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GAP ANALYSIS
Roots of Resilience: Scaling Impact Through Market Integration and Innovation

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Disclaimer

The draft document aims to initiate meaningful discussions among industry leaders, government agencies, and other stakeholders about a proposed program designed to protect perennial plantations, including coffee, cocoa, and cashew nuts, as well as small-scale agroforestry, from the physical and financial impacts of climate disasters.

Please note that this document is still in draft form and should not be cited.

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ANNEX 1. SUMMARY OF PROJECTS FUNDED BY ADAPTATION FUND IN SOUTHEAST ASIA

Gaps and problems	Solutions or Activities	Outputs	Outcomes	Impact	Future programs or initiatives or upscaling
Regional					
Groundwater resources in the Greater Mekong Subregion: Collaborative management to increase resilience (Cambodia, Lao People's Democratic Republic, Thailand, Viet Nam) (2022-2026)					
Increasing Water Demand and Climate Variability: A rapidly increasing population (expected to reach over 307 million by 2050) and prolonged dry seasons with intensifying droughts are increasing demand for water resources, including groundwater. **Limited Groundwater Management Capacity and Knowledge:** Despite the reliance on groundwater for	**Component 1:** Groundwater resource assessment and monitoring **Component 2:** Priority use and stakeholders **Component 3**: Resource management, information, tools, and equipment **Component 4:** Regional cooperation, coordination and information exchange **Component 5**: Capacity building and training	**Output 1***:* Shared aquifer inventory compiled, harmonized groundwater monitoring network established. **Output 2:** Customized community water use guidelines introduced, women and vulnerable groups' participation supported and monitored. **Output 3:** Concrete groundwater management technologies introduced, pilot	**Outcome 1:** Participating countries use a regional GMS approach for evidence-based decision-making and management regarding climate change, sustainable water use, and resilience. **Outcome 2:** Groundwater users in different economic sectors have equitable access to information and guidelines and can actively participate in	**Enhanced Climate Resilience:** Increased resilience of people, livelihoods, and ecosystems in the GMS against climate change impacts by protecting groundwater resources. **Improved Water Availability and Food Security:** Enhancing clean water availability and ensuring sustainable groundwater supply for food production, domestic needs, and livelihoods. **Better Health and Well-being:** Improved groundwater quality	**Human Resources Development:** Strong focus on developing human resources, creating a new generation of skilled groundwater experts (female and male). **Community of Practice:** Fostering a regional community of practice for groundwater experts to meet and share issues annually. **Postgraduate Studies Support:** Providing an enabling environment and support for postgraduate studies to generate long-term benefits and enhance sustainability. **Community Empowerment:** Engaging with community-level

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domestic, agrarian, and industrial use, there's limited capacity to manage transboundary groundwater resources and insufficient knowledge about their sustainable yields. Comprehensive groundwater management and specialized studies are underdeveloped, particularly in Lao PDR and Cambodia. **Over-extraction and Environmental Impacts:** Over-extraction of groundwater for high-value crops (e.g., coffee in Vietnamese highlands, rice in Cambodian Mekong Delta) has caused severe drops in groundwater levels.		technologies monitored and adjusted. **Output 4:** Harmonized national strategies established. **Output 5:** Relevant training and capacity development activities.	groundwater management. **Outcome 3:** Climate resilience and groundwater use in pilot areas are increased equitably and in a gender-balanced manner through adaptive technologies and approaches. **Outcome 4:** Regionally consistent management strategies for groundwater resources in support of climate change adaptation are adopted through effective stakeholder engagement. **Outcome 5:** GMS stakeholders capably use project tools and knowledge on groundwater use for climate change	through monitoring of pollutants like arsenic, contributing to reduced waterborne health risks. **Economic Benefits:** Improved water availability may support job creation, and adapting farming techniques will support sustainable livelihoods and potentially increase household income. Reduced time spent on water collection for women and girls can increase time for income-generating activities and education. **Stronger Institutional Capacity:** Over 25 partnerships and active collaborations will support groundwater management capabilities, and over 50 regional experts will support institutional capacity in 5 countries. **Increased Awareness and Skills:** Over 250	organizations to strengthen their position as resource owners and custodians. **Knowledge Dissemination:** Distilling lessons learned and disseminating results to a broad spectrum of stakeholders through workshops and an International Conference. A Sharepoint will be used as a common repository for information and training materials to ensure long-term access. **Policy and Technical Standards Contribution:** Contributions towards the elaboration of detailed and technically specified groundwater management regulations will be undertaken where sustainable and comprehensive groundwater management proves its worth as a climate resilience strengthening option. The project will facilitate sharing of successful examples among countries and organizations.

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This can lead to reduced water availability, higher pumping costs, saltwater intrusion in coastal areas, and loss of ecosystem services. Naturally occurring arsenic contamination is exacerbated by increased groundwater use. **Uncertainty of Climate Change Impacts on Groundwater:** The full impacts of climate change on groundwater availability are complex and require further investigation, with significant knowledge gaps remaining regarding extent, distribution, quality, recharge, and extraction.			adaptation and resilience	participants will have increased awareness and skills on climate-related impacts. **Gender Equality:** The project aims to reduce gender gaps by supporting women's active participation in groundwater management and decision-making processes.	**Complementarity with Other Initiatives:** The project will ensure maximum complementarity and sharing of data with other ongoing and future projects focusing on groundwater and delta resilience in the region, such as the GEF-FAO project "Enhancing sustainability of the Transboundary Cambodia - Mekong River Delta Aquifer" and the Worldwide Fund for Nature's Resilient Asian Deltas Initiative.

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Institutional Gaps: While surface water management has seen progress in transboundary cooperation, there's no common approach or cooperation for groundwater resources. The Mekong River Commission (MRC) also has a less documented role regarding groundwater issues. **Gender Gaps:** Women face a lack of access to information and barriers to representation, increasing their vulnerability to climate-related hazards, particularly in rural areas.					

Gaps and problems	Solutions or Activities	Outputs	Outcomes	Impact	Future programs or initiatives or upscaling
Mekong EbA South: Enhancing Climate Resilience in the Greater Mekong Sub-region through Ecosystem-based Adaptation in the Context of South-South Cooperation (Thailand, Viet Nam) (2023-2027)					
Climate Change Impacts: The GMS is experiencing considerable climate change, including increased temperatures and erratic rainfall, leading to more intense and frequent floods and droughts. These impacts result in insufficient water for livelihoods, reduced agricultural productivity, soil erosion, landslides, saltwater intrusion, property destruction, and loss of life. **Ecosystem Degradation:** Anthropogenic pressures like damming, water extraction for	**Component 1**: Demonstration of climate change adaptation interventions, with a focus on drought and flood management, in vulnerable communities and different ecosystems **Component 2**: Regional knowledge base on climate change adaptation expanded in the GMS **Component 3**: Regional cooperation on climate change adaptation	**Output 1:** Implementation of EbA interventions in the Young River Basin, Thailand , and around Tram Chim National Park, Vietnam. Establishment of a monitoring program for cost-effectiveness. Implementation of national-level knowledge-sharing strategies. **Output 2:** GMS-specific cost-effectiveness analysis on adaptation interventions for floods and droughts. Development of policy briefs and papers on good practices in managing shared climate impacts.	**Outcome 1:** Climate change adaptation interventions implemented by vulnerable communities in Thailand and Vietnam to manage climate change impacts, particularly droughts and floods. **Outcome 2:** Enhanced knowledge and awareness of adaptation measures, including EbA, to shared climate change impacts in different ecosystems to promote regional cooperation, planning and implementation of adaptation in the GMS.	**Increased Community Resilience:** Enhanced resilience of beneficiary communities to droughts and floods. **Multiple Environmental Benefits:** Strengthened ecosystem functioning, carbon sequestration, biodiversity conservation, flood/drought mitigation, improved agricultural production, increased water availability/quality, improved soil nutrient content, and reduced environmental degradation. **Informed Decision-Making:** Results of monitoring and cost-effectiveness analysis will inform future decisions on EbA to combat droughts and floods.	**Replication and Upscaling:** Project sustainability will be achieved by implementing concrete on-the-ground adaptation interventions that can be replicated in vulnerable communities across the Mekong River Basin. Successful interventions can be scaled up at a Basin level to reduce climate change impacts. **Continuous Knowledge Sharing:** Knowledge generated will be made widely available through existing online information platforms and regional climate change adaptation forums. Continuous sharing of information, participation in regional training, and provision of policy briefs will strengthen regional coordination. **Policy Integration:** Knowledge will be shared within and among GMS countries, enabling national governments and regional

