ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Small Size Full Proposal

Country/Region: Indonesia/Asia & Pacific
Project Title: Building Climate Resilient District in Indonesia: Case of Sigi District
Thematic Focal Area: Rural Development
Implementing Entity: Kemitraan Partnership
Executing Entities: Konsorsium Lingkungan Adaptif, Berketahanan, Inovatif, dan Partisipatif (KOLABORASI) Koaksi Indonesia, Lingkar Temu Kabupaten Lestari (LTKL), Earth Innovation Institute (EII), Alliance for Water Stewardship Indonesia in partnership with the District of Sigi, Central Sulawesi.
AF Project ID:
IE Project ID: **Requested Financing from Adaptation Fund (US Dollars):** 998,868
Reviewer and contact person: Micol Ullmann Auger **Co-reviewer(s):**
IE Contact Person:

Technical Summary	The project "Building Climate Resilient District in Indonesia: Case of Sigi District" aims to increase the economic, social and ecosystem resilience of Sigi District towards the detrimental impacts of climate change. This will be done through the two components below: Component 1: Strengthened enabling environment to support Adaptation policy implementation in Sigi District. (USD 292,961). Component 2: WEF nexus approach applied to improve the effectiveness of District's Climate Change Adaptation Action Plan (USD 436,647) Component 3: Center of excellence of climate change adaptation at district level (USD 103,549). Requested financing overview: Project/Programme Execution Cost: USD 87,459 Total Project/Programme Cost: USD 833,157 Implementing Fee: USD 78,252 Financing Requested: USD 998,868

	The initial technical review raises several such as the need for more details regarding stakeholder mapping and consultations, a grievance mechanism, cost effectiveness, implementation arrangements, financial and project management, the ESMP, core indicators and the breakdown of the IE fee and project execution costs, as is discussed in the number of Clarification Requests (CRs) and Corrective Action Request (CAR) raised in the review.
Date:	December 11, 2024

Review Criteria	**Questions**	**Comments Initial Technical Review December 11, 2024**	**Response Sheet**
Country Eligibility	● Is the country party to the Kyoto Protocol and/or the Paris Agreement?	**Yes.**	**Yes**
	● Is the country a developing country particularly vulnerable to the adverse effects of climate change?	**Yes.** Indonesia is highly vulnerable to climate change impacts, especially shifts in rainfall patterns and increasing incidence of extreme events, including flooding and landslides which threaten livelihoods and food security.	**Yes**
Project Eligibility	1. Has the designated government authority for the Adaptation Fund endorsed the project/programme?	**Yes.**	**Yes**
	2. Does the length of the proposal amount to no more than One hundred (100) pages for the fully-developed project document, and one hundred (100) pages for its annexes?	**Yes.** The proposal is 82 pages inclusive of annexes. **CR1:** At Part I: Project/Programme information, please fill out the thematic focal area, check box on LOE, and check the appropriate box regarding the stage of submission.	**CR1:** At Part I: Project/Programme information, ● The thematic focal area has been completed. For details, please refer to **Page 1, Thematic Focal Area: Rural Development**. ● The LOE checkbox has been selected. For details, please refer to **Page 1, "Yes" checkbox**.

			• The appropriate box regarding the stage of submission has been checked. For details, please refer to **Page 1, "This proposal has been submitted before including at a different stage (concept, fully-developed proposal)" checkbox**.
	3. Does the project / programme support concrete adaptation actions to assist the country in addressing adaptive capacity to the adverse effects of climate change and build in climate resilience?	**Yes.** The project proposes a climate-resilient district through a Water-Energy-Food (WEF) nexus approach, with Sigi District serving as the pilot for these adaptation efforts. It aims to strengthen the enabling environment for climate resilience by enhancing institutional capacity, developing management tools, and supporting the implementation of adaptation policies. The project's activities include conducting climate change vulnerability and capacity assessments to identify needs, gaps, and levels of awareness. These efforts, combined with the establishment of a district-level working group and awareness and capacity-building exercises, will enable the formulation of appropriate adaptation measures to enhance the district's resilience to threats to water, energy, and food security. The resulting District-level Action Plan for Climate Change Adaptation will serve as a model for	**CR2: Please include a legible TOC on Page 22 under Project/Programme Objectives.** • The Table of Contents (TOC) has been revised for clarity. For details, please refer to **Page 23, Figure 5**.

		regional governance of water and agricultural practices. Additionally, the project proposes the construction of climate-resilient infrastructure, including a nature-based water treatment plant, distribution pipes, an improved agricultural drainage system, flood plains, a retention well, and the installation of solar PV systems. The project activities support AF Strategic outcomes 1 2, 3, 4, 5, 6, and 7. **CR2:** Please include a legible TOC on Page 22 under Project/Programme Objectives.	
	4. Does the project / programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Unclear.** The project is targeting 1,543 direct beneficiaries in 6 pilot villages of Pandere, Pakuli Utara, Simoro, Bangaa, Sambo, and Wisolo with strengthened capacity in climate adaptive agricultural, forestry and fisheries sectors, and improved livelihoods. The project would also support 50 District-level officials to" implement climate adaptation regional planning and to develop an economic resilience model". Activities are expected to strengthen Sigi's forestry, agriculture, and fisheries' sectors. A series of awareness raising activities on climate risk and the need for climate	**CAR1:** • Stakeholder mapping has been completed. For details, please refer to **Paragraphs 113-119, Table 11-13**, **Pages 45-57.** • The inclusion of vulnerable groups has been ensured. For details, please refer to **Paragraph 118, Table 12**, **Pages 51-53.** • Gender-disaggregated baseline data has been included. For details, please refer to **Paragraph 50, Table 4**, **Pages 16-17.** • All project stakeholders have been involved in the consultation

		change adaptation is expected to lead to the uptake of nature-based solutions and climate adaptive strategies to improve the district's water, food, and energy management. The project commits to the equitable distribution of benefits to vulnerable communities, households, and individuals, with a particular focus on women from indigenous communities who could benefit from greater involvement in income-generating activities and access to financing through cooperatives, VSLA and other community driven initiatives, but these activities are not mentioned in the list of project activities, nor is how the project will ensure participation of and access for vulnerable groups, including women, indigenous groups, and persons with disabilities, particularly since it is unclear whether these stakeholders have been consulted. A gender analysis is included in the context section and annex on page 76 and cites some potential gender-responsive actions including "raising awareness on environmental socio-economic issues and opportunities and ensuring that all voices are heard", but it is unclear how the project plans to ensure the active and equitable participation of women and address the religious and social customs that are	process. For details, please refer to **Paragraphs 113-119, Tables 11-13**, **Pages 45-57.** • The term *'indigenous communities'* in the context of this intervention proposal refers to **local communities born and residing in the area, with a particular focus on women and young people who will be directly involved in the activities,** please refer to **Paragraph 83**, **Page 34.** • Income-generating activities and access to financing have been integrated into project activities. For details, please refer to **Section 2.2.3.3: Training for village enterprises to develop a business model (market, distribution, and Return of Investment), Paragraph 74, Page 31** or **Table 19, Pages 80-81.**

		cited as barriers to women's involvement. More critically, the gender analysis states that the mapping of vulnerable groups has not been carried out yet, however this is a requirement at full proposal stage. **CAR1:** Please ensure that stakeholder mapping, including of vulnerable groups is complete, including gender-disaggregated baseline data, and that all project stakeholders have been involved in the consultations process.	
	5. Is the project / programme cost effective?	**Unclear.** More details are needed regarding alternative interventions that could have taken place to help adapt and build resilience in the same sector. The table on page 34 compares the benefits of conventional physical infrastructure and the project's "water energy food nexus" with an estimated range and difference in cost, but more details are needed regarding sustainability of proposed infrastructure. For example, how will the Solar PV systems be maintained? **CAR2:** Please include comparison to other possible interventions that could have taken place to help adapt and build resilience in the same sector, geographic region, and/or community; with quantitative estimates where feasible.	**CAR2:** Please include comparison to other possible interventions that could have taken place to help adapt and build resilience in the same sector, geographic region, and/or community; with quantitative estimates where feasible. **(Paragraphs 85-91, Table 9, Table 10, Pages 34-40)**

	6. Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications and adaptation programs of action and other relevant instruments?	**Yes.** The project is aligned with Indonesia's commitment towards climate change mitigation and adaptation, as formalized in the National Determined Contribution (NDC) and the NDC roadmap, as well as the following national and sub-national plans and instruments: ● National Medium-Term Development Planning document (*Rencana Pembangunan Jangka Menengah National* or RPJMN) 2020-2024 specifically outlines seven national development agendas, which includes building the environment and increasing disaster and climate change resilience ● National Action Plans for Climate Change Adaptation (*Rencana Aksi Nasional Adaptasi Perubahan Iklim* or RAN-API) ● Presidential Regulation no. 98/2021 on Economic Value of Carbon ● Strategic Plan of the Directorate General of Climate Change of the Ministry of Environment and Forestry (Renstra PPI) ● Regional Medium-term Development Plan (Rencana Pembangunan Jangka Menengah or RPJMD) 2021-2026	

