fertility, Maternal Mortality, Infant Mortality, and People with Disabilities	Statistics Indonesia, 2023
10	The State of World Fisheries and Aquaculture: Contributing to food security and nutrition for all	Food and Agriculture Organization of The United Nations (FAO), 2016
11	The State of World Fisheries and Aquaculture 2022: Advancing Towards Gender Equality in Fisheries and Aquaculture	Food and Agriculture Organization of The United Nations (FAO), 2022
12	Turning Promises into Action: Gender Equality in 2030 Agenda for Sustainable Development	UN Women, 2018
13	Women's Representation in The 2019 Parliament Election: Challenges and Opportunities	The Indonesian House of Representative Research Center for The Expertise Agency, 2020

NO	TYPE OF DOCUMENT/ TITLE	AUTHOR/ YEAR
C. JOURNAL		
1	Building Adaptive Capacity to Climate Change in Tropical Coastal Communities	Joshua E Cinner, Adger WN, Allison EH, et al, 2018
2	Occupational Accidents among fishermen in Manado, South Sulawesi. (UNSRAT Journal)	FM Suhartoyo, Oksfriani JS, Novie HR, 2022
3	Should We Call Them Fishers or Fishermen? (Fish and Fishery, Wiley Online Library)	Trevor A Branch, Danika Kleiber, 2015
4	The Role of Women in the Fishery Sector of Pantar Island, Indonesia (The Journal of Asian Fisheries Society)	Ria Fitriana, Natasha Stacey, 2012
5	Social-Ecological Traps in Reef Fisheries (Global Environmental Change)	JE Cinner, 2011
6	The Presence of Power of Fisherwomen in the Villages of Morodemak and Purworejo: Against Violence, Bureaucracy & Biased of Religious Interpretation (Jurnal Perempuan)	AM Pratiwi, Abby G, 2017
7	Various Type of Rural Women in Facing Climate Change amidst Subordination (Jurnal Perempuan)	Widya HS, Fairuz RA, 2022
D. ARTICLE		
1	<i>Bagaimana Perubahan Iklim Memperparah Ketimpangan Gender di Kawasan Pesisir</i> (The Conversation)	Andi Misbahul Pratiwi, The Conversation, 2023
2	<i>Dari Program 1 juta, Diduga Hanya 2 Perempuan Dapat Asuransi Nelayan</i> (Mongabay)	Themmy Doaly, 2017
3	Harnessing the diversity of small-scale actors is key to the future of Aquatic food systems. (Nat.Food 2)	RE Short, et al, 2021
4	<i>Menghapus Bias Gender di Pesisir Indonesia</i> (Mongabay)	E Medianti, Ade Y, 2022
5	<i>Sebaran Masyarakat Adat</i> (Katadata)	MK Andriarsi, 2010
6	Sudahkah Kebijakan Perubahan Iklim Indonesia responsive gender? (The Conversation)	AM Pratiwi, July 24, 2023
7	The Impacts of Climate Change to Marine and Fisheries Sector and Its Relevances to United Nation of Convention of Law of The Sea (UNCLOS) Arrangements (Directorate General of Surveillance for Marine and Fisheries Resources)	Eko Rudianto, Ratih Seftiariski, (no date)

NO	TYPE OF DOCUMENT/ TITLE	AUTHOR/ YEAR
8	Worldwide, Climate Change is a worse news for Women (The Conversation)	Hilary Bambrick, The Conversation, 2015
9	3 Reasons why Women in Fisheries Matter for An Inclusive Economic Recovery (World Resources Institute/WRI)	L Napitupulu, Smita T, 2020
10	<i>Warga Pesisir Masih Bertaruh Nyawa di Laut (KOMPAS Online)</i>	SR Yunus, Yulianus J, Manumoyoso AH, Triwibowo DR, Herin FP, 26 July 2023
E. WEBSITE		
1	Blue-Halo S/ Konservasi Indonesia	Konservasi Indonesia
2	Women and Poverty	Women Watch: Information and Resources on Gender Equality and Empowerment of Women
3	Concession and Incentives to Promote Economic Participation of People with Disabilities (Fiscal Policy Agency Ministry of Finance Republic of Indonesia)	G Wibowo, Marlina I, Arifin B, Waristi F, Bastias D, Aulia A, Silalahi H, 2021
4	Statistics Indonesia	(For all data sourced from Statistics Indonesia)
5	<i>SIMFONI PPA (Sistem Informasi Online Perlindungan Perempuan dan Anak/ Online Information System for Women and Child Protection)</i>	Ministry of Women Empowerment and Child Protection (For all cases of violence data sourced from SIMFONI PPA)
6	Satu Data (Ministry of Marine Affairs and Fisheries Regulation) on <i>KUSUKA (Kartu Pelaku Usaha Kelautan dan Perikanan)</i>	Ministry of Marine Affairs and Fisheries Regulation