Gaps and problems	Solutions or Activities	Outputs	Outcomes	Impact	Future programs or initiatives or upscaling
irrigation, and extensive deforestation threaten the capacity of GMS ecosystems to provide goods and services essential for local communities. **Insufficient On-the-Ground Adaptation:** Despite national and regional adaptation plans, there are few examples of concrete adaptation interventions, particularly EbA, being implemented in the GMS. **Limited Knowledge Dissemination:** Where adaptation interventions exist, there is inadequate dissemination of knowledge and lessons learned, creating a barrier to the effective		**Output 3:** Policy recommendations for regional cooperation and scaling up adaptation interventions. Organization of regional dialogue meetings and production/dissemination of media products on climate change adaptation interventions and lessons learned.	**Outcome 3:** Strengthened regional cooperation and coordination on climate change adaptation.	**Strengthened Regional Coordination:** Knowledge gained will strengthen regional coordination on climate change adaptation and be incorporated into future regional and national adaptation plans. **Effective Policy Implementation:** Facilitate the effective conversion of conceptual adaptation strategies into on-the-ground actions, increasing the resilience of vulnerable people. **Socio-economic Benefits:** Consideration of impacts on women and other marginalized groups in cost-effectiveness analyses.	bodies to integrate appropriate adaptation knowledge into their climate change strategies. This will promote policy alignment and complementary interventions. **Future Adaptation Projects and Strategies:** Policy briefs will inform the development and implementation of future adaptation projects and strategies across the region.

Gaps and problems	Solutions or Activities	Outputs	Outcomes	Impact	Future programs or initiatives or upscaling
development and implementation of regional and national adaptation plans.					
Philippines					
Harnessing the Water-energy-food Nexus to Address and Adapt to Climate Change Impacts in Tawi-Tawi (2025-2029)					
- Water Insecurity: Sitangkai and Sibutu island communities rely on rainwater, brackish groundwater, or expensive imported water. Rising sea levels and irregular rainfall are exacerbating water scarcity. - **Low Adaptive Capacity**: Tawi-Tawi has the **lowest water and electricity access** in the Philippines, compounding vulnerability to climate change.	**Component 1: Deployment of Resilient Water Supply Systems Integrated with Upgraded RE Infrastructure:** **=> Contribution to Climate Resilience:** Ensures a climate-resilient water supply, reducing reliance on climate-vulnerable sources through renewable energy-powered desalination. **Component 2: Upgrading of**	1. Desalination plants installed; Level 1 water systems retrofitted to Level 2; Hybrid RE systems upgraded; Rainwater harvesting systems improved/installed. 2. Adaptive and sustainable seaweed production systems identified/implemented ; Feasibility of processing centralization assessed, higher-value products produced; Dissemination	1. Increase adaptive capacity of water access infrastructure and services. 2. Strengthen livelihoods and income sources, with new jobs created. 3. Strengthen awareness and ownership of adaptation and climate risk reduction processes within local communities.	The overarching impact is **Increased resiliency of communities in Tawi-Tawi to climate variability and change** by securing climate-resilient water access. **- Economic Benefits:** Increased seaweed productivity and value-addition, creation of direct and indirect job opportunities (infrastructure O&M, diversified economic activities), increased economic viability of renewable energy, and support for national	**Component 4: Project Scaling Up:** This component is specifically dedicated to preparatory activities for scaling up, including stakeholder consultations, developing a scaling-up strategy, and preparing documentation for leveraging private sector or other climate funds (e.g., Green Climate Fund).

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- **Climate Change Vulnerability:** The province is highly vulnerable to climate change, experiencing significant sea-level rise and increasing sea surface temperatures that negatively affect marine ecosystems, including seaweed farms. - **Livelihood Vulnerability (Seaweed Farming):** Despite being major seaweed producers, communities face low yields due to poor quality seedstocks, diseases, and inadequate post-harvest processing capabilities. Limited access to electricity and freshwater hinders value-addition, leaving	**Seaweeds Industry in Tawi-Tawi:** => **Contribution to Climate Resilience:** Strengthens livelihoods and economic stability for seaweed farmers, enhancing resilience to climate disruptions. **Component 3: Awareness and Capacity Building at Local Level in Tawi-Tawi:** **=> Contribution to Climate Resilience:** Fosters local ownership, ensures proper infrastructure maintenance, and integrates climate risk reduction into local planning and practices.	workshops and materials provided. 3. LGUs capable of infrastructure maintenance and gender-sensitive planning; Training modules developed; Climate-smart investment plans prepared; Awareness seminars conducted; Targeted training for women and men in seaweed value chain; Gender-responsive knowledge management plan prepared.		seaweed development goals. **- Social Benefits:** Reduced vulnerability to climate impacts, improved health and quality of life through better water access, enhanced opportunities and empowerment for women, and youth engagement. **- Environmental Benefits:** Conservation of island groundwater, reduced plastic waste, indirect benefits from increased seaweed production (ocean acidification mitigation, carbon sequestration), and climate change mitigation co-benefits (reduced CO2 emissions from renewable energy and reduced water transport).	

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farmers as "price-takers." - **Poor Access to Basic Services:** Beyond water, the region has minimal access to electricity and improved sanitation, contributing to poverty and limiting adaptive capacity. - **Gender Inequality:** Women, despite their significant involvement in seaweed farming, are often uncompensated and excluded from decision-making due to limited access to training and education. **- Institutional and Capacity Gaps:** Local Government Units (LGUs) lack the resources and expertise for effective water system					

Gaps and problems	Solutions or Activities	Outputs	Outcomes	Impact	Future programs or initiatives or upscaling
management and climate-smart investment planning.					
Cambodia					
Increasing Climate Resilience Through Small-Scale Infrastructure Investments and Enhancing Adaptive Capacity of Vulnerable Communities in Kampot and Koh Kong Provinces in Cambodia (2024-2028)					
High Climate Vulnerability: Cambodia is highly vulnerable to climate change, experiencing warming temperatures, increased incidences of extreme heat, and irregular rainfall, leading to floods, droughts, windstorms, and seawater intrusion. Coastal zones are particularly affected by rising sea levels impacting tourism, causing flood and storm damage,	**Climate Resilient Infrastructure:** Implementing concrete adaptation actions to support small-scale climate-resilient infrastructure, such as upgrading drainage systems, canals, waterways, and renovating waterbodies (irrigation tanks and embankments). This also includes establishing/renovating wastewater treatment plants and	**Component 1:** Small-scale protective infrastructure and ecosystems, including renovated drainage systems, wastewater treatment plants, filter nets, renovated waterbodies, and resilient housing/latrines. **Component 2:** Restoration of destroyed mangrove ecosystems, development of EbA management plans, and exploration/support for	**Outcome 1:** Enhanced resilience of vulnerable communities through climate-resilient small-scale infrastructure. **Outcome 2:** Reduced impacts of coastal climate hazards and increased incomes for vulnerable communities through Ecosystem-Based Adaptation and	**- Reduced Vulnerability and Increased Resilience:** The project will reduce the vulnerability of communities to climate change impacts, particularly floods and droughts, and increase their adaptive capacity. - **Economic Benefits:** By strengthening resilience, the project reduces the need for costly structural solutions and potential relocation, allowing government funds to be directed towards social welfare. It creates economic and resilience-	**Replication and Upscaling:** The project design includes an output for "Share knowledge and lessons through documentation of resilient climate actions for increased adaptive capacities," specifically targeting the upscaling of lessons and best practices. It aims to generate opportunities for autonomous adaptation in communities with similar ecological and socio-economic conditions. **Models for Future Infrastructure:** Strategies developed in the project will benefit the country by providing models for designing and