		● Green Sigi (Siji Hijau) Vision	
	7. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?	**Yes.** The project complies with national and local regulations as follows: ● Law No. 32/2009, Government Regulation No. 22/2021, and Ministerial Regulation No. 4/2021 on environmental management, ensuring proper permits and sustainable practices. ● Presidential Regulation No. 98/2021 on climate adaptation and Ministry Regulation No. 33/2016 for local adaptation plans. ● Law No. 5/1990 on conservation and local forest and coastal management regulations. ● Law No. 14/2018 on transparency, Presidential Instruction No. 9/2000 on gender, and Law No. 8/2016 on inclusion of people with disabilities. ● Regent Decree No. 198-682/2022 and Regional Regulation No. 15/2014, ensuring local alignment. ● Government Regulation No. 12/2019 and Law No. 11/2020, ensuring compliance with ecological fiscal transfers. **CR3**: Please cite any relevant codes, including those governing renewable energy.	**CR3: Relevant Codes and Regulations** The project complies with national and local regulations related to environmental management, climate adaptation, conservation, transparency, gender inclusion, and fiscal policies. The relevant laws and regulations are as follows: ● **Environmental Management**: Law No. 32/2009, Government Regulation No. 22/2021, and Ministerial Regulation No. 4/2021 ensure proper environmental permits and sustainable practices. **(For details, refer to Paragraph 99, Page 42).** ● **Climate Adaptation**: Presidential Regulation No. 98/2021 and Ministry Regulation No. 33/2016 outline climate adaptation policies and local adaptation plans. **(For details, refer to Paragraph 100, Page 42).** ● **Biodiversity and Ecosystem Management**: Law No. 5/1999 governs conservation efforts, with an updated version under Law No. 32/2024. **(For details, refer to Paragraph 101, Page 43).** ● **Community Engagement and Social Inclusion**: Law No. 14/2018

			on transparency, Presidential Instruction No. 9/2000 on gender inclusion, and Law No. 8/2016 on the inclusion of people with disabilities. **(For details, refer to Paragraph 102, Page 43).** ● **Local and Regional Policies**: Regent Decree No. 189-682/2022 and Regional Regulation No. 15/2014 ensure local alignment with national policies. **(For details, refer to Paragraph 103, Page 43).** ● **Ecological Fiscal Transfers and Financial Management**: Government Regulation No. 12/2019 and Law No. 11/2020 ensure compliance with ecological fiscal transfers. **(For details, refer to Paragraph 104, Page 43).** ● **Renewable Energy**: Regulations governing renewable energy are included in the project. **(For details, refer to Paragraph 105, Page 43).**
	8. Is there duplication of project / programme with other funding sources?	**No.** **CR4:** Please outline the framework for coordination with complementary projects during implementation.	**CR4: Coordination Framework for Complementary Projects** The framework for coordination with complementary projects during implementation has been outlined. It includes mechanisms for stakeholder engagement, data sharing, and alignment with existing initiatives to ensure synergy and avoid duplication of efforts.

			For details, please refer to **Paragraphs 106-107, Pages 43-44**.
	9. Does the project / programme have a learning and knowledge management component to capture and feedback lessons?	**Yes.** Component 3 contemplates the establishment of a Center of Excellence for climate change adaptation at the district level to document best practices, disseminate knowledge, and share lessons learned. Additionally, the project plans the development of several knowledge products, including worksheets and workshops. The project will work with the Communication and Information Agency and Public Relations of Sigi District to establish a "micro-site" linked to the district's official website and serve as an information portal. It would be helpful to understand the relationship with the planned Center of Excellence and the Communication and Information Agency and Public Relations of Sigi District. Where will the Center be located? **CR5**: Please clarify the link between the planned micro-site and the Center of Excellence.	**CR5: Link Between the Micro-Site and the Center of Excellence** The relationship between the planned micro-site and the Center of Excellence has been clarified. The micro-site will function as a digital extension of the Center of Excellence, providing an online platform to disseminate knowledge products, best practices, and adaptation strategies. It will be managed in collaboration with the Communication and Information Agency and Public Relations of **Sigi District** to ensure accessibility and alignment with district-level initiatives. For details, please refer to **Paragraph 112, Page 45**.

	10. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Not cleared. More details are needed.** Consultations were held with representatives from the government of Sigi District between April 2022 and November 2023, but more information is needed on local communities, NGOs, and academic stakeholders consulted in November 2023, including the number and gender breakdown of participants, and whether indigenous groups were consulted. Additionally, more details are needed regarding a grievance mechanism and a framework allowing for stakeholders' views to be heard during project implementation. **CAR3:** Please ensure that a comprehensive, gender-responsive consultative process has taken place, and involved all direct and indirect stakeholders of the project/programme, including vulnerable groups and taking into account gender considerations. **CAR4:** Please include a report documenting the consultative process and a) the list of stakeholders already consulted (principles of choice, role ascription, date of consultation), number of participants b) a description of the consultation techniques (tailored specifically per target group), c) the key	**CAR3: Comprehensive, Gender-Responsive Consultative Process** A comprehensive, gender-responsive consultative process has been conducted, involving all direct and indirect stakeholders, including vulnerable groups. The consultation process incorporated gender considerations to ensure inclusivity in decision-making. For details, please refer to **Paragraphs 113-119, Tables 11-13, Pages 45-57**. **CAR4: Documentation of the Consultative Process** A report documenting the consultative process has been included, covering: • A list of stakeholders already consulted, including principles of choice, role ascription, date of consultation, and the number of participants. • A description of consultation techniques tailored to each target group. • Key findings from the consultation, including suggestions and concerns raised by stakeholders.

		consultation findings (in particular suggestions and concerns raised). **CAR5:** Please include a dedicated grievance mechanism for project stakeholders to voice complaints or concerns. Please ensure that the grievance mechanism is easily accessible to all stakeholders.	For details, please refer to **Paragraphs 113-119, Tables 11-13, Figure 6, Pages 45-57**. **CAR5: Grievance Mechanism** A dedicated grievance mechanism has been established to allow project stakeholders to voice complaints or concerns. The grievance mechanism is designed to be easily accessible to all stakeholders. For details, please refer to **Paragraphs 129-132, Figure 7, Pages 61-63**.
	11. Is the requested financing justified on the basis of full cost of adaptation reasoning?	**Yes.**	
	12. Is the project / program aligned with AF's results framework?	**Yes.** As outlined on page 63.	
	13. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	**Yes.** As outlined on page 43.	

	14. Does the project / programme provide an overview of environmental and social impacts / risks identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Yes, however additional information is required.** A checklist is included on page 44, but more information is needed, including on clarifying why specific issues that were flagged as posing significant potential risks are marked as requiring no further assessment and not a potential trigger of the ESP (for example pollution prevention). The proposal does not state the category in which the screening process has classified the project/programme. The annex does not include a gender action plan. **CAR6:** Please state the category in which the screening process has classified the project/programme. (Category A, B or C). Please also ensure that these categories reflect AF ESP and not necessarily the IE policy. **CAR7**: Please include a gender action plan.	**CAR6: Classification of the Screening Process** The project classification under the screening process has been stated. The classification reflects the Adaptation Fund Environmental and Social Policy (AF ESP) categories. For details, please refer to **Paragraphs 126-128, Table 15, Pages 59-61. More details are available in Annex 2, Pages 104-110.** **CAR7: Gender Action Plan** A gender action plan has been included, detailing gender considerations, roles, and strategies to promote gender-responsive project implementation. For details, please refer to **Table 2 on Annex 1, Pages 102-103**.
Resource Availability	1. Is the requested project / programme funding within the cap of the country?	**Yes.**	
	2. Is the Implementing Entity Management Fee at or below 8.5 per cent of the total	**Yes.**	

	project/programme budget before the fee?		
	3. Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)?	**Yes.**	
Eligibility of IE	1. Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?	**Yes.** Kemitraan (Partnership for Governance Reform) is an accredited National Implementing Entity with accreditation expiring in September 2026.	
Implementation Arrangements	1. Is there adequate arrangement for project / programme management, in compliance with the Gender Policy of the Fund?	**No.** The description of the Kolaborasi Consortium on page 48 is well noted, but more information is needed to clarify the roles and responsibilities of the implementing entity as well as any executing entity or organizations/stakeholders that are involved in the project. In particular, more information is needed on how the implementation arrangements incorporate gender-responsive elements, particularly since gender issues are flagged as a significant risk. Who will ensure that gender considerations are mainstreamed throughout project activities? It is recommended to provide a full organization chart showing how the four	**CAR8: Roles and Responsibilities of Implementing Entities** The roles and responsibilities of the implementing entity, all PICs, and any executing entity or organizations/stakeholders involved in the project have been clarified. This includes a detailed organizational structure and reporting lines. For details, please refer to **Paragraphs 133-140, Figure 8, Pages 64-66, and Table 19, Pages 75-82**. **CAR9: Gender-Responsive Implementation and Budgeting** Additional information has been provided on how the project will incorporate gender-responsive elements

		organizations, government agencies and project implementation team report to each other and which activities they are responsible for. **CAR8:** Please clarify the roles and responsibilities of the implementing entity, all PICs, as well as any executing entity or organizations/stakeholders that are involved in the project. **CAR9:** Please provide more information regarding how the project will incorporate gender-responsive elements and ensure that these implementation arrangements are adequately budgeted. Please see **CAR7.**	and ensure adequate budgeting for these implementation arrangements. For details, please refer to **Table 2 on Annex 1, Pages 102-103**
	2. Are there measures for financial and project/programme risk management?	**No.** The table on page 50 includes a list of identified risks and mitigation strategies, but more information is needed, including clearly allocated roles and responsibilities for its implementation of risk management, and opportunities for consultation and adaptive management. There should also be credible budget provisions, as needed, for the implementation of the ESMP, clear arrangements for the IE to supervise executing entities for implementation of	**CAR10: Roles and Responsibilities for ESMP Implementation** Clearly allocated roles and responsibilities for the implementation of the Environmental and Social Management Plan (ESMP) have been included. This includes supervision by the Implementing Entity (IE) and executing entities, along with opportunities for consultation and adaptive management.

		ESMP, and clear monitoring and evaluation arrangements for ESP compliance. **CAR10:** Please include clearly allocated roles and responsibilities for implementation of the Environmental, Social Management Plan ESMP and opportunities for consultation and adaptive management.	For details, please refer to **Table 16, Pages 67–69**.
	3. Are there measures in place for the management of environmental and social risks, in line with the Environmental and Social Policy and Gender Policy of the Fund?	**No.** The risk identification does not meet the requirements of the AF ESP and GP. There is no information on impact assessments that would have generated an ESMP. There is no dedicated grievance mechanism, and more information is needed on opportunities for consultation and adaptive management. No gender specialist is contemplated in the budget. **CAR11:** Please provide an ESMP in compliance with the AF ESP and GP. Please see **CARs 6, 8, 9, 10, and 11.**	**CAR11: Environmental and Social Management Plan (ESMP) Compliance** An Environmental and Social Management Plan (ESMP) has been provided to ensure compliance with the Adaptation Fund Environmental and Social Policy (AF ESP) and Gender Policy (GP). The ESMP includes impact assessments, grievance mechanisms, and measures for consultation and adaptive management. For details, please refer to **Sub-chapter II.K, Pages 59–63. More details are available in Annex 2, Pages 104–110**.