APPENDIX 3: List of Respondents in Each Province

No	Provinces-Selected Area / Time for Data Collection	Activities & Group of Respondents (*Activities with male and female groups conducted separately)	Number of respondent
1	North Sumatera: Sihene'asi Village, North Nias District (05-09 June 2023)	FGD with small/poor fishers (male)	6
		FGD with women working in informal sector (processing, selling)	4
		Interview with small/poor fishers (women)	1
		Interview with Female head of household in coastal community	1
		Interview with fishermen employ small fishers	1
		Interview with NGO working with coastal communities in North Nias (YAKOPI) (male)	1
		Interview with NGO working with coastal communities (Fondasi Hidup) (male)	1
		Interview with government official from Provincial <i>Balai</i> of Marine Affairs and Fisheries for North Sumatera (female)	1
		Interview with government official: Fisheries instructor from district office of Marine & Fisheries of North Nias (male)	1
		Interview with government official: Fisheries instructor for Gn Sitoli District, from Ministry of Marine Affairs & Fisheries (male)	1
		Interview with government official: Provincial office of women empowerment & child protection for North Sumatera (female)	1
		Total Respondent (North Sumatera)	19 (11 male & 8 female)
2	Bengkulu: Kelurahan Sumber Jaya, Bengkulu City (05-09 June 2023)	FGD with small/poor fishers (male)	5
		FGD with small/poor fishers (female)	6
		FGD with women working in informal sector (processing)	4
		FGD with crab fishers (male)	4
		Interview with Female head of household in coastal community	2
		Interview with fishermen employ small fishers	1
		Interview with NGO working with coastal communities (LATUN)	1
		Interview with government official from Provincial office of Marine Affairs and Fisheries	5
		Interview with government official from Provincial office of women empowerment & child protection	1
		Interview with government official from District <i>office</i> of women empowerment & child protection	1
		Interview with academics/researcher	1
		Observation at Fish Market in Baai Island	

No	Provinces-Selected Area / Time for Data Collection	Activities & Group of Respondents (*Activities with male and female groups conducted separately)	Number of respondent
		Total Respondent (Bengkulu)	31
3	Banten: Pandeglang (12-15 June 2023)	FGD with small/poor Fishers (male)	4
		FGD with small/poor Fishers -catching clams (female)	3
		FGD with women working in informal sector (processing)	3
		Interview with small fisherwomen	2
		Interview with Female head of household in coastal community	1
		Interview with fishermen employ small fishers	1
		Interview with fish (shrimp) farmers & voluntary instructor	1
		Interview with NGO working with coastal communities (Wahana Anak Pantai)	1
		Interview with government official from Provincial office of Marine Affairs and Fisheries	2
		Interview with government official from Provincial office of women empowerment & child protection	2
		Interview with government official from District <i>office</i> of Fisheries	1
		Observation at work station for fish processing (anchovy)	
		Total Respondent (Banten)	21
4	Aceh Besar, Banda Aceh (12-15 June 2023)	FGD with small fisher (male)	6
		Interview with small/poor informal worker female)	8
		Interview female head of the family	1
		Interview with employer of small fishers (<i>Toke</i>)	1
		Interview with Panglima Laot (sea guard based on customary law)	1
		Interview with NGO working with coastal communities (KuALA and KNTI)	3
		Interview with government official from Provincial office of women empowerment & child protection	1
		Total Respondent (Aceh)	21
5	Teluk Betung, Lampung (19-23 June 2023)	FGD with small fish/green mussel farmer	5
		FGD with small fisher (Male)	4
		Interview with small/poor informal worker female)	5
		Interview female head of the family	2
		Interview with employer of small fishers/ <i>Toke</i>	1
		Interview with NGO working with coastal poor communities (JRMK)	1
		Interview with government official from Provincial office of Marine Affairs and Fisheries	1
		Interview with government official from Provincial office of women empowerment & child protection	1