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inundation, loss of wetlands, erosion, and saltwater intrusion. **Economic Impact:** Climate change could significantly reduce Cambodia's GDP due to impacts on infrastructure, crop loss, and reduced worker productivity. The economy relies heavily on climate-sensitive sectors like agriculture and tourism. **Inadequate Infrastructure and Coping Capacity:** The country has limited infrastructure, making recovery from climate-related disasters challenging. There's a severe lack of coping capacity at various levels **Lack of Technical Expertise and**	installing filter nets to capture waste. **Ecosystem-Based Adaptation (EbA):** Reducing the impacts of coastal climate hazards by recovering coastal ecosystems, specifically through the restoration of destroyed mangrove ecosystems and developing EbA management plans. **Livelihood Diversification:** Exploring and supporting livelihood diversification options (e.g., inland fisheries, fisheries product processing, seaweed cultivation, mat making, livestock raising) for vulnerable households, including women and youth, to increase income and build economic	livelihood diversification options. **Component 3:** Participatory vulnerability/risk assessments, capacity building for government entities and communities on climate change adaptation, training on waste and wastewater management, training on resilient housing, community organization for infrastructure management, and knowledge sharing.	livelihood diversification. **Outcome 3:** Improved effectiveness of climate adaptation planning/implementation, increased coping capacity, and sustained/scaled-up actions for transformative adaptation interventions at the local level.	building opportunities for communities and enhances livelihood options. - **Social Benefits:** It promotes social integration by fully engaging communities, especially women and youth, and reducing community vulnerabilities in the long run. It aims to empower women and ensure equal participation in project activities and decision-making. - **Environmental Benefits:** Focuses on maintaining and restoring essential ecosystem functions in the coastal zone to reduce climate change-induced flooding, erosion, and saltwater intrusion through ecosystem-based adaptation measures.	constructing future coastal protection infrastructure, reducing the need for immensely costly solutions like seawalls and dikes. **Lessons for Future Funding:** The project approach will provide powerful lessons and insights for future funding opportunities. **National Integration:** Once benefits to local, vulnerable communities are shared nationally, other provincial/district authorities are likely to welcome adaptation initiatives, facilitating the up-scaling/out-scaling of project activities to other areas. The project's alignment with government priorities and national strategies ensures its sustainability and potential for broader integration.

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Knowledge: There's a lack of technical expertise to interpret climate change projections and insufficient knowledge about locally relevant and practical information on potential climate impacts. Vulnerable groups are often not reached by local authorities due to limited capacity to act on climate change adaptation. **Gender Disparities:** Cultural norms and household duties often impede women's participation in community consultations and decision-making for sustainable management initiatives, potentially leading to unequal	resilience against climate disasters. **Capacity Building and Knowledge Sharing:** Enhancing institutional capacity at provincial and local levels, for government entities and communities, in decision-making and management of adaptation measures. This includes conducting participatory vulnerability/risk assessments, mainstreaming climate change adaptation into development plans, and training communities on resilient housing/latrines construction techniques. The project will also share knowledge and lessons learned				

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benefits or disproportionate negative impacts from projects.	through documentation for increased adaptive capacities and upscaling. **Community Engagement and Gender Integration:** Adopting a participatory approach that ensures community engagement, particularly women and youth, in planning, assessments, and monitoring. Gender-focused indicators and a gender action plan are in place to ensure equal participation and benefits for women.				
Climate Change Adaptation through Protective Small-scale Infrastructure Interventions in Coastal Settlements of Cambodia (2021-2025)					

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High Climate Vulnerability: Cambodia is highly vulnerable to climate change, experiencing more frequent and intense floods, droughts, windstorms, and saltwater intrusion due to rising sea levels. Coastal zones are particularly at risk, affecting communities, infrastructure, and livelihoods. **Economic Impact:** Climate change impacts significantly on Cambodia's economy, especially in vulnerable sectors like agriculture and fisheries. Extreme weather events lead to substantial economic losses and	**Component 1**: Community scale knowledge and capacity enhanced to sustain the adaptation benefits of the project's investments **Component 2**: Government planning and technical capacity enhanced to sustain and enhance the project's adaptation benefits **Component 3**: Resilience built through investment in small-scale protective and basic service infrastructure and natural assets	**Outputs 1:** Rehabilitated/upgraded drainage systems, renovated water gates/dykes, improved rainwater harvesting structures, and resilient housing/latrines constructed/rehabilitated. **Outputs 2:** Training programs for communities and local authorities on resilient construction, waste management, and early warning systems; development of best-practice case studies; establishment of weather stations and tide gauges with early warning capabilities. **Outputs 3:** Case studies and documentation of	**Outcome 1: Increased Adaptive Capacity through Infrastructure:** Vulnerable coastal settlements have increased adaptation and resilience to climate change impacts through concrete small-scale infrastructure interventions. **Outcome 2: Enhanced Adaptive Capacity of Communities and Institutions:** Local and national institutions and communities have strengthened capacity to plan, implement, and monitor climate change adaptation and resilience interventions.	**Reduced Vulnerability and Increased Resilience:** Direct protection of lives, livelihoods, and assets of vulnerable coastal communities from climate change-induced disasters like floods and storms. **Improved Health and Sanitation:** Through resilient housing and improved water and sanitation facilities. **Economic Benefits:** Enhanced functionality of local markets and improved year-round income for vendors (many of whom are women) due to better drainage and reduced disruptions from heavy rainfall. Protection of tourism-related infrastructure. **Empowered Communities:** Increased capacity and knowledge within communities and local governments to undertake	**Replication and Mainstreaming:** The project aims to develop best-practice case studies and models that can be replicated in other vulnerable coastal areas across Cambodia. **Policy Integration:** Lessons learned and documented experiences can inform national and sub-national climate change adaptation policies and planning. **Sustainable Management:** Emphasis on engaging communities and local authorities in the management, monitoring, and maintenance of infrastructure investments to ensure their long-term sustainability. **Leveraging Eco-tourism:** Demonstrating how eco-tourism can provide a sustainable financing mechanism for climate adaptation interventions, potentially leading to further investments in such integrated approaches. **Enhanced Early Warning Networks:** The installation of

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disruptions to livelihoods. **Inadequate Infrastructure:** Existing infrastructure in coastal settlements is often insufficient to withstand the increasing intensity of climate change impacts, leading to damage to homes, roads, and other essential facilities. This is particularly problematic in areas with high population density and economic activity. **Limited Adaptive Capacity at Local Level:** There is a lack of technical capacity and knowledge at the local level to effectively plan, implement, and manage climate change adaptation		successful interventions.	**Outcome 3: Knowledge Management and Learning:** Knowledge and lessons learned from project interventions are captured, documented, and disseminated to inform future adaptation efforts.	and sustain adaptation actions. **Gender Equality:** Specific focus on ensuring women's participation and benefits, recognizing their crucial role in community resilience and economic activities. **Environmental Protection:** Protecting coastal ecosystems through resilient infrastructure and reduced pollution from improved drainage.	weather stations and tide gauges forms part of a broader strategy to enhance national early warning systems.