	4. Is a budget on the Implementing Entity Management Fee use included?	**No.** **CAR12:** Please include a breakdown of the Implementing Entity Management Fee.	**CAR12: Breakdown of the Implementing Entity Management Fee** A detailed breakdown of the Implementing Entity Management Fee has been included, outlining cost components, allocation, and justifications for expenditures. For details, please refer to **Table 22, Pages 86–89**.
	5. Is an explanation and a breakdown of the execution costs included?	**No.** **CAR13:** Please include a breakdown of the Execution costs	**CAR13: Breakdown of the Execution Costs** A detailed breakdown of the execution costs has been provided, including cost components, allocation, and justifications for expenditures. For details, please refer to **Table 22, Pages 86–89**.
	6. Is a detailed budget including budget notes included?	**Yes.** as per information on pages 66-71. However, more details are needed regarding allocation of resources for gender-responsive implementation. Please see **CAR 9.** **CR6:** at pages 22 and 23, please remove the dots (.) in the figures presented in the Project/Programme Components and Financing Table and at detailed budget from pages 66-71 as well as results framework alignment tables found on pages 63-65.	**CR6: Formatting Adjustments in Budget Figures** The dots (.) in the figures presented in the Project/Programme Components and Financing Table, as well as in the detailed budget, have been removed for clarity. Adjustments have also been made in the results framework alignment tables to ensure consistency.

		CR7: Please include budget notes in the budget including specifics such as number of consultations, 3 of persons consulted and other specifics on what will be done to fulfill the activity.	For details, please refer to **Table 20, Pages 83–84; Table 21, Page 85; Table 22, Pages 86–89**. **CR7: Inclusion of Detailed Budget Notes** Budget notes have been included with specifics such as the number of consultations, the number of persons consulted, and other details specifying how the activity will be fulfilled. For details, please refer to **Annex 3, Pages 111–120**.
	7. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund?	**No**. Details on reporting are included on page 53, however the proposal lacks a budgeted M&E plan, key M&E milestones, and management of environmental and social risks. **CAR14:** Please include a budgeted M&E plan, in compliance with the AF M&E guidelines and compliance with the Gender Policy. Please see **CARs 7 and 9.**	**CAR14: Budgeted Monitoring & Evaluation (M&E) Plan** A budgeted Monitoring & Evaluation (M&E) plan has been included, ensuring compliance with the Adaptation Fund (AF) M&E guidelines and Gender Policy. The plan outlines key M&E milestones, reporting mechanisms, and the management of environmental and social risks. For details, please refer to **Paragraphs 150–152, Pages 73–74; Table 18, Page 74**.

	8. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function?	**No.** **CAR15:** Please include an M&E Plan that is budgeted with breakdown of IE fees for supervision of M&E function. Please also ensure that the budget that is allocated to mid-term review and terminal evaluation is between 1 to 5% of the total project budget.	**CAR15: Budgeted M&E Plan with IE Fee Breakdown** A budgeted Monitoring & Evaluation (M&E) Plan has been included, with a breakdown of the Implementing Entity (IE) fees allocated for M&E supervision. The budget also ensures that allocations for mid-term review and terminal evaluation fall within the required 1–5% of the total project budget. For details, please refer to **Cost for Project Implementation and Supervision in Table 6, Pages 24–25; Table 22, Pages 86–89**.
	9. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?	**Yes**. As outlined on page 63 however more information is needed on gender responsive indicators and targets, disaggregated by sex as appropriate, for example for the target number of women and men trained. **CAR16:** Please ensure that the results framework includes gender responsive indicators and targets, disaggregated by sex as appropriate. 1. Please amend the table under Part III section E to reflect the project goal; the indicator	**CAR16: Gender-Responsive Indicators and Disaggregated Targets** The results framework has been updated to include gender-responsive indicators and targets, disaggregated by sex where appropriate. The table under Part III, Section E, has been amended to reflect the project goal, including indicators aligned with the AF core framework, such as the total number of beneficiaries (direct, indirect, male, female, youth), baseline, and target values. Additionally, means of verification and assumptions have been placed in their respective columns.

		associated with the overall project goal (as per the AF core indicators e.g. overall number of beneficiaries [direct, indirect; male; female, youth]); baseline; target; means of verification and assumptions each in its own column immediately under the header row of the table. **CAR 17:** At Part III Section E Please also insert core indicator tables for the core indicators identified in the proposal. Must include number of beneficiaries and at least one other. Please utilize the prescribed tables. These can be found at Methodologies for reporting Adaptation Fund core impact indicators (78 kB, DOC)	For details, please refer to **Table 8, Page 33; Table 19 on columns of Source of Verification & Risk and Assumption, Pages 75–82**. **CAR17: Inclusion of Core Indicator Tables** Core indicator tables have been inserted under Part III, Section E, for the core indicators identified in the proposal. These tables include the total number of beneficiaries and at least one additional core outcome indicator. For details, please refer to **Table 8, Page 33**
	10. Is a disbursement schedule with time-bound milestones included?	**Yes. However, amendment is required.** **CR8:** Please ensure that the disbursement schedule complies to the template requirements available at Disbursement Schedule Template (**For fully-developed proposals**) (18 kB, XLS)	**CR8:** The disbursement schedule has been revised to align with the required template for fully-developed proposals. For details, please refer to **Paragraph 157, Table 24, Page 92**

~~FULLY DEVELOPED PROPOSAL FOR SINGLE COUNTRY~~

~~PART I: PROJECT/PROGRAMME INFORMATION~~

FULLY DEVELOPED PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme: ~~Small-sized Project/Programme~~ Building Climate Resilient District in Indonesia: Case of Sigi District

Country: Indonesia

Thematic Focal Area: Rural Development

Type of Implementing Entity: National Implementing Entity

Implementing Entity: Kemitraan (Partnership)

Executing Entities: Konsorsium Lingkungan Adaptif, Berketahanan, Inovatif, dan Partisipatif (KOLABORASI) Koaksi Indonesia, Lingkar Temu Kabupaten Lestari (LTKL), Earth Innovation Institute (EII), Alliance for Water Stewardship Indonesia in partnership with the District of Sigi, Central Sulawesi.

Amount of Financing Requested: 998,868 (in U.S Dollars Equivalent)

Letter of Endorsement (LOE) signed: Yes ~~☐~~ ☒ ☐ No ☐ ☐

NOTE: The LOE should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: https://www.adaptation-fund.org/apply-funding/designated-authorities

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Stage of Submission:

☐☐☒☐ This proposal has been submitted before including at a different stage (concept, fully-developed proposal)

☐☐ This is the first submission ever of the proposal at any stage

In case of a resubmission, please indicate the last submission date: Click or tap to enter a date.

Please note that fully-developed proposal documents should not exceed 100 pages for the main document, and 100 pages for the annexes.

Project/Programme Background and Context

A. General Context: Climate Change and Adaptation

1. At the global level, the Intergovernmental Panel on Climate Change (IPCC) warns that even a mean global temperature increase of 1.5˚C will lead to an increase in the frequency and intensity of rainfall events in some regions, and droughts in other regions. On one hand, extreme intensity of rainfall could cause floods regardless of infrastructure preparedness to match extreme events (no-regret infrastructure development principle). Drought, on the other hand, is much more complex compared to other climate extreme events. Scientists have found a link between certain climate patterns, such as El Niño, and drought. El Niño is a weather event where the surface water in the Pacific Ocean along the central South American coast rises in temperature. These warmer waters alter storm patterns and are associated with droughts in Indonesia, Australia, and Northeastern South America. El Niño events keep climate scientists guessing, by occurring every two to seven years.

2. Moving to the country level, Indonesia is ranked in the top-third of countries in terms of climate risk, with high exposure to all types of flooding and extreme heat. The intensity of these hazards is expected to grow as the climate changes. Without effective adaptation, population exposure will also rise. High intensity of rainfall (generally more than 100 mm per day) for long stretches of time often contributes to flooding in Indonesia. Daily rainfalls of 248.5 mm, 110-197 mm and 182-289 mm were recorded in Jayapura District in Papua, South Sulawesi and Bengkulu, respectively, when floods and landslides hit those regions. The cause of extreme weathers in South Sulawesi and Bengkulu was Madden-Julian Oscillation, a natural phenomenon that increases the volume of moist air that causes high rainfall in most of Indonesia. It is predicted that the population across provinces in Indonesia that are exposed to extreme river floods could grow by 1.4 million by 2035–2044[1].

[1]The World Bank Group and Asian Development Bank. (2021). Climate Risk Profile: Indonesia.

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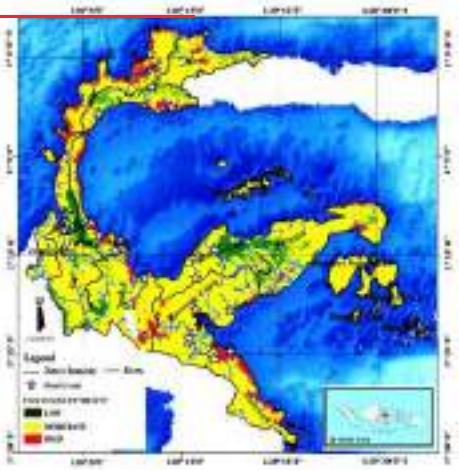
3. Central Sulawesi Province is one of the provinces in Indonesia that relies on the agricultural sector as the main priority in production. Currently, BMKG has 4 rainfall observation stations with data length of more than 20 years. Recent study by Solih Alfiandy and Donadli Sukma Permana on Trend of Rainfall Based on BMKG Observation Data and MERRA-2 NASA Reanalysis in Central of Sulawesi Province shows an increasing trend of total rainfall, a decreasing trend of some rainy days with <5 mm/days, and a rising trend of several rainy days with >50 mm/days (extremes) annually. The annual total rainfall trend increased by 4.68-52.40 mm/year, with the highest movement was observed in Poso and part of Sigi, Tojo Una-Una, Morowali Utara, and Morowali districts. A study by Hatauruk et al., 2020, shows that the level of flood hazard in the central Sulawesi is predominantly in the moderate category. This moderate category occurs in almost every district city including Sigi district[2].