No	Provinces-Selected Area / Time for Data Collection	Activities & Group of Respondents (*Activities with male and female groups conducted separately)	Number of respondent
		Total Respondent (Lampung)	20
6	West Sumatera: Tuapejat district, Sipora Island, Mentawai (03-07 July 2023)	FGD with small/poor fishers (male)	4
		FGD with small/poor fishers – catching <i>lilit</i> (female)	3
		FGD with women working in informal sector (processing, marketing)	4
		Interview with small/poor fishers (female)	1
		Interview with employer of small fishers (<i>Toke</i>)	1
		Interview with NGO working with coastal communities- <i>Fondasi Hidup</i> (male)	1
		Interview with government official: fisheries instructor in Mentawai island district (female)	1
		Interview with government official from Provincial office of Marine Affairs and Fisheries (male)	2
		Interview with government official from Provincial office of women empowerment & child protection (female)	2
		Interview with government official from District <i>office</i> of women empowerment & child protection (female)	4
		Observation at work station for processing and marketing (salted fish) run by women's group	
		Total Respondent (West Sumatera)	23
		Total all respondent (Male & Female)	135 64 Male 71 Female

APPENDIX 4: Statistical Information for GESI Indicators

A. POPULATION & POVERTY

4.A.1 WPP 572 Number of Poor Population (2020)- Combined City & Rural Area

Provinces	In Thousand			Total Population	Poor Population
	Semester 1	Semester 2	Average		
Aceh	814,91	833,91	824,41	5.338,10	15,4%
North Sumatra	1.283,29	1.356,72	1.320,01	14.798,40	8,9%
West Sumatra	344,23	364,79	354,51	5.545,70	6,4%
Bengkulu	302,58	306,00	304,29	1.994,30	15,3%
Lampung	1.049,32	1.091,14	1.070,23	8.534,80	12,5%
Banten	775,99	857,64	816,82	12.895,30	6,3%
TOTAL	4.570,32	4.810,20	4.690,26	49.106,60	64,80%

Source: National and Provincial Central Bureau of Statistics, Ministry of Marine and Fisheries Affairs

4.A.2 WPP 572 Head of the Household Gender Demographics (2020) – Combined City & Rural Area

Provinces	Percentage of Gender of Head of Household	
	Male	Female
Aceh	78,7%	21,3%
North Sumatra	82,7%	17,3%
West Sumatra	82,7%	17,3%
Bengkulu	88,3%	11,7%
Lampung	88,0%	12,0%
Banten	86,7%	13,3%
Average of 6 prov	84,5%	15,5%
INDONESIA (NATIONAL)	87,3%	12,7%

Source: National and Provincial Central Bureau of Statistics, Ministry of Marine and Fisheries Affairs

B. HEALTH

4. B.1 Maternal Mortality Rate (MMR) in Indonesia and Six Provinces of WPPNRI 572 in 2020-2022*

Province	2020	2021	2022
INDONESIA	189	na	na
Aceh	201	410	100
North Sumatera	195	119	131
West Sumatera	178	196	na
Bengkulu	179	50	30
Lampung	192	na	na
Banten	127	78	na

Source: Statistics Indonesia, Result of Long Form Survei SP2020

* The availability of data on MMR at national level and several provinces varies, complete information available for national and six provinces only in 2020

4.B.2 Number of Villages/Kelurahan Having Health Facilities in Six Province in WPPNRI 572 from 2019-2021

Health Facilities	Lampung			Aceh			Bengkulu			North Sumatra			West Sumatra			Banten		
	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
Hospital	62	72	73	67	64	70	20	21	22	178	178	184	58	62	65	93	99	95
Maternity Hospital	27	4	4	1	3	0	1	2	1	19	8	10	16	12	8	49	37	24
Polyclinic	360	366	334	346	332	275	53	56	59	813	835	844	127	139	143	474	511	496

Source: Statistical Yearbook of Indonesia 2023

4.B.3 Unmet Needs of Health Services in Indonesia Disaggregated by Sex from 2019-2023

Sex	2019	2020	2021	2022	2023
Male	5,18	5,41	5,87	5,96	5,08
Female	5,17	5,46	4,19	6,22	5,36

Source: Statistics Indonesia, National Socio-economic Survey

4.B.4 Unmet Needs of Health Services in Six Provinces of WPPNRI 572 from 2021-2023