Gaps and problems	Solutions or Activities	Outputs	Outcomes	Impact	Future programs or initiatives or upscaling
measures. Communities often lack the resources and expertise to build climate-resilient infrastructure. **Water Management Issues:** Coastal areas face challenges with drainage, rainwater harvesting, and saltwater intrusion, impacting water availability for consumption and agriculture. **Limited Early Warning Systems:** Insufficient early warning systems leave communities vulnerable to sudden climate-related hazards, leading to greater loss of life and property. **Gender Disparities:** Women, who often play a crucial role in household water					

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management and local economies, are disproportionately affected by climate change impacts and may have limited participation in adaptation planning.					
Lao PDR					
Enhancing Adaptive Capacity in Lao PDR Provinces, and Building Resilient Housing in Vulnerable Communities (2024-2028)					
Severe climate vulnerability: Lao PDR suffers frequent floods, droughts, storms, and landslides, with climate events causing GDP losses of up to 3.6% annually. **Low adaptive capacity**: Limited institutional, financial, and technical capacity, especially at subnational levels, hinders climate	**Capacity Building and Institutional Strengthening:** Increasing adaptive capacity of communities and provincial institutions through training on climate risk and vulnerability assessments, and integrating climate change into urban plans. This includes developing town	Output 1: Capacity assessments and risk/vulnerability assessments conducted, training for provincial and district staff on climate change integration into urban plans and vulnerability assessments. **Output 2:** New and upgraded meteorological and hydrological stations.	**Outcome 1:** Increased adaptive capacity of communities and provincial institutions to develop and sustain climate-resilient community infrastructure and housing. **Outcome 2:** Strengthened capacity of national and sub-national centers and	**Reduced Climate Vulnerability:** Decreased losses from extreme weather events and enhanced resilience of communities. **Improved Housing Resilience:** People are no longer constructing houses without considering climate change, leading to more resilient shelter. **Enhanced Institutional Capacity:** Increased ability of sub-national institutions	**Sustainability and Scaling Up:** The project aims to enable sustainability and scaling up of activities by strengthening multi-level governance and providing input into national policy and planning. **Knowledge Sharing and Replication:** Effective knowledge management will ensure that lessons learned are captured and disseminated to all levels of government and added to existing knowledge repositories for continuous growth and

Gaps and problems	Solutions or Activities	Outputs	Outcomes	Impact	Future programs or initiatives or upscaling
change response and planning. **Poor housing resilience**: Widespread use of non-resilient housing materials (bamboo, grass, wood) and poor construction practices leave communities exposed. **Weak urban planning**: Town plans are outdated or non-functional; informal settlements lack climate-resilient infrastructure and services. **Insufficient early warning systems**: Many districts lack basic hydro-meteorological equipment to monitor and prepare for climate hazards. **Vulnerable groups at risk**: Ethnic minorities,	master plans that integrate climate change adaptation measures. **Resilient Infrastructure and Housing:** Enabling the local housing sector to mitigate risks through improved houses and constructing or improving community evacuation centers. This includes training communities on resilient housing/latrine construction techniques. **Improved Early Warning Systems:** Constructing and upgrading meteorological and hydrological stations to provide climatic information and early warnings.	**Output 3:** Dissemination workshops, development of policy guidance documents, IEC materials, manuals on evacuation centers and resilient housing construction, and training guidelines.	networks to respond rapidly to extreme weather events. **Outcome 3:** Strengthened community awareness and mainstreaming adaptation through advocacy and knowledge management.	to respond to and mitigate climate impacts through local adaptation planning and implementation. **Increased Awareness:** Town populations will be aware of predicted climate change impacts and appropriate responses. **Economic and Social Benefits:** Protection of lives, livelihoods, and infrastructure through extended early warning systems, benefiting over 200,000 direct and indirect beneficiaries. It promotes social integration and empowers women by ensuring their participation in decision-making processes.	updates. This includes sharing through documentation of climate-resilient actions. **Inform Future Policies and Planning:** Documented knowledge will be available to inform climate policy and planning, enhancing climate change adaptation in the shelter sector. **Data Management Practices:** The project will establish and strengthen data management practices with a long-term view that continues beyond the project's completion. **Integration with National Strategies:** The project aligns with national development plans, such as the 9th National Socioeconomic Development Plan, ensuring its sustainability and potential for broader integration.

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women, the poor, IDPs, and informal workers face compounded vulnerabilities due to lack of resources and support systems.	**Community Awareness and Knowledge Management:** Strengthening community awareness of climate change impacts and adaptation measures through advocacy and knowledge management. This involves capturing and disseminating project activities and results, producing IEC materials, and training school teachers. **Policy and Technical Guidance Development:** Developing strategies for policy development on integrating climate change adaptation in the housing sector and technical guidance on				

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	Housing, Land, and Property (HLP). **Participatory Approach and Gender Integration:** Ensuring community engagement, particularly women and vulnerable groups, throughout the project preparation and implementation, with a Gender Action Plan to promote equal participation.				
Building climate and disaster resilience capacities of vulnerable small towns in Lao PDR (2020-2026)					
High Climate Vulnerability: Lao PDR is increasingly affected by extreme weather events like floods, landslides, tropical storms, cyclones, and droughts. Its high dependency on climate-sensitive	**Component 1**: Develop town level master plans which integrate climate change adaptation into socially inclusive infrastructure, spatial planning and land use management in and beyond the project	**Output 1:** Climate-resilient urban development plans and strategies, technical guidelines for resilient infrastructure, training for government officials, and improved data and information for planning.	**Outcome 1: Enhanced Capacity for Climate-Resilient Urban Development:** Local and national institutions have strengthened capacity for climate-resilient urban planning, development, and	**Reduced Vulnerability and Increased Resilience:** Direct protection of lives, livelihoods, and assets of vulnerable urban and peri-urban communities from climate change-induced disasters. **Improved Quality of Life:** Better access to essential	**Replication and Mainstreaming:** The project aims to develop replicable models and lessons learned that can be scaled up and applied in other vulnerable small towns across Lao PDR. **Policy Influence:** Documented results and experiences will inform national and sub-national policies on urban development,

Gaps and problems	Solutions or Activities	Outputs	Outcomes	Impact	Future programs or initiatives or upscaling
natural resources and low adaptive capacity make it particularly vulnerable. **Rapid Urbanization and Unplanned Development:** Rapid urbanization, especially in small towns, is often unplanned, leading to inadequate infrastructure, increased flood risk, and environmental degradation. This exacerbates climate change impacts. **Inadequate Infrastructure:** Existing infrastructure (drainage, roads, water supply, sanitation, housing) in vulnerable small towns is often insufficient or not climate-resilient, leading to recurrent	area. Capacity built at District, Provincial and National level to plan for climate resilient infrastructure development and to maintain and manage infrastructure **Component 2**: Socially inclusive infrastructure built in target towns that protects people from climate change related impacts and provides continuous services despite current and anticipated future changes in the climate **Component 3**: Knowledge and awareness enhanced from national to local levels along the economic corridor, ensuring sustainability and potentially leading	**Output 2:** Rehabilitated/constructed drainage systems, resilient roads, flood protection structures, community shelters, improved water supply/sanitation, and resilient houses. **Output 3:** Community-based DRR plans, early warning systems established/strengthened, and community training on preparedness and response.	infrastructure investments. **Outcome 2: Climate-Resilient Infrastructure and Basic Services:** Vulnerable communities benefit from climate-resilient small-scale infrastructure and improved access to basic services. **Outcome 3: Strengthened Community Resilience and Early Warning Systems:** Communities have increased knowledge, awareness, and capacity to respond to climate-induced disasters.	services like clean water and sanitation, safer living conditions, and reduced disruption from floods and other hazards. **Economic Benefits:** Reduced economic losses from climate disasters, protection of local businesses, and potential for sustainable urban growth. **Stronger Governance:** Enhanced capacity of local governments to integrate climate change into urban planning and disaster management, leading to more sustainable and resilient development. **Empowered Communities:** Increased knowledge, skills, and active participation of communities, including marginalized groups, in planning and implementing adaptation measures.	climate change adaptation, and disaster risk reduction. **Long-term Sustainability:** The capacity building for local authorities and communities, combined with the integration of climate resilience into urban planning, aims to ensure the sustained operation and maintenance of infrastructure and continuity of adaptation efforts. **Integrated Urban Development:** The project promotes an integrated approach that can be further developed to include other aspects of sustainable urban development beyond climate resilience. **Knowledge Sharing Network:** Establishment of a knowledge management system and platforms for sharing information will facilitate continuous learning and collaboration for future initiatives. **Strategic Partnerships:** Continued collaboration with

Gaps and problems	Solutions or Activities	Outputs	Outcomes	Impact	Future programs or initiatives or upscaling
damage, disruption of services, and increased risk during extreme weather events. **Limited Capacity for Planning and Implementation:** Local governments and communities have limited technical and financial capacity to plan, implement, and manage climate-resilient urban development and disaster risk reduction (DRR) measures. **Lack of Early Warning Systems:** Insufficient early warning systems and disaster preparedness mechanisms leave communities vulnerable to sudden onset hazards. **Water Scarcity and Quality Issues:**	to policy changes at the national level			**Gender Equality:** Emphasis on ensuring women's participation and benefits, addressing their specific vulnerabilities and roles in household and community resilience.	various stakeholders, including government agencies, development partners, and local communities, will foster a robust network for future adaptation and urban development programs.