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[2]Hutauruk et al. (2020). GIS-based Flood Susceptibility Mapping in Central Sulawesi.

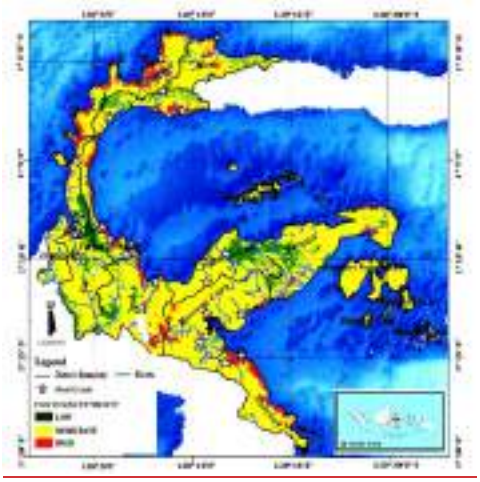

Figure 1. Flood Susceptibility Map of Central Sulawesi
Source: Hutauruk et al., 2020

4. Shifting on the drought side, the development of the El Nino phenomenon also hits Indonesia. The El Nino phenomenon is characterized by a positive increase in the sea surface temperature index anomaly in the Central Pacific, which has an impact on reduced levels of precipitation (rain), thus causing drought and dryness in the Indonesian region. The southern part of Indonesia, especially Southern Sumatra, Java, Bali, NTB, NTT, South Kalimantan, South Sulawesi and Southeast Sulawesi, did not have any rain for 2-3 months. The impacts felt were reported in the form of dry reservoir water, land and forest fires, as well as air quality that felt congested and the air felt hot. The impact of El Nino in 2023 was also felt in the Central Sulawesi region. A study by Sofian Alfandy et al., 2019, shows that the average surface air temperature has increased in Central Sulawesi Province over 39 years. It has been found that there is no rain in several areas, and the air feels hot and stuffy, including Sigi district.

5. Moving from province to district level, Sigi District, based on the Index and Vulnerability Data Information System (Sistem Informasi Data Indeks dan Kerentanan/SIDIK), is vulnerable to the impacts of climate change, particularly floods and droughts. According to the head of Sigi District Agency for Disaster Management, 66% of the villages are considered to have a moderate vulnerability to climate change. Villages located further from the district capital in the Sigi Biromaru sub-district tend to have a higher vulnerability to climate change. Figure 2 illustrates the vulnerability at village level[3].

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[3]https://inarisk.bnpb.go.id:6443/arcgis/rest/services/SIDIK/Kerentanan_Iklim/MapServer

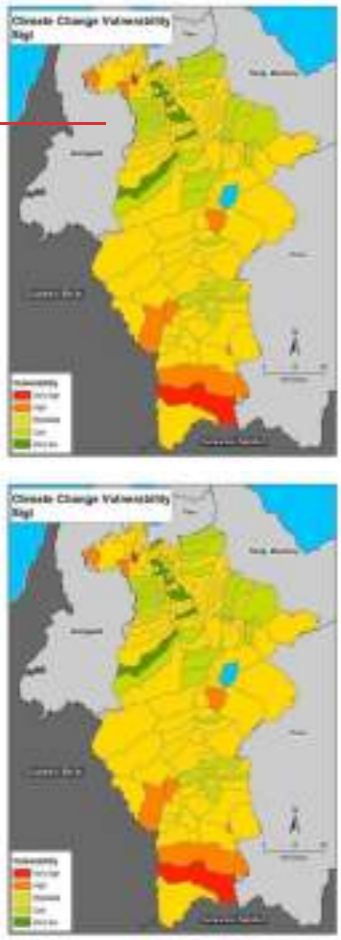

Figure 2. Vulnerability to climate change map of Sigi District in 2018

Source: SIDIK

6. As Sigi is suscpetible to flooding due the climate change, Sigi district also located on Alluvial, Planosol and Hidromorf soil type. These type of soil is diffcult to absorb water (Rahmati et.al, 2016) and it increases the risk of flooding.

7. Based on the result of the rainfall analysis in the past 37 years, there is an increasing trend in the number of rainy days >50 mm/day (extreme)

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per year. This indicates that there is a threat of increasing rains with extreme intensity in the future, which would cause floods and landslides that could submerge houses and agricultural land, and damage other public infrastructure, such as roads, fresh water, and electricity. Gumbasa, Palolo, Dolo Selatan, Marawola Barat Sub-districts are some of the areas with high exposure to disasters. In 2020, flash floods hit the Omu and Tuva Villages in the Gumbasa Sub-district. The disaster had disabled the Palu-Kulawi route for two days. Apart from these two villages, there were also several villages in Dolo Selatan sub-districts, which had been frequently hit by flash floods. Therefore, people who live along the river need to be alert and evacuate immediately if there are signs of flood. Local people assumed that the climate variability has increased the risk of floods and landslides, and other types of climate-related disasters in Sigi District.

8. The flooding events in Sigi are mostly triggered by high-intensity rains that can be classified into two sub-categories, i.e.: local rain and flash flood due to the propagation of peak runoff from high-intensity rain in the upstream of the catchment. The topography of Sigi, which is dominated by highland-mountainous areas, leads to a higher threat of flash flood to low-lying areas along the river systems. Several rivers with frequent floodings include 1) Miu river (Gumbasa Sub-district), Salui river, Kalangga river; 2) Palindo river (Dolo Selatan Sub-district), Wewe River, Magila River, Sadaunta River; and 3) Manggalapi River (Palolo sub-district).

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9. High intensity rainfall generally occurs in the southern part of Sigi. This region is both classified as the upstream part of Palu catchment and Lariang Hulu catchment. The region includes Kulawi Sub-district, southern part of Lindu Sub-district, South Kulawi Sub-district and Pipikoro Sub-district. The high flooding incidence in Sigi is caused by several factors, including 1) local weather and climate, 2) Madden Julian Oscillation (MJO) - Global Atmospheric Phenomenon, 3) rock and soil conditions, 4) topographic, and excerbated by 5) land cover changes. In addition, the risk of higher rainfall intensity and flooding would increase and trigger landslides and flash floods in several areas, mainly along the Palu Valley.

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~~Disaster~~	~~Number of people~~				~~Number of residential units~~				~~Number of unit damaged~~		

Table 1. Disaster Incidents in Sigi District 2010-2019
Source: 2019 Disasters in Indonesia Data and Information

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Disaster	Number of people				Number of residential units				Number of units damaged		
	Number of events	Loss of life	Injured	Relocated	Severe damaged	Damaged	Litle damaged	Submerged	Health facilities	Religious facilities	Education facilities
Flood	15	10	28	5,039	235		122	1,011	2	8	11
Earthquake and liquefaction	1	405	1,112	76,835	8,342	5,960	13,850	0	35		267

Landslide	5		10	384	8	0	10	46	0	1	0
Extreme weather	1	0	2	0	0	0	0	0	0	0	0

~~Table 1. Disaster Incidents in Sigi District 2010-2019~~

~~Source: 2019 Disasters in Indonesia Data and Information~~

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10. Sigi District also has the potential for drought. The indication is that there are several rivers in Sigi District that experience drought during the dry season. If action is not taken to solve the problem immediately, it is not impossible that drought will also occur in the future. In 2019, Sigi district experienced a long drought where seven villages experienced drought. The seven villages are Maranata Village, Sidondo Satu Village and Sibowi Village in the Sigi Biromaru Sub-District area. Then, the Dolo Sub-District area includes the villages of Solouwe, Karawana, Sidera and Jono Oge. It had been 11 months since residents in the area have experienced a water crisis due to drought. The drought problem was aggravated by the damage to the Gumbasa irrigation canal due to the earthquake.

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11. In the Sigi District, climate change has led to significant impacts on local communities, as demonstrated by recent disasters. Flooding in Sambo Village and Balengga Village in 2024 displaced 384 people and damaged 73 homes. In Pandere Village, a flood in 2021 resulted in the loss of 50 hectares of cacao, corn, and coconut crops. Similarly, in 2019, floods in Bangga Village, Balongga Village, Walanata Village, Omu Village, and Tuva Village destroyed 500 houses and displaced 2,400 people.

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12. Then, the Sigi District has also been severely affected by droughts, impacting water access, agriculture, and livelihoods. In 2019, villages such as Maranata, Sidondo Satu Sibowi, Solouwe, Karawana, Sidera, and Jono Oge from a prolonged drought that deprived residents of water, sanitation, and hygiene for 11 months. In 2019 and 2023, Gumbasa and Tanambulava districts saw 6,000 hectares of farmland dry up. Recurrent droughts from 2015 to 2024 caused significant agricultural failures in villages like Bulumpewa, Porame, Lembantongoa, Sidera, and Lolu, leading to major crop losses and forcing farmers to temporarily shift to manual labor.

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Box 1. The Surface Temperature: Precipitation Relationship in More Depth

The connection between precipitation and surface temperature is defined by the Clausius-Clapeyron equations. The Clausius-Clapeyron equations calculate the energy required to cause a chemical reaction at a given pressure. In terms of precipitation, the Clausius-Clapeyron equations can be used to calculate the thermal energy required to condense water vapor into droplets when the atmospheric pressure is known.