PROVINCE	2021	2022	2023
INDONESIA	5,03	6,09	5,22
ACEH	4,29	6,83	5,79
NORTH SUMATERA	3,83	5,96	5,15
WEST SUMATERA	3,26	4,31	4,67
BENGKULU	4,49	6,06	5,92
LAMPUNG	3,89	7,33	5,51
BANTEN	4,29	5,34	5,27

Source: Statistics Indonesia, result of Annual Socio-economic Survey

4.B.5 Life Expectancy disaggregated by Sex in Six Provinces in WPPNRI 572 (and Study Sites) from 2019-2022

Province	M/F	2019	2020	2021	2022
INDONESIA	M	69.44	69.59	69.67	69.93
	F	73.33	73.46	73.55	73.83
Aceh (Banda Aceh)& (Aceh Besar)	M	67,98 (69.36) (67.74)	68,04 (69.48) (67.8)	68.07 (69.56) (67.8)	68.26 (69.81) (67.96)
	F	71,85 (73.25) (71.68)	71,91 (73.33) (71.69)	71,94 (73.38) (71.69)	72.16 (73.65) (71.9)
North Sumatera (Nias Utara)	M	67,07 (67,26)	67,22 (67,41)	67,35 (67,52)	67.66 (67.78)
	F	70,92 (71,21)	71,08 (71,34)	71,21 (71,45)	71.6 (71.81)
West Sumatera	M	67,42 (62.71)	67,59 (62.72)	67,7 (62.72)	67.99 (62.9)
	F	71,29 (66.54)	71,45 (66.59)	71,57 (66.6)	71.89 (66.82)
Bengkulu (Bengkulu City)	M	67,28 (68.01)	67,47 (68.21)	67,54 (68.28)	67.74 (68.48)
	F	71,13 (71.95)	71,27 (72.05)	71,4 (72.11)	71.68 (72.36)
Lampung (Bandar Lampung)	M	68,64 (69.28)	68,78 (69.36)	68,86 (69.42)	69.07 (69.61)
	F	72,48 (73.17)	72,61 (73.23)	72,69 (73.25)	72.97 (73.49)
Banten (Pandeglang)	M	67,97 (62.52)	68,08 (62.29)	68,15 (62.82)	68.46 (63.17)
	F	71,81 (66.35)	71,93 (66.54)	71,99 (66.68)	72.36 (67.1)

Source: Statistics Indonesia, <https://www.bps.go.id/id/statistics-table/2/NDU1IzI=/angka-harapan-hidup-ahh-menurut-kabupaten-kota-dan-jenis-kelamin.html>

A. EDUCATION

4.C.1 Mean Years of Schooling from Population Aged ³ 15 years in Indonesia, 2020 to 2023

Sex	2020	2021	2022	2023
Male	9.19	9.23	9.28	9.33
Female	8.6	8.7	8.87	8.92

Source: Statistics Indonesia

4.C.2 Nett Enrollment Rate (NER) from 2021-2023

Province	Net Enrollment Rate/Angka Partisipasi Murni (A P M)								
	Primary/MI/Paket A			Junior High/Mts/Paket B			Senior High/Vocational/MA/Paket C		
	2021	2022	2023	2021	2022	2023	2021	2022	2023
ACEH	98,95	99,07	98,97	86,95	88,21	84,85	70,8	71,16	71,7
NORTH SUMATERA	97,69	98	97,95	81,13	81,84	82,09	67,99	68,27	68,67
WEST SUMATERA	98,82	98,8	98,89	78,75	78,86	80,22	68,99	68,38	69,18
BENGKULU	98,61	98,6	98,61	80,25	80,25	81,08	66,08	66,61	67,09
LAMPUNG	99,1	99,29	99,22	82,03	82,07	80,64	60,31	61,96	62,84
BANTEN	98,15	97,93	97,97	84,28	84,67	85,43	59,69	59,54	60,42
INDONESIA	97,8	97,88	97,89	80,59	80,89	81,35	61,65	61,97	62,53