Gaps and problems	Solutions or Activities	Outputs	Outcomes	Impact	Future programs or initiatives or upscaling
Climate change impacts water availability and quality, affecting health and livelihoods. **Gender and Vulnerable Group Disparities:** Women, children, the elderly, and people with disabilities are disproportionately affected by disasters and often have limited participation in adaptation planning and decision-making.					
Indonesia					
EMBRACING THE SUN: Redefining Public Space as a Solution for the Effects of Global Climate Change in Indonesia's Urban Areas (2022-2025)					
High Climate Vulnerability: Indonesia, a large archipelagic country, is highly vulnerable to climate change	**Component 1**: Research and Development on city-wide adaptation to climate change through public spaces	**Output 1:** Research on climate-resilient public spaces (best practices in Asia Pacific), development of assessment tools and	**Outcome 1: Increased Urban Resilience:** Achieved through the development of a new public space typology and guidelines that	**Enhanced Life Quality and Expectancy:** Positive impact on the life quality and expectancy of communities in Samarinda.	**Replicability:** Knowledge generated from the pilot project is anticipated to be replicable to other cities in Indonesia and internationally, adaptable to

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impacts, including rising sea levels, increasing temperatures, changing rainfall patterns, and more frequent extreme weather events. It ranks 12th globally for high mortality risks from multiple hazards. **Increasing Disaster Risk:** Floods, droughts, storms, and forest fires are being exacerbated by climate variability, straining public expenditures. For example, the 2007 Jakarta floods caused over US$900 million in damages. **Economic Impacts:** Climate change negatively affects vulnerable sectors like agriculture, plantations, and	**Component 2**: Awareness raising and local resilience strengthening through the design and implementation of a new public space typology **Component 3**: Capacity building, knowledge management and communication **Component 4**: Monitoring	methodologies, and creation of public space guidelines incorporating new typologies. **Output 2:** Community profiling for targeted locations, community engagement in design processes, and co-development and construction of climate-resilient public spaces. Establishment of community groups for public space maintenance. **Output 3:** Training for community groups on project findings, training for government officials on methodologies for replication, and capturing/disseminating lessons learned and best practices. **Output 4:** Evaluation of place quality before, during, and after	can inform city-level planning processes. **Outcome 2: Increased Awareness and Local Resilience Strengthening:** Through the design and implementation of a new public space typology. **Outcome 3: Increased Capacity, Knowledge Sharing, and Awareness:** At city and community levels on climate-resilient strategies and design options for public spaces.	**Increased Community Resilience:** Integrated network of public spaces will function as infrastructure to increase community resilience, provide basic resource access, and prepare for flood events. **Reduced Economic Loss:** Helping the city reduce annual losses due to climate-related disasters. **Fostered Community Connection and Sustainability:** Public spaces will foster community connection, integrate existing public spaces, and create an ecosystem benefiting the entire city. **Improved Public Health and Environment:** Indirectly addressing public health risks from climate change and promoting environmental preservation.	communities with similar environmental changes. **Network of Public Spaces:** The vision is to create a network of public spaces that will support a new ecosystem beneficial to the entire city. **Sustained Community Engagement:** Establishment of ongoing community groups, initiatives, and projects for the maintenance and activation of new public spaces. **Policy Advocacy:** The project's training and knowledge management activities are crucial for mainstreaming climate adaptation agendas not only in Samarinda but also in other Indonesian cities. Internal meetings with government municipalities will discuss further steps related to climate-resilient mainstreaming. **Sustainable Task Force:** The municipal government will establish a special task force to ensure sustainable project development and

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fisheries, impacting rural incomes, food prices, and national food security. Poorest communities and vulnerable groups (women, children, elderly, disabled) are expected to bear the greatest burden. **Reactive Adaptation Measures:** Existing adaptation measures are often reactive, aiming to cope with immediate effects rather than proactively integrating climate resilience. **Inadequate Public Space Typology:** Traditional urban development paradigms often fail to integrate public spaces as key elements for climate adaptation and		interventions, and policy advocacy for mainstreaming climate resilience.	**Outcome 4: Increased Understanding and Awareness of Intervention Impact:** Through monitoring and evaluation activities.	**Concrete Adaptation Actions:** Pursuing adaptation actions based on strategic goals of resilience, response, and recovery. **Social and Ecological Anchor:** The new public space is envisioned as an ecological-social "anchor" to support local communities, augmenting social dimensions with environmental features.	implementation, not dependent on specific individuals. **Long-term Knowledge Management:** Project sustainability heavily relies on knowledge management, public engagement, and stakeholder collaboration, ensuring achievements and future replication. This includes establishing a community forum for coordination and knowledge management

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community engagement. **Limited Awareness and Engagement:** Despite increasing awareness campaigns, there's a need to enhance community and government officials' understanding and engagement in climate adaptation strategies.					
Enhancing the adaptation capability of coastal community in facing the impacts of climate change in Negeri (village), Asilulu, Ureng and Lima of Leihitu District Maluku Tengah Regency Maluku Province (2022-2025)					
Climate Change Vulnerability: Indonesia, including Maluku Province, is highly vulnerable to climate change, experiencing rising sea levels, increased storm intensity, and changes in rainfall patterns.	**Component 1**: Strengthening the adaptation of traditional fishermen in facing changes fish migration and circulation patterns due to climate change **Component 2**: Coastal ecosystems repair for	**Output 1:** Map for new fishing ground distribution, updated fishing season calendar, provision of cold storage, and procurement of Rumpon/Fish Aggregating Devices (FAD).	**Outcome 1: Increased Adaptive Capacity of Traditional Fishermen:** Through strengthening their knowledge and tools to respond to climate-induced changes in fish patterns.	**Improved Community Resilience:** Reduced vulnerability and increased adaptability of coastal communities to climate change threats. **Enhanced Livelihoods:** Increased and diversified income for fishermen and women through new fishing grounds,	**Replication and Scaling Up:** The project aims for results to be replicated and contribute to broader climate change adaptation efforts in Maluku Province and potentially beyond. **Village-Owned Enterprises (BUMDes):** Projects with economic value, such as fish and seaweed processing, will be encouraged to become Village-

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Impact on Coastal Communities and Livelihoods: Coastal communities, heavily reliant on fishery and marine sectors, face severe challenges such as unpredictable fish harvesting seasons, shifts in fish migration patterns, and dangers from extreme waves and storms. **Ecological Degradation:** Rising sea temperatures lead to coral bleaching and damage, impacting marine ecosystems crucial for fish populations. **Infrastructure Damage:** Coastal areas frequently experience damage to road infrastructure and embankment walls due to tidal	the resilience communities and alternate location for source fishing **Component 3**: Alternative economic development in coastal areas that are climate- resilient by utilizing **Component 4**: Development of supporting facilities to anticipate the impacts of coastal flooding and tidal waves	**Output 2:** Restoration of damaged coral reefs, and establishment of floating net cages for fish cultivation. **Output 3:** Floating fish net ponds for seaweed cultivation, and training for women in processing fish and seaweed products. **Output 4:** Restoration of approximately 500 meters of embankment/wave-breaking structures, protecting village roads and community houses.	**Outcome 2**: Improved Coastal Ecosystems for Community Resilience **Outcome 3**: Diversified Livelihoods and Strengthened Economic Role for Women **Outcome 4**: Increased Resilience of Community Infrastructure	aquaculture, and processing skills. **Protected Infrastructure:** Reduced damage to roads and settlements from tidal waves and storms. **Ecosystem Health:** Restoration of coral reefs contributes to healthier marine ecosystems. **Knowledge and Capacity:** Increased knowledge and ability of fishermen and communities to adapt to climate change impacts. **Poverty Reduction:** By strengthening livelihoods and protecting assets, the project aims to reduce poverty and marginalization. **Gender Equality:** Increased involvement and empowerment of women in economic activities and decision-making related to adaptation.	Owned Enterprises, ensuring sustainability through village funds. **Eco-tourism Development:** Youth communities trained in coral reef care (Component 2) are expected to develop eco-tourism concepts, leveraging existing and future tourism potentials. **Long-Term Monitoring and Maintenance:** Emphasis on ongoing monitoring and maintenance of infrastructure (e.g., embankments) by communities, local government, and public works office. **Policy Alignment:** The project's findings and successful interventions can inform and influence policies at the Negeri level (e.g., *Sasi Laut* traditional rules) and contribute to technical handbooks on climate change adaptation.