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When water droplets evaporate into the atmosphere, they travel upwards. As the Clausius-Clapeyron relationship is dependent on atmospheric pressure, the thermal energy requirement for a phase change is lower at a lower pressure. As the water droplets travel upwards, two things happen:

The atmospheric pressure decreases, and the atmospheric temperature cools (this is known as the temperature lapse rate and is typically estimated at -6.5°C per kilometer). When the water vapor reaches an elevation where the atmospheric pressure and temperature satisfy the Clausius-Clapeyron relationship, the water vapor condenses into cloud droplets[4].

Box 2. Cause of Drought

Most droughts occur when regular weather patterns are interrupted, causing disruption to the water cycle. Changes in atmospheric circulation patterns can cause storm tracks to be stalled for months or years. This disruption can dramatically impact amounts of precipitation that a region normally receives. Changes in wind patterns can also be disruptive to how moisture is absorbed in various regions.

Scientists have found a link between certain climate patterns and drought. El Niño is a weather event where the surface water in the Pacific Ocean along the central South American coast rises in temperature. These warmer waters alter storm patterns and are associated with droughts in Indonesia, Australia, and northeastern South America. El Nino events keep climate scientists guessing, by occurring every two to seven years.

La Niña is the counterpart to El Niño, when the surface water in the Pacific Ocean along the coast of South America decreases in temperature. The cooler waters affect storm patterns by contributing to drier-than-normal conditions in parts of North and South America. El Niño and La Niña both usually last about a year. The effects of La Niña on weather patterns are often more complex than El Niño. Two of the most devastating droughts in the history of the United States—the 1930s Dust Bowl and the 1988 drought in the Midwest—are associated with the effects of La Niña.

There is still a lot of debate about the connection between drought and global warming, the current period of climate change. A 2013 NASA study predicts warmer worldwide temperatures will mean increased rainfall in some parts of the world and decreased rainfall in others, leading to both more flooding and more droughts worldwide. Other scientists question the prediction that there will be more droughts and believe global warming will create a wetter climate around the world[5].

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[4]https://www.jbarisk.com/news-blogs/the-physics-of-precipitation-in-a-warming-climate
[5]https://education.nationalgeographic.org/resource/understanding-droughts/

13. Floods, exacerbated by climate change, pose significant impacts on the ecosystem, particularly in Sigi District. Soil erosion resulting from floods leads to the loss of nutrients, damaging forest root systems and decreasing forest productivity. This erosion affects 15% of forest areas, thereby jeopardizing tree stability and growth. Moreover, floodwaters carry pollutants such as agricultural chemicals and waste into water bodies, which deteriorates water quality. For instance, contamination levels have increased by 40% in the Gumbasa River, exacerbating ecological challenges and highlighting the urgent need for adaptive measures to safeguard local ecosystems against these detrimental impacts. This impact has the potential to get worse because according to projections of changes in flood risk in Sigi from 2022 to 2030 using the current trend scenario by the WWF Water Risk Filter, it shows an increasing trend with a risk change class of +0.8. This projection shows that areas currently identified by BNPB as having a high level of flood and flash flood danger, will be more susceptible to higher flood risks.

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Figure 3. Impact of Flash Flood in Sambo Village, Dolo Selatan, Sigi
Source: Field Survey 2024

14. Drought conditions in Sigi District have profound impacts across the ecosystem, exacerbating vulnerabilities to pests and wildfires in forest ecosystems. The increased incidence of forest fires by 30% in Central Sulawesi due to drought has led to significant forest degradation and loss of biodiversity. Additionally, dry and friable soils increase susceptibility to wind erosion and loss of topsoil layers. In Sigi District, drought-induced loss of topsoil layers has adversely affected agricultural productivity and contributed to land subsidence in several areas. Reduced water surfaces concentrate pollutants in rivers and lakes, exemplified by increased contamination levels in the Palu River, adversely affecting aquatic biodiversity and human health.

15. Several climate adaptation actions are currently underway in Sigi District, each playing a crucial role in enhancing resilience against floods. The "Program Sigi Hijau," supported by local government policies and Lingkar Temu Kabupaten Lestari (LTKL), exemplifies an indirect but moderately effective approach. Direct and highly effective interventions include the construction of riverbank embankments by the Sigi government, aimed at mitigating flood risks. Additionally, initiatives such as bamboo planting in degraded forest areas directly implemented by the local government underscore high effectiveness in bolstering ecological restoration efforts. Alongside physical interventions, efforts to disseminate climate change information and enhance community capacity through forums like the Disaster Risk Reduction Forum in Sigi demonstrate moderate effectiveness in fostering resilience-building across the district.

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16. Efforts to adapt to drought conditions in Sigi District are robust and multifaceted, addressing immediate needs while aiming for long-term sustainability. Emergency responses such as water, sanitation, and hygiene (WASH) initiatives led by NGOs demonstrate high effectiveness in providing temporary relief. Meanwhile, the construction of reservoirs by village and regional authorities, supported by local police, represents a direct and highly effective measure with a focus on sustainability. Altering crop patterns, facilitated by the Agricultural Service and local farmers, shows high effectiveness in immediate drought mitigation and long-term sustainability. Similarly, agricultural agencies' development of resilient plant varieties ensures indirect but highly effective long-term solutions. Physical interventions like digging wells and establishing food barns, undertaken collaboratively by village and regional authorities with police support, exhibit high immediate effectiveness with moderate sustainability efforts.

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A.1. Water-Energy-Food Nexus

17. The Water-Energy-Food (WEF) Nexus is an integrated approach to managing water, energy, and food security that emphasizes the interdependencies between these critical sectors. In the context of Sigi District, understanding and applying the WEF Nexus is vital for sustainable development, particularly under the pressures of climate change. By acknowledging the interconnectedness of water availability, energy supply, and food production, this approach facilitates comprehensive planning and policy-making that aim to enhance resilience and sustainability.

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Water-related Strategic Issues in Sigi District

18. Catchment water balance takes into account the total inflows of water entering the catchment, the total outflows of water leaving the catchment, and the capacity of the catchment to store water. One of the significant impacts of climate change and variability is the changing water cycle in the catchment, disrupting the catchment water balance that could further increase the risks related to conflict over water among different users in the catchment[6].

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19. Sigi District is located in the Palu-Lariang river basin, or Wilayah Sungai Palu-Lariang, a trans-provincial river basin comprising 52 smaller surface catchments. Two of the Palu-Lariang river basin's largest catchments are located in Sigi, which are called Daerah Aliran Sungai (DAS) Lariang and DAS Palu. Understanding the catchments' water balance allows the district government to better plan a resilient fresh water supply for the upcoming industrial and agricultural centers in Sigi, as a part of the KAPET-PALAPAS National Strategic Area.

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[6] A Chalid and A Mulyadi 2021 IOP Conf. Ser.: Earth Environ. Sci. 930 012074; and T.V.Reshmidevia, D.Nagesh KumarbcR. Mehrotrad A.Sharmad, Estimation of the climate change impact on a catchment water balance using an ensemble of GCMs

20. Currently, the study on the impact of climate change at the district level is not available and is expected to be made available through the implementation of this proposal.

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21. The resilience of water supply to sustain livelihood and energy production also depends on the quality of available water sources. The Sigi Information on Environmental Management Performance in 2018 mentioned that maintaining good quality of water resources is considered as one of the district strategic development issues.

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22. Regular surface water quality monitoring by the district government is done at six subsidiaries of Lariang river. Monitoring in 2018 showed that both the physical and chemical parameters of Lariang river are not suitable for the district's drinking water supply. On the other hand, the groundwater quality monitoring in 2018 in nine sampling locations indicated that the district's groundwater is still suitable for fresh water supply for domestic purposes with prior treatments.

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23. The district government has identified the lack of centralized domestic and industrial wastewater treatment plants and poor solid waste management as the significant causes for the declining of surface water quality.

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24. While water sources availability is in abundance year-long in Sigi, only 3% of households are connected to the district water company (PDAM Donggala) piping system. As many as 70% of total households get their domestic water supply from individual bore wells[7]. While the total number showed that more than 70% of Sigi households already have access to clean water, SDG 6 targets, and national development targets required to be in a decent and/or safe state. However, information related to the quality of the individual bore wells are limited. The level of proneness to water quality contamination and resiliency towards natural disaster should be assessed, and the spatial distribution of the high-risk population in terms of access to decent or safe clean water.

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25. Once collected and assessed, this information should be fed into the district's development targets and planning.

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Food-related Strategic Issues in Sigi District

26. Based on the Ministry of Environment and Forestry's spatial data[8], the land use in Sigi District is dominated by forest cover. In 2019, 71% of the land was covered by forests, while only 17% or equal to 92,128 hectares was used as agricultural land, which has been constantly increased compared to the agricultural land in 1990–11% or equal to

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[7] BPS Kabupaten Sigi. (2021). Statistik Kesejahteraan Rakyat Kabupaten Sigi 2021.
[8] https://dbgis.menlhk.go.id/arcgis/rest/services/KLHK

60,597 hectares. According to the Ministry of Environment and Forestry Regulation No. 734/2014, the area available for non-forest use, including agricultural activities and urban development, is only 25% of the total area of Sigi. The rest of the area is designated for forest-related land use, including production forest (25%), protection forest (27%), and national park (23%). These figures are also consistent with the district's latest spatial planning for the 2021-2041 period (Regional Regulation No. 1/2021 on Sigi District Spatial Plan).

27. There are at least 2 leading commodities, namely cocoa, and coconut, where some of the commodities are grown by utilizing forest cover[9]. Currently, Sigi District has been designated as a center for agricultural development, particularly in organic cocoa. Historically, Sigi has been a leading cocoa producer in Central Sulawesi Province, with cocoa plantations covering 27,887.50 hectares in 2023, making it the second-largest cocoa plantation area after Banggai District in the province[10]. Cocoa has been a prominent export product from Central Sulawesi, contributing substantially to foreign exchange earnings[11]. Meanwhile, according to Suud et al., 2021, Central Sulawesi is also known for coconut production[12], with Sigi District having 6,150 hectares of coconut plantations in 2023[13]. As part of efforts to enhance regional food security, the Central Sulawesi government has promoted coconut farming in Bangga Village, South Dolo Subdistrict, Sigi District, historically known for its coconut production[14].