Source: Statistics Indonesia, National Socio-economic Survey

4.C.3 Total School Participation in Six Provinces of WPPNRI 572 from 2020-2022

School Level	Lampung			Aceh			Bengkulu			Sumatra Utara			Sumatra Barat			Banten		
	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Primary	99,16	99,1	99,29	99,03	98,95	99,07	98,65	98,61	98,6	97,72	97,69	98,35	98,8	98,82	98,8	97,95	98,15	97,93
Junior High	81,17	82,03	82,07	86,87	86,95	88,21	79,77	80,25	80,25	80,56	81,13	81,25	78,41	78,75	78,86	82,73	84,28	84,67
Senior High	59,58	60,31	61,96	70,7	70,8	70,8	65,82	66,08	66,61	67,99	67,99	66,3	68,9	68,99	68,38	59,06	59,69	59,54

Source: Indonesian Statistical Yearbook 2023

4.D.1 Total Number of Domestic Violence Case Reported

Year	Number of Cases
2021	23964
2022	27007
2023	29102
2024	32158

Source: Kementerian Pemberdayaan Perempuan dan Perlindungan Anak, Sistem Informasi Online Perlindungan Perempuan dan Anak (SIMFONI PPA)

4.D.2. Victims of Domestic Violence (Disagregated by Gender)

Gender	2021	2022	2023	2024
Men	5010	4573	6251	6919
Women	20843	24473	25418	27833

Source: Kementerian Pemberdayaan Perempuan dan Perlindungan Anak, Sistem Informasi Online Perlindungan Perempuan dan Anak (SIMFONI PPA)

4.D.3. Domestic Violence Cases Reported per Province

Province	Year			
	2021	2022	2023	2024
North Sumatera	1390	1531	1681	1573
West Sumatera	774	801	1010	1024
Bengkulu	196	259	370	272
Lampung	674	654	708	796
Aceh	705	857	891	1089
Banten	827	988	599	1234

Source: Kementerian Pemberdayaan Perempuan dan Perlindungan Anak, Sistem Informasi Online Perlindungan Perempuan dan Anak (SIMFONI PPA)

4.D.4. Women Victims in Domestic Violence Cases

Province	Year			
	2021	2022	2023	2024
North Sumatera	610	660	744	801
West Sumatera	234	271	300	362
Bengkulu	59	123	149	112
Lampung	290	227	217	227
Aceh	578	690	619	884
Banten	513	607	599	646

Source: Kementerian Pemberdayaan Perempuan dan Perlindungan Anak, Sistem Informasi Online Perlindungan Perempuan dan Anak (SIMFONI PPA)

4.D.5. Number of Domestic Violence Cases Reported in Study Sites

Province	Year			
	2021	2022	2023	2024
Banda Aceh (Aceh)	143	152	150	111
Aceh Besar (Aceh)	11	68	47	32
Utara (North Sumatera)	9	13	5	7
Padang (West Sumatera)	122	75	70	123
Bengkulu (Bengkulu)	64	82	79	29
Bandar Lampung (Lampung)	206	139	120	198
Pandeglang (Banten)	26	49	84	61

Source: Kementerian Pemberdayaan Perempuan dan Perlindungan Anak, Sistem Informasi Online Perlindungan Perempuan dan Anak (SIMFONI PPA)

APPENDIX 5: Mapping of women's organizations in the project provinces

Province	Name of organization	Type of Organization	Description	Notes
Accross Province (Sumatera)	Konsorsium Perempuan Sumatera MAMPU	Network organization	PERMAMPU is a consortium of civil society organizations in Sumatra that empowers grassroots women through cooperatives, women's community forums (FKPAR), and support for Women's Crisis Centers (WCC) to strengthen leadership and promote sexual and reproductive health rights.	PERMAMPU works across 8 provinces in Sumatra, Aceh, North Sumatra, West Sumatra, Riau, Jambi, South Sumatra, Bengkulu, and Lampung, reaching over 30 districts including Nias, Aceh Besar, Rejang Lebong, and South Lampung. Through grassroots women's groups, cooperatives, and community forums, it promotes women's leadership, reproductive health rights, and economic empowerment.
Aceh	PEKKA Aceh	Women Organization	Membership organisation: Networks for Women Households. Focus are: economic empowerment and social-culture movement. The strategy includes: women leadership, women capacity building, knowledge management and policy advocacy	In Aceh they worked in 13 district and had formed 385 women groups grounds in the ground. PEKKA Aceh members are 4938 women and they have 12 learning center. Their economic empowerment activities includes micro loan. In other province (South Sulawesi) PEKKA has a women fisher folk groups.