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waves and strong winds. **Limited Adaptive Capacity:** Communities and local governments have varied perceptions of climate change, weak institutional frameworks, and limited capacity to adapt to these changes. **Drinking Water Scarcity:** Access to drinking water sources like rainwater and groundwater is often limited, making communities vulnerable to rainfall variability. **Gender Disparities:** The involvement of vulnerable groups and women's groups in adaptation activities has been limited, and their leadership					

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abilities are still very restricted.					
Safekeeping-Surviving-Sustaining towards Resilience: 3S Approach to Build Coastal City Resilience to Climate Change Impacts and Natural Disasters in Pekalongan City, Central Java Province (2021-2025)					
High Climate Vulnerability and Land Subsidence: Pekalongan City is extremely vulnerable to climate change, exacerbated by severe land subsidence (up to 15-20 cm/year). This combination leads to chronic flooding, permanent inundation, and increasing disaster risk. **Direct Impacts on Livelihoods and Infrastructure:** The combined effects of sea-level rise and land subsidence cause widespread damage to	**Component 1**: Enhancing protection along the coastal line of Pekalongan City **Component 2**: Enhancing coastal community capacity in developing and implementing Local Climate Change Adaptation Action Plan (RAD API), climate change information system, Climate Smart Initiative **Component 3**: Strengthening vertical coordination by enhancing provincial	**Output 1:** Improved main drainage, mini polders constructed, upgraded embankment systems, elevated houses/community shelters, rehabilitated boreholes/water towers, and an integrated early warning system. **Output 2:** Communities participating in alternative resilient livelihoods, access to clean water provided.	**Outcome 1: Increased Adaptive Capacity of Communities & Structures:** Through the implementation of integrated and structural adaptation solutions. **Outcome 2: Strengthened Livelihoods & Access to Basic Services:** Through climate-resilient economic development and basic service provision.	**Reduced Vulnerability and Increased Resilience:** Direct protection of lives, livelihoods, and assets from floods and other climate-induced disasters, significantly enhancing the city's resilience. **Improved Quality of Life:** Better access to clean water, improved sanitation through resilient housing, and reduced health risks associated with chronic flooding. **Economic Stability and Growth:** Diversified and more resilient livelihoods, protecting income sources for vulnerable	**Replication and Mainstreaming:** The 3S approach and lessons learned from Pekalongan are intended to serve as a model for other vulnerable coastal cities in Indonesia and beyond. **Policy Integration:** The project's findings will inform the development of a City-Level Adaptation Plan for Pekalongan and contribute to national climate change policies and strategies. **Long-term Sustainability:** The establishment of community-based management and maintenance groups, along with local government capacity building, aims to ensure the longevity of interventions. **Public-Private Partnerships:** The project structure is designed to

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homes, public facilities, and infrastructure, displacing communities and severely impacting socio-economic activities, particularly fisheries and batik industries. **Inadequate Drainage and Coastal Protection:** The existing drainage system is insufficient to handle the increased flooding, and coastal protection infrastructure is weak or non-existent in many vulnerable areas. **Limited Adaptive Capacity and Awareness:** There's a lack of understanding and capacity among communities and local government regarding	government's capacity in mainstreaming climate change adaptation and resilience into Central Java Province development plan which in turn could foster better climate-related policy on climate financing and bottom-up planning **Component 4**: Strengthening vertical coordination and collaboration between national and local government in climate adaptation context and Enriching knowledge, toolkits and methodologies coastal resilience for the national government **Component 5**: Improving	**Output 3:** Local government officials trained, communities trained, community-based disaster management groups established, and knowledge management system developed.	**Outcome 3: Enhanced Knowledge & Capacity:** Of government institutions and communities on climate change adaptation & DRR.	communities and industries (e.g., batik). **Enhanced Environmental Conditions:** Improved drainage and waste management contribute to a healthier urban environment and potentially reduce land subsidence. **Empowered Communities:** Increased awareness, knowledge, and active participation of communities, including marginalized groups, in planning and implementing adaptation measures. **Stronger Governance:** Enhanced capacity of local government to integrate climate change adaptation into urban planning and disaster management frameworks.	attract future investments and foster collaboration for broader impact. **Continuous Monitoring and Evaluation:** The ongoing monitoring of project impacts and performance provides data for adaptive management and justification for future initiatives.

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effective adaptation strategies. Traditional and reactive responses are common. **Water Scarcity and Quality Issues:** Increasing demand for clean water, coupled with saltwater intrusion into aquifers due to over-extraction and sea-level rise, leads to water scarcity and quality degradation. **Solid Waste Management:** Poor solid waste management practices exacerbate drainage problems and environmental degradation. **Gender and Vulnerable Group Disparities:** Women, children, elderly, and people with	community's resilience through initiation of alternative livelihood and improvement of sanitation facility				

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disabilities are disproportionately affected by disasters and may have limited participation in decision-making processes.					
Adapting to Climate Change through Sustainable Integrated Watershed Governance in Indigenous People of Ammatoa Kajang Customary Area in Bulukumba Regency, South Sulawesi Province, Indonesia (2021-2024)					
High Climate Vulnerability: South Sulawesi, and particularly the Ammatoa Kajang customary area, is highly vulnerable to climate change impacts, including increased rainfall intensity, prolonged dry seasons, rising temperatures, and more frequent extreme weather events.	**Component 1**: Developing model of sustainable integrated watershed management inside the Indigenous People of Ammatoa Kajang customary area (Apparang, Baontoa and Raowa Watershed) **Component 2**: Promoting and practicing sustainable livelihood adaptive to climate change at the	**Output 1:** Formal recognition of *Pasang Ri Kajang* in adaptation planning, improved coordination mechanisms between customary and government institutions, and capacity building for local authorities and customary leaders. **Output 2:** Implementation of climate-resilient	**Outcome 1: Strengthened Customary and Institutional Capacity:** Customary and institutional capacity enhanced to support sustainable integrated watershed governance as a climate change adaptation strategy. **Outcome 2: Climate-Resilient Livelihoods and Infrastructure:** Increased resilience of the Ammatoa Kajang	**Enhanced Climate Resilience:** Increased ability of the Ammatoa Kajang community to cope with and adapt to climate change impacts, reducing vulnerability to droughts, floods, and other extreme events. **Improved Food Security and Livelihoods:** Diversified and more stable income sources for farmers, leading to improved food security and reduced poverty.	**Replication:** The project aims to develop a replicable model for climate change adaptation in other indigenous communities in Indonesia and beyond, especially those reliant on traditional wisdom and natural resources. **Policy Advocacy:** The project's success and lessons learned will inform provincial and national policies on indigenous rights, climate change adaptation, and watershed management. **Long-term Monitoring:** The establishment of a monitoring system for climate and watershed impacts will provide