28. Despite being a leading commodity, climate change has the potential to reduce cocoa and coconut productivity in Sigi District. As observed during 2011-2013, rising temperatures have adversely affected cocoa plant resilience, making them more susceptible to evolving viruses due to changing weather patterns. According to Central Sulawesi's Central Statistics Agency (BPS), cocoa exports have steadily declined. In 2011, Central Sulawesi exported 44,751 tons of cocoa, generating USD 132.31 million in foreign exchange, while in 2012, cocoa exports amounted to USD 78.53 million with 35,336 tons exported. By the first quarter of 2013, cocoa exports plummeted to 2,950 tons, a decrease of 59.5 tons compared to the same period in 2012[15]. Additionally, high rainfall from January to August 2011 in Central Sulawesi caused many cocoa pods to drop prematurely, resulting in a reduced harvest compared to previous years due to extreme climate changes[16]. More

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[9]https://kabupatenlestari.org/en/anggota/sigi/
[10]BPS Provinsi Sulawesi Tengah. (2024). Provinsi Sulawesi Tengah Dalam Angka 2024
[11]https://sulawesi.bisnis.com/read/20201008/539/1302418/sulteng-andalkan-kabupaten-sigi-sebagai-sentra-produksi-kakao-organik
[12]Suud et al. (2021).Kinerja Manajemen Rantai Pasok Kelapa di Provinsi Sulawesi Tengah.
[13]BPS Provinsi Sulawesi Tengah. (2024). Provinsi Sulawesi Tengah Dalam Angka 2024
[14]https://news.republika.co.id/berita/rbh13l457/pemprov-sulteng-kembangkan-pertanian-jagung-dan-kelapa-di-sigi
[15]https://sulteng.antaranews.com/berita/11238/meningkatkan-produksi-kakao-saat-pemanasan-global
[16]https://disbun.kaltimprov.go.id/artikel/harga-kakao-berjangka-turun-54-poin

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recently, in 2017, unfavorable weather conditions were suspected to have caused a significant decline in cocoa yields in Sigi District, Central Sulawesi, leading to substantial losses for farmers. Usually, one farmer can harvest up to five sacks of dry cocoa beans, but now the maximum is one sack of cocoa beans. This disappointing harvest, attributed to excessive rainfall, drastically reduced cocoa yields compared to previous years, leaving many farmers in distress[17]. Similar impacts have also affected the coconut commodity in Sigi District, Central Sulawesi. In 2019, many coconut trees in the district perished due to prolonged drought conditions. Observations in several locations revealed numerous coconut trees already dried out and deceased. Their fruits had fallen, leaving behind only dried trunks and leaves. The extensive loss of coconut trees resulted directly from the prolonged dry season experienced over the past few months[18].

29. Most of the villages in Sigi District face moderate vulnerability to the impacts of climate change. The predominant livelihoods in these vulnerable villages revolve around agriculture, particularly cocoa and coconut plantations. The productivity of these plantations heavily relies on temperature and rainfall patterns. With increasing temperatures, humidity levels decrease significantly, posing a severe threat to cocoa trees and the chocolate industry. Additionally, Sigi District is characterized by extensive plantation areas highly susceptible to drought, particularly in Gumbasa District. In this district, agricultural lands heavily depend on water supply from the Gumbasa irrigation system. If not addressed through climate adaptation measures, these conditions could exacerbate the current impacts of climate change on plantation commodities[19].

Energy-related Strategic Issues in Sigi District

30. Indonesia's compliance of energy needs has not yet been evenly distributed and still faces many challenges. As experienced in several regions in Indonesia, especially with conditions that tend to be difficult, Central Sulawesi with a total of 3,010,440 people or 811,927 households has a 91.93% electrification ratio. Zooming out to Sigi, the district's electrification ratio is 83% with 43 villages in four sub-districts having limited access to PLN's grid (State-Owned Electricity Company). These sub-districts are Lindu, Kulawi, South Kulawi, West Dolo, and Pipikoro. PLN has difficulty reaching these areas because the distance from the capital of Sigi to Kulawi and Pipikoro is about 50 km. On average, PLN can only manage to expand 2 km of the grid in each expansion point per year (ESDM, 2017), and remote villages are located 25 km outside the grid. Connecting the most outlying villages of Kulawi and Pipikoro to the grid will not be happening within five to

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[17]https://www.akurat.co/rill/1301870466/Hasil-Panen-Kakao-Sigi-Anjlok-Imbas-Cuaca-Tak-Mendukung

[18]https://www.antaranews.com/berita/1058150/tanaman-kelapa-di-sigi-banyak-mati-dampak-kemarau-panjang

[19]https://kumparan.com/paluposo/kabupaten-sigi-terancam-kekeringan-1550977945211949363/full

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ten years.

31. Although PLN has provided electricity to 83% of the villages in Sigi District, not all residents in these villages have reliable electricity. The electrical system in Central Sulawesi relies on hydroelectric power plants, where water resilience is a critical factor for power generation. The flow rate necessary to operate the turbines in Central Sulawesi's hydroelectric plants is highly variable, leading to potential power outages at any time. With the increasing risk of drought, river water levels cannot be consistently relied upon throughout the year to generate electricity.

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32. The context of climate adaptation needs becomes crucial in the villages most affected. A more detailed assessment indicates that the sub-districts of Kulawi and Pipikoro experience fewer flood impacts compared to Gumbasa and South Dolo. Therefore, interventions to strengthen the adaptive capacity of community members are more urgently needed in Gumbasa and South Dolo. These sub-districts also hold strategic locations that connect the northern and southern parts of Sigi.

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33. Communities require energy to enhance their climate adaptation resilience, with a crucial aspect being the integration of energy and information technology to develop early warning systems for floods, climate data, and weather information that support local agriculture and plantations.

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A.2. Socio Economic Context

Population

34. Over the last ten years, the population number in Sigi District has been steadily increasing, from 215,030 in 2010 to 257,580 in 2021, showing approximately 1% annual growth rate[20]. The highest percentage of population (22,54%) resides in its capital, Sigi Biromaru, while the lowest percentage lives in Nokilalaki, a sub-district located 52 kilometers away from the district's administrative capital.

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35. In 2020, the population density in Sigi is 50 people per km2, only a third of the average Indonesia population density. However, the access to civil registration is still considered as a challenge due to the district's vast area. Since 2014, Sigi has implemented an online civil administration information system, but the number of National Registry ID Card (KTP) ownership is only 75% in 2017, and only 40 out of 1,000 people have birth certificates[21]. This condition has worsened since 2018, where a large number of residents lost their civil registry

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[20] BPS, 2021, Kabupaten Sigi Dalam Angka 2021.
[21] Kabupaten Sigi, 2019, Rencana Kerja Perangkat Daerah Kabupaten Sigi 2019.

documents due to the major earthquake and liquefaction[22].

36. In Sigi District, several indigenous communities have been officially recognized through the Sigi Regent's Decree. These include the To Kulawi Uma in Moa Village, To Kulawi Uma in Masewo Village, and To Kulawi Moma in Toro Village. Specifically, in Gumbasa and South Dolo Subdistricts, which are project locations, the Topoado indigenous community resides. Topoado refers to the Kaili ethnic group, with "To" meaning people or group and "Po" indicating a speaker of the language[23]. Additionally, according to the Indigenous Territories Registration Agency, the Kaili Inde Gia indigenous community, which consists of small family-based groups, is the majority population in Wisolo Village. They live in scattered settlements around Mount Wisolo and along nearby rivers. Their economic livelihood is derived from plantation commodities such as coconut, cocoa, candlenut, bananas, corn, and vegetables[24].

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Poverty Level

37. The main livelihood in Sigi Districts is agriculture. In 2020, 52,132 (45%) of people of productive age worked as farmers or farm workers, and 44,276 (38%) worked in the service industry. Minimum wage in Sigi district according to Central Sulawesi Governor Decree No. 561/399/Dis.Nakertrans.6.ST/2021 is Rp 2,390,739, while the regional poverty line is Rp 370,788.

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38. The poverty level in Sigi has fluctuated in the past five years. Currently, Sigi District is categorized into Desil 1 Category District with extreme poverty based on the National Household Data (Bappeda Sulteng, 2022). There are 153,000 poor people in Sigi, which contributed to the poverty rate in Sigi is 13,05% against its entire population[25]. Meanwhile, the national target of poverty rate is at 8,5 to 9% in 2022.

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39. Out of this poverty number in Sigi District, 38.16% are unemployed and 55.63% are informal workers, who mostly work in the agricultural sector. More than half (54.5%) of the population in poverty has healthcare insurance (BPJS) and up to 83% have home ownership[26].

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Economic Condition

40. The economic condition of Sigi District is reflected in the agricultural activities of its villages. Specifically in the 6 project villages, in Pandere Village, rice is harvested every four months yielding 500 kg/ha, corn every three months at 3,000 kg/ha, and cocoa biweekly at 140,000 IDR/kg. Pakuli Utara Village produces similar yields of rice and corn.

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[22] https://sulteng.antaranews.com/berita/44616/banyak-warga-sigi-kehilangan-dokumen-kependudukan
[23] https://aman.or.id/news/read/844
[24] https://brwa.or.id/wa/view/NDJPc0l6aEhvbXc
[25] https://bappeda.sultengprov.go.id/musrenbang-penyusunan-rkpd-kabupaten-sigi-tahun-2022/
[26] BPS, 2021, Statistik Penduduk Miskin Kabupaten Sigi Tahun 2020

Simoro Village also harvests corn and coconut every three months and cocoa biweekly. Bangga Village focuses on corn, yielding 2,500 kg/ha every four months at 4,500 IDR/kg. Sambo Village grows rice and corn, with rice sold to middlemen at 11,000 IDR/kg. Wisolo Village diversifies with secondary crops, cloves, durian, mango, and avocado.