Province	Name of organization	Type of Organization	Description	Notes
Aceh	RPUK (Women Volunteers for Humanity Aceh)	Women led NGOs	RPUK Aceh is dedicated to empowering women and addressing issues related to gender equality, human rights, and social justice within the Acehnese context.	
Aceh	Flower Aceh	Women led NGOs	Flower Aceh is a women's rights organization promoting gender equality, non-discrimination, and anti-violence by empowering marginalized women, strengthening their participation and leadership, advocating for policy change.	Flower Aceh is member of ASPPUK. ASPPUK (Asosiasi Pendamping Perempuan Usaha Kecil Mikro) is a national Indonesian network that empowers women micro-entrepreneurs through capacity building, policy advocacy, and digital-skills training.
Aceh	LBH APIK Aceh	Legal Aid for Women	LBH APIK Aceh is a women-focused legal aid organization providing legal assistance and advocacy for victims of gender-based violence in Aceh.	
Aceh	Pemberdayaan Harekat Inong Aceh	Women Organization	PHIA (Pemberdayaan Hareukat Inong Aceh) is a grassroots women's organization empowering vulnerable women in Aceh through mentoring, skills training, and advocacy for gender equality and women's rights.	

Province	Name of organization	Type of Organization	Description	Notes
Aceh	Serikat Inong Aceh	Women Organization	Serikat Inong Aceh (SeIA) is a grassroots women's network empowering rural women in Aceh through cooperatives, support for survivors, and peacebuilding initiatives.	
Aceh	Balai Syura Ureung Inong Aceh (BSIA)	Women Organization	Balai Syura Ureung Inong Aceh (BSIA) is a women's organization in Aceh advocating for gender justice, peacebuilding, and support for survivors of gender-based violence	
Aceh	PPSW (Asosiasi Pusat Pengembangan Sumberdaya Wanita) Sumatera Chapter	Women Organization	PPSW Sumatera is a regional women's empowerment organization working in Aceh and Riau, supporting grassroots women through cooperatives, training, micro-credit, and advocacy to promote gender equality and community resilience.	PPSW Sumatera is PPSW networks. PPSW (Asosiasi Pusat Pengembangan Sumberdaya Wanita) is an Indonesian women's NGO that aims to empower women, especially those from the poorest urban and rural communities, through economic organizing, reproductive health, education, micro-credit, and leadership training. Operating nationally via autonomous regional branches (e.g., Jakarta, Pasoendan, Borneo, Sumatra), PPSW supports hundreds of grassroots cooperatives and thousands of

Province	Name of organization	Type of Organization	Description	Notes
				women, advocating for gender equality and democratic participation through training, research, advocacy, and community organizing . PPSW Sumatera areas covers Aceh and Riau.
North Sumatera	PEKKA North Sumatera chapter	Women Organization	Membership organisation: Networks for Women Households. Focus are: economic empowerment and social-culture movement. The strategy includes: women leadership, women capacity building, knowledge management and policy advocacy	In North Sumatera they worked in 4 district and had formed 277 women groups grounds in the ground. PEKKA North Sumatera has 3236 member and they have 2 learning center. Their economic empowerment activities includes micro loan. In other province (South Sulawesi) PEKKA has a women fisher folk groups.
North Sumatera	Perkumpulan Sada Ahmo	Women organization	Perkumpulan Sada Ahmo (PESADA) is a grassroots NGO based in Sidikalang, North Sumatra. It empowers indigenous Pakpak and grassroots women through economic strengthening (e.g., Credit Unions, organic farming),	PESADA (Perkumpulan Sada Ahmo) is actively working in Nias. Their work in Nias, particularly involving women-focused credit unions and empowering indigenous communities.

Province	Name of organization	Type of Organization	Description	Notes
			leadership development, reproductive and legal rights advocacy, and combating child marriage and gender-based violence.	PESADA is member of PERMAMPU
North Sumatera	HAPSARI (Himpunan Serikat Perempuan Indonesia)	Women organization	HAPSARI is a grassroots women's federation based in North Sumatra, supporting rural women through cooperatives, leadership training, and advocacy on gender-based violence and women's rights.	
North Sumatera	Yayasan Pokmas Mandiri	Women led NGOs	Yayasan Pokmas Mandiri is a foundation focused on improving the welfare of poor rural families by organizing microcredit programs for women, along with education, health initiatives, and training. It promotes the replication of microcredit systems based on the Grameen Bank model.	
West Sumatera	LP2MI	Women led NGOs	LP2M Sumatera Barat is a women-led civil society organization based in Padang, West Sumatra, established on September 7, 1995 to address persistent gender inequities in the Minangkabau community . It	LP2M works across Padang, Padang Pariaman, Tanah Datar, Sawahlunto, and Pesisir Selatan districts in West Sumatra. LP2M is a member of PERMAMPU Consortium.