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Impact on Agriculture and Livelihoods: Unpredictable rainfall patterns lead to crop failures (e.g., cocoa, rice, corn), reduced agricultural productivity, and income instability for the community, who are primarily farmers. This directly affects food security and livelihoods. **Environmental Degradation:** Deforestation, soil erosion, and unsustainable land management practices, often driven by external pressures (e.g., logging), exacerbate climate change impacts, leading to reduced water availability and degraded ecosystems.	three watershed landscapes in the Indigenous People of Ammatoa Kajang customary area. **Component 3**: Lobbying and Policy Advocacy for climate adaptive sustainable integrated watershed management and Climate Adaptation Action plan to regency government of Bulukumba and South Sulawesi Provincial government. **Component 4**: Raising awareness, knowledge management and disseminating information on the importance of watershed and climate change impact to the Indigenous People of	agricultural practices, improved water supply and sanitation systems, and construction/rehabilitation of resilient housing/latrines. **Output 3:** Monitoring system for climate and watershed impacts, documentation of traditional wisdom and adaptation strategies, and knowledge-sharing platforms/materials.	indigenous community through the adoption of climate-resilient livelihoods and basic infrastructure improvements. **Outcome 3: Enhanced Knowledge Management and Dissemination:** Climate change adaptation knowledge and lessons learned from the Ammatoa Kajang community are documented and widely disseminated.	**Health Benefits:** Better access to clean water and improved sanitation reduce health risks, especially water-borne diseases. **Environmental Preservation:** Sustainable watershed management practices lead to healthier ecosystems, reduced deforestation, soil erosion, and improved biodiversity. **Empowered Indigenous Community:** Strengthening of customary law and active community participation enhances self-determination and sustainable resource management. **Gender Equality:** Increased involvement of women in decision-making and economic activities.	ongoing data for future planning and interventions. **Integration with Government Programs:** The project's alignment with national and provincial development plans facilitates its integration into broader government initiatives.

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Water Scarcity and Contamination: Droughts cause water scarcity for agriculture and daily needs. Traditional water sources are vulnerable to contamination during heavy rains due to poor sanitation and waste management. **Limited Adaptive Capacity:** The indigenous community, despite traditional wisdom, lacks modern knowledge, tools, and technical capacity to effectively adapt to the new challenges posed by climate change. **Weak Institutional Frameworks:** There's a lack of formal recognition and integration of indigenous customary	Ammatoa Kajang customary area.				

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laws (Pasang Ri Kajang) into contemporary climate change adaptation strategies and watershed management. This leads to conflicts over resource use and undermines traditional governance. **Poor Sanitation and Health Risks:** Traditional latrines and limited access to clean water contribute to health risks, especially during extreme weather events. **Limited Access to Information:** Lack of accessible climate information and adaptation strategies tailored to the indigenous context.					

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Community Adaptation for Forest-Food Based Management in Saddang Watershed Ecosystem (2020-2022)					
Climate Change Vulnerability: Communities in the Saddang Watershed are highly vulnerable to climate change, experiencing increased rainfall intensity, prolonged dry seasons, rising temperatures, and more frequent extreme weather events. **Impact on Agriculture and Livelihoods:** Unpredictable rainfall patterns lead to crop failures (e.g., rice, coffee, cocoa), reduced agricultural productivity, and income instability for the community, who are primarily farmers. This directly affects	**Component 1**: Strengthened Social Forestry in encouraging forest food in the upstream of Saddang Watershed which has implications for the improvement of the environment and the increase of people's income **Component 2**: Improved coastal governance and carrying capacity in support of climate change adaptation downstream of Saddang Watershed **Component 3**: Strengthened cross cutting policies in ensuring the sustainability of	**Output 1:** Rehabilitated degraded lands, implemented soil and water conservation measures, and developed forest-food based management systems. **Output 2:** Climate-resilient agricultural practices adopted (e.g., new crop varieties, irrigation techniques), and alternative livelihood options developed. **Output 3:** Training programs conducted for communities and government officials, community-based	**Outcome 1: Increased Adaptive Capacity of Ecosystems:** Enhanced ecosystem resilience and reduced environmental degradation in the Saddang Watershed. **Outcome 2: Climate-Resilient Livelihoods and Food Security:** Improved food security and diversified livelihoods for vulnerable communities through the adoption of climate-resilient agricultural practices. **Outcome 3: Strengthened Institutional and Community Capacity:** Enhanced capacity of	**Enhanced Climate Resilience:** Increased ability of communities to cope with and adapt to climate change impacts, reducing vulnerability to droughts, floods, and other extreme events. **Improved Food Security and Livelihoods:** Diversified and more stable income sources for farmers, leading to better food security and reduced poverty. **Environmental Benefits:** Healthier watershed ecosystem, reduced deforestation and soil erosion, improved water quality and availability, and enhanced biodiversity. **Community Empowerment:** Increased awareness, knowledge, and active participation of	**Replication and Dissemination:** The project aims to develop a replicable model for forest-food based climate adaptation that can be applied in other watersheds and regions with similar vulnerabilities. **Policy Advocacy:** Lessons learned and best practices will be documented and shared to influence local and national policies on climate change adaptation, watershed management, and food security. **Long-term Sustainability:** The project emphasizes building strong community institutions and fostering collaboration with local government to ensure the long-term sustainability of interventions. **Public Awareness:** Ongoing public awareness campaigns through various media will ensure continued engagement and understanding of climate

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food security and livelihoods. **Environmental Degradation:** Unsustainable land use practices, deforestation, and soil erosion exacerbate climate change impacts, leading to reduced water availability, degraded ecosystems, and increased vulnerability to landslides and floods. **Water Scarcity and Contamination:** Droughts cause water scarcity, while heavy rains can contaminate water sources due to poor sanitation and waste management. **Limited Adaptive Capacity and Knowledge:** Communities lack adequate knowledge	climate change adaptation **Component 4**: Capacity building and stakeholder support on climate change adaptation through knowledge dissemination and management	disaster management plans developed, and knowledge management system established.	local government and communities to plan, implement, and monitor climate change adaptation and DRR.	communities in decision-making and resource management. **Sustainable Development:** Contribution to sustainable land management and climate-resilient development in the region. **Gender Equality:** Recognition and empowerment of women's roles in household food security and environmental management.	change issues and adaptation strategies. **Knowledge Management:** The established knowledge management system will serve as a platform for continuous learning and sharing of information for future initiatives. **Strategic Partnerships:** Continuous engagement with local and national government agencies, research institutions, and NGOs to scale up successful interventions and integrate them into broader development plans.

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and technical capacity to effectively adapt to the new challenges posed by climate change, and traditional knowledge alone is often insufficient. **Weak Institutional Coordination:** There's a need for better coordination and synergy among government agencies, communities, and other stakeholders for integrated watershed management and climate change adaptation. **Gender Disparities:** Women's roles and specific vulnerabilities in the context of climate change impacts on forest and food resources need to be addressed.					

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Vietnam					
Enhancing the resilience inclusive and sustainable eco-human settlement development through small scale infrastructure interventions in the coastal regions of the Mekong Delta in Viet Nam (2020-2025)					
Extreme Climate Vulnerability: Vietnam, particularly the Mekong Delta, is highly vulnerable to climate change, experiencing rising sea levels, increased frequency and intensity of storms, floods, droughts, and saltwater intrusion. These impacts pose significant threats to lives, livelihoods, and infrastructure. **Impact on Agriculture and Fisheries:** Climate change severely affects the agricultural and aquaculture sectors, which are vital for the region's	**Component 1**: Institutional and community capacity building toward ecohuman settlement development for supporting to enhance local climate response actions **Component 2**: Action plan and strategy development for eco-human settlement, and integrating into planning and policy with participatory approach **Component 3**: Sustainability built through small-scale protective infrastructure	**Output 1:** Climate-resilient houses constructed/rehabilitated, resilient schools/health centers built/upgraded (serving as evacuation shelters), improved drainage systems, and coastal embankments/sea dykes repaired/constructed. **Output 2:** Climate-resilient livelihood models (e.g., integrated shrimp-mangrove farming) introduced and adopted, and access to clean water enhanced through new/rehabilitated supply systems and rainwater harvesting.	**Outcome 1: Increased Adaptive Capacity of Communities:** Strengthened adaptive capacity of communities to cope with the impacts of climate change through resilient housing and community infrastructure. **Outcome 2: Enhanced Livelihoods and Access to Basic Services:** Improved livelihoods of vulnerable communities through climate-resilient models and enhanced access to basic	**Reduced Vulnerability and Increased Resilience:** Direct protection of lives, livelihoods, and assets of over 70,000 beneficiaries from climate change-induced disasters (floods, storms, saltwater intrusion). **Improved Health and Well-being:** Better access to clean water and sanitation, leading to reduced water-borne diseases and improved public health outcomes. **Economic Benefits:** Diversified and more stable income sources for vulnerable communities through resilient agricultural and aquaculture practices.	**Replication and Mainstreaming:** The project is designed to generate replicable models and lessons learned that can be scaled up and applied in other vulnerable coastal areas within Vietnam and potentially other parts of the Mekong Delta. **Policy Influence:** The documented results and experiences will contribute to informing national and sub-national climate change adaptation policies and planning. **Long-term Sustainability:** The capacity building for local authorities and communities aims to ensure the sustained operation and maintenance of infrastructure and the continuity of adaptation efforts beyond the project's lifespan. Community ownership is crucial.