41. In the 6 project villages in Sigi District, the primary occupation of the residents is farming. In Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo, 90-94% of the population are engaged in agricultural activities, with the remaining 3% working as civil servants (Aparatur Sipil Negara [ASN]) and 3-7% in private sectors. The community of Bangga similarly relies heavily on farming as their main source of livelihood. These farmers typically work their lands year-round, adhering to the planting and harvesting cycles of their crops to sustain their livelihoods.

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42. Climate disasters have had adverse economic impacts on the communities of Sigi District. The two sub-districts most severely affected by climate-induced flooding are Gumbasa and South Dolo, encompassing six villages—Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo—where the flooding has been most severe. A total of 3,108 households have been exposed to the impacts of these floods. With an average Gross Regional Domestic Product (GRDP) of 39.73 million IDR per year[27], the estimated economic loss due to flooding affecting these six villages is about 10.2 billion IDR per year, based on a scenario of three flood events per year[28]. This situation may continue to deteriorate in line with the increasing climate risks in Sigi District.

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43. The high frequency of flooding events has made the social resilience of the community vulnerable. The impacts of flooding have caused damage to infrastructure that affects social conditions, such as students unable to attend school, hindered transportation access, damaged rice fields and plantation lands, and reduced water resilience. Consequently, the village communities face limitations in carrying out daily activities and fulfilling their socio-economic needs.

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Education and Local Wisdom

44. The average years of schooling in Sigi District throughout 2016 to 2020 is 8,4 years, which is relatively low compared to the national policy on twelve years of compulsory education. However, the expected years of schooling has increased from 12.31 in 2016 to 12.87 in 2020, indicating that Sigi provides access to formal education up to high school level.

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45. The educational infrastructure in the 6 project villages in Sigi District

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[27] BPS Kabupaten Sigi. (2023). Produk Domestik Regional Bruto Kabupaten Sigi Menurut Lapangan Usaha 2018-2022.
[28] BPBD Provinsi Sulawesi Tengah. (2024). Data Bencana 2024. https://pusdalops-bpbdsulteng.com/data-bencana-publik

varies considerably. In Pandere Village, there are three elementary schools, one junior high school, and one high school, but no higher education institutions. Pakuli Utara Village also has two elementary schools, one junior high school, and one high school, with no higher education facilities. Simoro Village is more limited, with just one elementary school and no higher education options[29]. Bangga Village mirrors Pandere Village with three elementary schools, one junior high, and one high school. Both Sambo Village and Wisolo Village have one elementary school each but lack junior high, high school, and higher education facilities[30]. This disparity highlights the need for improved educational access and resources in these areas.

Table 2. Number of Educational Facilities 2021
Source: BPS Kabupaten Sigi

Village	Number of Educational Facilities			
	Elementary School	Junior High School	High School/ Vocational School	Academy/ University
Pandere	3	1	1	0
Pakuli Utara	2	1	1	0
Simoro	1	0	0	0
Bangga	3	1	1	0
Sambo	1	0	0	0
Wisolo	1	0	0	0

~~Table 2. Number of Educational Facilities 2021~~
~~Source: BPS Kabupaten Sigi~~

46. In Sigi, nature and forest protection are considered as customs and traditions that have been passed down between generations, especially for the indigenous people living alongside the forests. There is a local wisdom called Taolo[31], a forest zone status that prohibits land opening in specific areas with steep slopes to prevent erosion and landslides. The indigenous law also forbids and gives out sanctions for people commiting forest encroachment and environmental pollution[32].

Health

47. Life expectancy in Sigi District has significantly improved from 68.69 in 2016 to 69.99 in 2020. Public health services have also improved with health facilities and workers (doctors, nurses, midwives, and pharmacists) spreading evenly across all 15 sub-districts. In 2020, 98.72% of childbirth were assisted by doctors and midwives. Child vaccination is accessible in every public health center. However, the number of children (12.46%) have not yet had a Child Identity Card

[29]BPS Kabupaten Sigi. (2021). Kecamatan Gumbasa Dalam Angka 2021.
[30]BPS Kabupaten Sigi. (2021). Kecamatan Dolo Selatan Dalam Angka 2021.
[31]https://jaring.id/antara-bukti-konservasi-dan-batas-di-atas-kertas/
[32]https://sulteng.antaranews.com/berita/179460/upaya-komunitas-adat-lindu-jaga-kualitas-lingkungan

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(KIA) and their vaccinations were not well documented. This is a challenge as database and documentation is imperative in healthcare access and improvements.

Table 3. Number of Stunted Toddlers 2022
Source: BPS Kabupaten Sigi

Village	Number of Stunted Toddlers
Pandere	18
Pakuli Utara	4
Simoro	2
Bangga	0
Sambo	0
Wisolo	1

~~Table 3. Number of Stunted Toddlers 2022~~
~~Source: BPS Kabupaten Sigi~~

48. The health condition in the 6 project villages of Sigi District reveals significant disparities in the prevalence of stunted toddlers. Pandere Village faces the highest challenge with 18 stunted toddlers, indicating severe nutritional deficiencies. Pakuli Utara and Simoro villages have relatively lower numbers, with 4 and 2 stunted toddlers respectively[33]. Conversely, Bangga and Sambo villages report no cases of stunting, suggesting better nutritional status and health conditions. Wisolo Village has a minimal incidence, with only 1 stunted toddler[34]. These variations underscore the need for targeted health and nutrition interventions across these villages.

Gender

49. According to the 2021 data published by the Statistics Bureau of Sigi District, the population of the district in 2020 is 239,430 people with a gender ratio of 112.91, meaning that there were 113 men for every 100 women.

50. The gender ratio in the 6 project villages of Sigi District shows a near balance between male and female populations, reflecting a relatively equal gender distribution. In Pandere Village, the population consists of 1,345 males and 1,312 females, resulting in a gender ratio of 49%. Pakuli Utara Village has 769 males and 706 females, with a gender ratio of 48%. Simoro's gender ratio is 49%, with 489 males and 466 females[35]. Bangga Village has a slightly lower ratio at 47%, with 1,458 males and 1,285 females. Sambo Village maintains a perfect balance

[33]BPS Kabupaten Sigi. (2023). Kecamatan Gumbasa Dalam Angka 2023.
[34]BPS Kabupaten Sigi. (2023). Kecamatan Dolo Selatan Dalam Angka 2023.
[35]BPS Kabupaten Sigi. (2023). Kecamatan Gumbasa Dalam Angka 2023.

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with a 50% gender ratio, having 623 males and 612 females. Wisolo Village follows closely with a 48% gender ratio, comprising 632 males and 592 females[36]. This data indicates that the gender distribution in these villages is fairly balanced, which is crucial for equitable community development and resource allocation.

Table 4. Population and Gender Ratio of 6 Project Villages
Source: BPS Kabupaten Sigi

Village	2022 Population			Gender Ratio
	Male	Female	Total	
Pandere	1,345	1,312	2,657	49%
Pakuli Utara	769	706	1475	48%
Simoro	489	466	955	49%
Bangga	1,458	1,285	2,743	47%
Sambo	623	612	1235	50%
Wisolo	632	592	1224	48%

~~Table 3. Population and Gender Ratio of 6 Project Villages~~
~~Source: BPS Kabupaten Sigi~~

A.3. Current Enabling Condition in Sigi District

51. The current efforts of Sigi District government to mitigate and adapt to the climate crisis are well-illustrated in the issuance of Sigi Hijau. It is a cross-sectoral policy breakthrough and the manifestation of Sigi's commitment to pursue jurisdictional sustainability achievable through several strategies that include climate change mitigation and adaptation including Regional Action Plans for Climate Change Mitigation and Adaptation as the extension of the national and provincial action plans to the district level. This proposed project aims to support Sigi District develop its own regional action plans for climate change adaptation. Sigi Hijau showcases the district's commitment further and will ensure effective implementation and access to funding from government fiscal incentives or private and non-profit.

52. Since the issuance of Green Sigi Vision in 2019, the district government has established its roadmap towards prepping the implementation pillars, including the availability of a multi-stakeholders forum. It was still conducted despite their post-disaster condition. By June 2022, following to the slow recovery, the district had revived their efforts. In parallel, through the Sustainable District Platform (Lingkar Temu Kabupaten Lestari/LTKL) secretariat - a district association under the Association of Districts Government in Indonesia (APKASI), the district has conducted stakeholders mapping and assessment in Sigi and across Palu City to identify core groups for Green Sigi implementation

[36]BPS Kabupaten Sigi. (2023). Kecamatan Dolo Selatan Dalam Angka 2023.

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and ensure inclusivity of the multi-stakeholders platform, from architectural, disaster prevention, youth empowerment, women group, indigenous community, literacy, and community business development working groups. The Green Sigi multi-stakeholders platform is targeted to be established by end of 2022. Prior to the establishment, the government has committed resources to support the process through district planning agency (Bappeda).

53. Jurisdictions with significant forest and conservation areas generally issue more regulations related to sustainable land use than the smaller ones. Sigi District, with relatively smaller size forest and conservation land, has published regulations on five topics of sustainable land use, including forest and peat protection and conservation, green growth planning, sustainable commodities, disaster/environmental management, and indigenous people and customary law.

54. As the proportion forest and conservation area against the total area of Sigi District is more than 70%, Sigi District relies heavily on their forest area for its ecosystem services, particularly on water and soil quality, resulting into a strong Jurisdictional Approach commitment to protect of the forest and conservation area, social forestry, and agrarian reform. Focusing on environmentally sound development and sustainable land use, Sigi will use its natural assets to increase its economic growth through sectors, such as ecotourism, forestry, and agriculture. Sigi has issued a local regulation on Regional Action Plan (Rencana Aksi Daerah/RAD) for sustainable development in Sigi District. There are also several initiatives on Lore Lindu National Park that involve all villages, including a formal agreement for the indigenous community surrounding the national park to utilize the forest sustainably.