Province	Name of organization	Type of Organization	Description	Notes
			supports grassroots women through economic empowerment, cooperatives, leadership development, and advocacy—particularly in sexual and reproductive health, gender representation, and disaster and climate resilience.	
West Sumatra	WCC Nurani Perempuan	Women Crisis Center	WCC Nurani Perempuan is a women's crisis center based in Padang, West Sumatra, that supports survivors of gender-based violence through legal aid, counseling, safe housing, and advocacy. It empowers women, raises public awareness, and engages with government and communities to promote gender justice and protection for women.	
West Sumatera	PEKKA West Sumatera chapter	Women Organization	Membership organisation: Networks for Women Households. Focus are: economic empowerment and social-culture movement. The strategy includes: women leadership, women capacity building, knowledge	In West Sumatera they worked in 2 district and had formed 118 women groups. PEKKA West Sumatera has 1407 members and they have 2 learning center. Their economic empowerment activities includes micro loan.

Province	Name of organization	Type of Organization	Description	Notes
			management and policy advocacy	In other province (South Sulawesi) PEKKA has a women fisher folk groups.
Bengkulu	Cahaya Perempuan WCC Bengkulu	Women Crisis Center	Cahaya Perempuan WCC Bengkulu is a women's crisis center in Bengkulu, focused on supporting women and girls affected by gender-based violence. The organization provides counseling, legal aid, safe shelter, and accompaniment through police and court proceedings, while promoting justice, truth, and recovery. It also leads community-based prevention programs across villages and districts.	Member of PERMAMPU
Bengkulu	Yayasan PUPA (Pusat Pendidikan dan Pemberdayaan untuk Perempuan dan Anak),	Women led NGO	PUPA founded in Bengkulu on July 25, 2011, is a volunteer-based NGO dedicated to advancing education, reproductive health, legal protection, and economic opportunities for marginalized women and children.	
Lampung	Lembaga Advokasi Perempuan Damar	Women led NGO	Lembaga Advokasi Perempuan Damar (founded December 23, 1999) is a	DAMAR is member of PERMAMPU

Province	Name of organization	Type of Organization	Description	Notes
			women's advocacy and empowerment organization based in Lampung. It focuses on fulfilling women's basic rights, such as health, education, political participation, as well as economic empowerment and protection from violence.	
Lampung	PEKKA Lampung chapter	Women Organization	Membership organisation: Networks for Women Households. Focus are: economic empowerment and social-culture movement. The strategy includes: women leadership, women capacity building, knowledge management and policy advocacy	In Lampung they worked in 1 district and had formed 22 women groups. PEKKA Banten has 398 members. Their economic empowerment activities includes micro loan. In other province (South Sulawesi) PEKKA has a women fisher folk groups.
Banten	PEKKA Banten chapter	Women Organization	Membership organisation: Networks for Women Households. Focus are: economic empowerment and social-culture movement. The strategy includes: women leadership, women capacity building, knowledge management and policy advocacy	In Banten they worked in 4 district and had formed 160 women groups. PEKKA Banten has 1082 members and they have 2 learning center. Their economic empowerment activities includes micro loan.

Province	Name of organization	Type of Organization	Description	Notes
				In other province (South Sulawesi) PEKKA has a women fisher folk groups.
Banten	PPSW Pasoendang	Women Organization	PPSW Pasoendan is a regional women's empowerment organization working in West Java and Banten, supporting grassroots women through cooperatives, training, micro-credit, and advocacy to promote gender equality and community resilience.	PPSW Banten is PPSW networks. PPSW (Asosiasi Pusat Pengembangan Sumberdaya Wanita) is an Indonesian women's NGO that aims to empower women, especially those from the poorest urban and rural communities, through economic organizing, reproductive health, education, micro-credit, and leadership training. Operating nationally via autonomous regional branches (e.g., Jakarta, Pasoendan, Borneo, Sumatra), PPSW supports hundreds of grassroots cooperatives and thousands of women, advocating for gender equality and democratic participation through training, research, advocacy, and community organizing . PPSW Pasoendan areas covers West Java and Banten