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economy and food security. Salinization of land, changes in water availability, and increased pest outbreaks impact crop yields and fisheries. **Inadequate Infrastructure:** Existing infrastructure in coastal settlements is often insufficient to cope with the escalating climate impacts, leading to recurrent damage to houses, schools, health centers, and transportation networks. **Lack of Access to Clean Water:** Saltwater intrusion contaminates freshwater sources, leading to scarcity of clean water for domestic use and agriculture, forcing	**Component 4**: Awareness Raising and Knowledge Management	**Output 3:** Training for local officials and communities, community-based DRR plans developed, knowledge management system established, and IEC materials disseminated.	services (especially clean water). **Outcome 3: Strengthened Institutional and Community Capacity:** Enhanced capacity of local institutions and communities to plan, implement, and monitor climate change adaptation and DRR.	Reduced economic losses from climate disasters. **Environmental Protection:** Contributions to ecosystem health through improved coastal protection and sustainable resource management (e.g., mangrove restoration implicitly through integrated farming). **Empowered Communities and Gender Equality:** Increased knowledge, skills, and active participation of communities, particularly women, in decision-making and adaptation efforts. **Sustainable Development:** Alignment with national climate change strategies and sustainable development goals.	**Data and Information Sharing:** The establishment of a knowledge management system will facilitate the sharing of climate data and adaptation strategies. **Strengthening Partnerships:** Continued collaboration with various stakeholders, including government agencies, research institutions, and local communities, will foster a robust network for future adaptation initiatives. **Integration with broader programs:** The project's alignment with Vietnam's national strategies for green growth and climate change response positions it for integration into larger national and regional programs.

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communities to purchase expensive fresh water or rely on unsafe alternatives. **Insufficient Knowledge and Adaptive Capacity:** Local communities and authorities often lack sufficient knowledge, technical expertise, and resources to implement effective climate change adaptation measures. **Limited Data and Information:** There is a need for better data collection and analysis to inform climate change adaptation planning at the local level. **Gender and Vulnerable Group Disparities:** Women, children, the elderly, and people with					

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disabilities are particularly vulnerable to climate impacts and may have limited participation in adaptation planning and decision-making.					
Papua New Guinea					
Adaptation of Small-Scale Agriculture for Improved Food Security of Resilient Communities in Papua New Guinea (ASSA) (2023-2027)					
High Climate Vulnerability: PNG is the 9th most climate-vulnerable country globally, facing extreme rainfall, droughts, sea level rise, and rising temperatures. **Food System Instability**: Climate impacts (e.g., El Niño events) have led to crop failures, especially of sweet potato, taro, cassava,	**Climate-Proofed Small-Scale Agricultural Production:** This includes the selection, validation, and dissemination of climate-resilient crops, and providing extension services for climate-resilient agriculture. It also involves implementing nature-based solutions to protect agro-ecological	**Output 1:** Selection and dissemination of climate-resilient crops, extension services for climate-resilient agriculture, and nature-based solutions to protect agro-ecological systems. **Output 2:** Digital platform to strengthen relationships among agricultural value chain actors, climate-proofed post-harvest processing	**Outcome 1: Enhanced Climate Resilience of Vulnerable Smallholder Farmers:** This will be achieved through climate-proofed small-scale agricultural production. **Outcome 2:** Improved Access to Appropriate Processing, Storage Technologies, and Profitable Markets	**Improved Food Security:** Reduced vulnerability of smallholder farmers to climate change impacts and improved their ability to adapt, leading to better food security. **Economic and Developmental Benefits:** Increased income for local producers through enhanced production, reduced post-harvest losses, and improved market access. Creation of green jobs, especially for	**Replication and Scaling Up:** Successful demonstration of climate-resilient practices will create a knowledge base for further replication and scaling up project interventions across the country. **Attracting Future Funding:** Increased evidence of successful interventions will build a business case for engagement with multilateral and bilateral donors like the Green Climate Fund (GCF) for impact at scale. **Policy and Regulatory Shifts:** Enhanced engagement with civil

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rice, and bananas—major food staples. **Limited Agricultural Support Services:** There's a lack of effective agricultural training, extension, research, and advisory services for smallholder farmers. Funding for these services at provincial and district levels is often insufficient. **Ecosystem Degradation**: Soil fertility decline, deforestation, and saltwater intrusion from sea level rise are reducing agricultural productivity. **Poor Infrastructure**: Damaged roads, storage facilities, and lack of digital systems impede farming operations and resilience building.	systems from landslides and coastal erosion and training communities on the importance of ecosystem services. **Climate-Resilient Access to Markets:** The project aims to improve access to lucrative markets with high-quality products and increase climate-resilient post-harvest management practices, including climate-proof storage solutions. This will be facilitated through training farmers on accessing post-harvest processing services. A digital platform will be developed to strengthen relationships among agricultural value chain actors.	facilities, and climate-proofed storage facilities. **Output 3:** Training-of-trainers to monitor, report, and verify impacts of climate-resilient practices, capacity building programs on climate-resilient agricultural production, and knowledge management and dissemination to policymakers and stakeholders.	**Outcome 3**: Scale-up of Climate-Resilient Agriculture Practices, Processing, and Storage Technologies, Facilitated through Capacity Building, and Knowledge Management	women and youth, promoting economic diversification. **Environmental Benefits:** Promotion of nature-based solutions (NbS) to sustain agricultural production and protect agro-ecological resources. Expected to reduce deforestation rates by improving productivity on existing agricultural land. **Social Benefits:** Boosts community buy-in and sustained adoption of practices through participatory and inclusive approaches, emphasizing gender equality, indigenous representation, and youth engagement. **Contribution to National Goals:** Directly contributes to PNG's sustainable development goals, the NDC adaptation target on food security, and poverty reduction.	society organizations, local, regional, and national authorities will create an enabling environment for policy and regulatory shifts that entrench climate-resilient practices as normative. **Sustainable Infrastructure Management:** Agreements will be established for the ownership, management, and monitoring/maintenance plans of community assets like climate-proofed processing and storage facilities to ensure long-term viability. **Knowledge Management:** The project emphasizes continuous knowledge management and learning, with evaluations contributing to the evidence base for climate change adaptation in PNG and the Pacific region.

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Gender Disparities: There's a sizeable gender gap in employment and women are often underrepresented in decision-making processes at local levels. **Lack of Agricultural Statistics and Information:** There is a lack of comprehensive agricultural statistics and readily available information.	**Capacity Building and Knowledge Management:** This component focuses on training of trainers to monitor and report on project impacts, building capacity for provincial authorities on climate-resilient agriculture, and disseminating knowledge to policymakers. This includes developing training curricula and manuals on resilient agronomic packages and conducting participatory monitoring, evaluation, and learning (MEL) of project activities. Technical training and support will be provided to model farmers for seed				

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	multiplication and farm management.				

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Queensland