B. Project context

55. Sigi District has developed its disaster risk assessment in 2020. The assessment has not covered many types of disasters and will need to be detailed down to be able to provide critical recommendations for mitigation and adaptation strategies. Mitigation and adaptation are the two strategies for addressing climate change. Mitigation is an intervention to reduce the emissions sources or enhance the sinks of greenhouse gasses. Adaptation is an adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities[37].

56. As climate risks are increasing, the Sigi government should be aware of which risks can be mitigated and which risks are not possible and

[37]Bruno Locatelli, Climate Change and Forests in the Congo Basin: Synergies between Adaptation and Mitigation: https://www.cifor.org/fileadmin/fileupload/cobam/ENGLISH-Definitions&ConceptualFramework.pdf

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will need to be approached through an adaptation framework. In terms of adaptation, there are several basic elements as the basis of developing a comprehensive adaptation strategy, which are water and air. Due to the intensive climate variability occurrences in the region, the water cycle in many regions are changing drastically. These changes are impacting the catchment water balance, which further affects the irrigation regime, energy production through hydropower dams, distribution of goods and services through the river networks, and other economic and development activities. In addition, the increasing occurrences of floods and long periods of droughts would be more threatening to the livelihoods of local communities, and business and economic continuity in the region.

57. Based on the public consultation in Sigi District, Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo villages have been decided as village candidates for the project implementation. These 6 villages are chosen because of their climate hazard impacts, vulnerability, agriculture commodities, Proklim village, and accessibility from Palu City.

The selection of Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo villages for the Adaptation Fund project in Sigi District is based on comprehensive public consultations that identified these areas as highly impacted by climate hazards such as flash floods. The table also highlights key insights regarding the common vulnerability to floods across all villages, emphasizing the urgent need for enhanced flood management strategies. These villages exhibit high to very high vulnerability levels, particularly in their agricultural sectors, which are crucial for local livelihoods. The chosen villages predominantly cultivate commodities like coconut, cacao, and paddy. Although none of these villages have yet attained Proklim (Climate Village) status, their accessibility from Palu City ensures practical implementation and monitoring of adaptation measures. These factors collectively underscore their suitability for focused climate resilience efforts under the project. Based on the context above, this proposal is focused on building a climate resilient district through a Water-Energy-Food nexus with Sigi District as the pilot.

Table 5. Proposed Pilot Villages Based On Priority Criteria

Village name	Climate Hazard Impacts	Vulnerability	Agriculture Commodities	Proklim Village
Pandere	Flash flood	High	Coconut, Candlenut and Cacao	Not yet
Pakuli Utara	Flash flood	High	Coconut and Cacao	Not yet
Simoro	Flash flood	High	Coconut and Cacao	Not yet
Bangga	Flash flood	Very high	Coconut and Cacao	Not yet

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Sambo	Flash flood	Very high	Paddy and Cacao	Not yet
Wisolo	Flash flood	Very high	Cacao	Not yet

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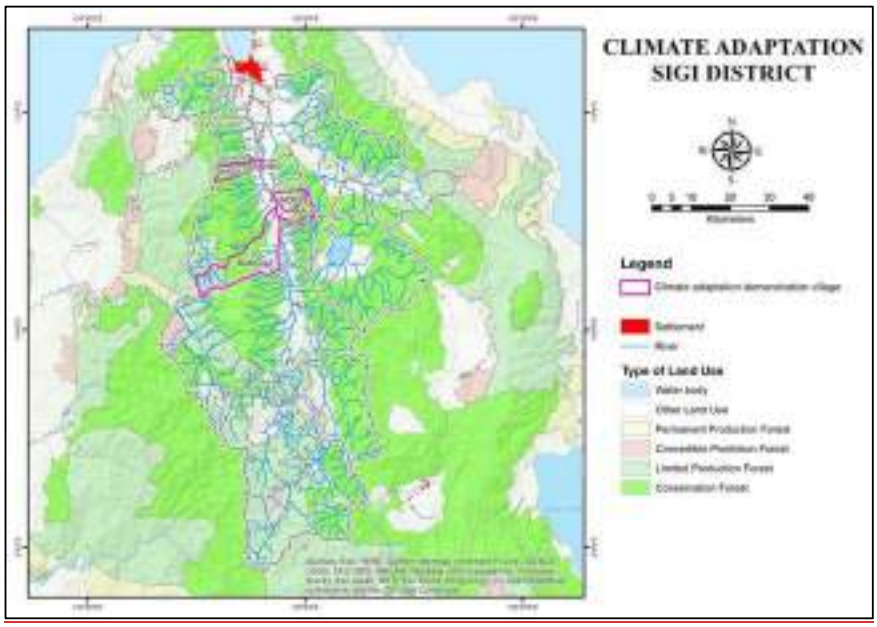

~~Table 4. Proposed Pilot Villages Based On Priority Criteria~~

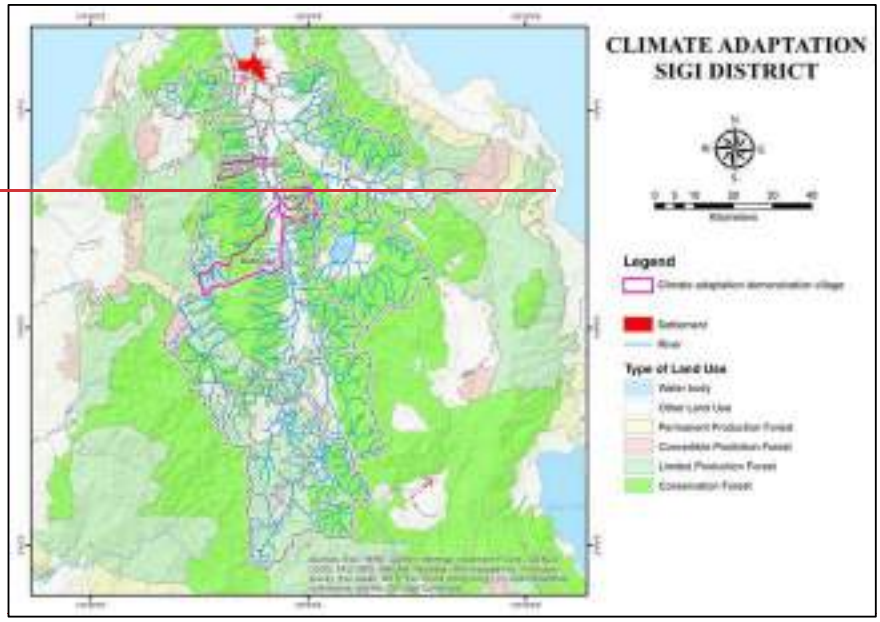

Figure 4. Map of Climate Adaptation Demonstration Village

58. Effective planning and implementation of climate change adaptation require a thorough understanding of current climate vulnerabilities and accurate projections of future impacts. A climate change vulnerability assessment will use an indicator-based approach that incorporates relevant local indicators, including those related to gender, age, and other social identities, as well as indicators focused on the Water-Energy-Food (WEF) nexus. This assessment will include factors such as access to electricity, water sources, and agricultural areas.

59. In addition to vulnerability assessments, capacity assessments will be conducted to address the critical issue of stakeholder capacity at all levels. By understanding capacity gaps, Sigi District can formulate appropriate actions for climate change adaptation. At the community level, the assessment will focus on existing community-based organizations relevant to adaptation and resilience programs. Furthermore, the project aims to strengthen governance through the Green Sigi Vision by supporting the development of Regional Action Plans for Climate Change Adaptation (RAD-API) and integrating these measures into other regional plans. The pilot implementation at the village level will involve WEF interventions, focusing on increasing community resilience and adaptive capacity through collaborative and multi-pronged approaches.

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Importance of Project

60. The consortium considered the above project components as critical for Sigi District. If the project is not available to be implemented, people living in climate vulnerable areas will suffer from a variety of risks, ranging from building damages and loss of income sources, to loss of lives. Without proper assessment of climate change vulnerability, areas in the district that are highly vulnerable to the impacts of climate change, will not be properly identified, which could lead to ineffective interventions. In addition, capacity assessment is needed to identify the current institutional capacity level of local stakeholders in implementing climate change adaptation actions and improvements. These assessments will serve as the basis for development RAD-API, which will be mainstreamed into regional planning for long-term actions. Without background study of RAD-API, Sigi District will not have adequate data and justification for pursuing regional sustainable development strategies that are climate-adaptive, and could limit the district's capacity and access to relevant funding needed for implementation.

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61. Without a strong enabling environment for implementing adaptation policies, the 6 project villages in Sigi District, which are highly vulnerable to flooding and drought, will face several significant challenges, such as efforts to adapt to climate impacts may be uncoordinated and insufficient, failing to address the unique vulnerabilities of each village; hinder capacity-building initiatives for local communities and authorities, leaving them ill-prepared to implement and sustain adaptation measures; and, hinder capacity-building initiatives for local communities and authorities, leaving them ill-prepared to implement and sustain adaptation measures.

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62. If the WEF Nexus approach is not applied to improve the effectiveness of the District's Climate Change Adaptation Action Plan, the interventions may be fragmented and less effective. This approach ensures integrated management of water, food, and energy resources, which is crucial for building resilience against climate hazards like flooding and droughts. Without it, there could be inefficient resource allocation, increased vulnerability, and reduced sustainability of adaptation measures. This could ultimately hinder the district's ability to achieve long-term climate resilience.

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63. Implementing a center of excellence for climate change adaptation at the district level is crucial for the community. This center will enhance the district's ability to monitor, evaluate, and learn from climate adaptation initiatives. It will document best practices, disseminate knowledge, and share lessons learned, ensuring that effective strategies are replicated and scaled up. Without this center, Sigi District risks losing valuable insights and innovations, leading to inefficient adaptation efforts and diminished community resilience against floods and droughts.

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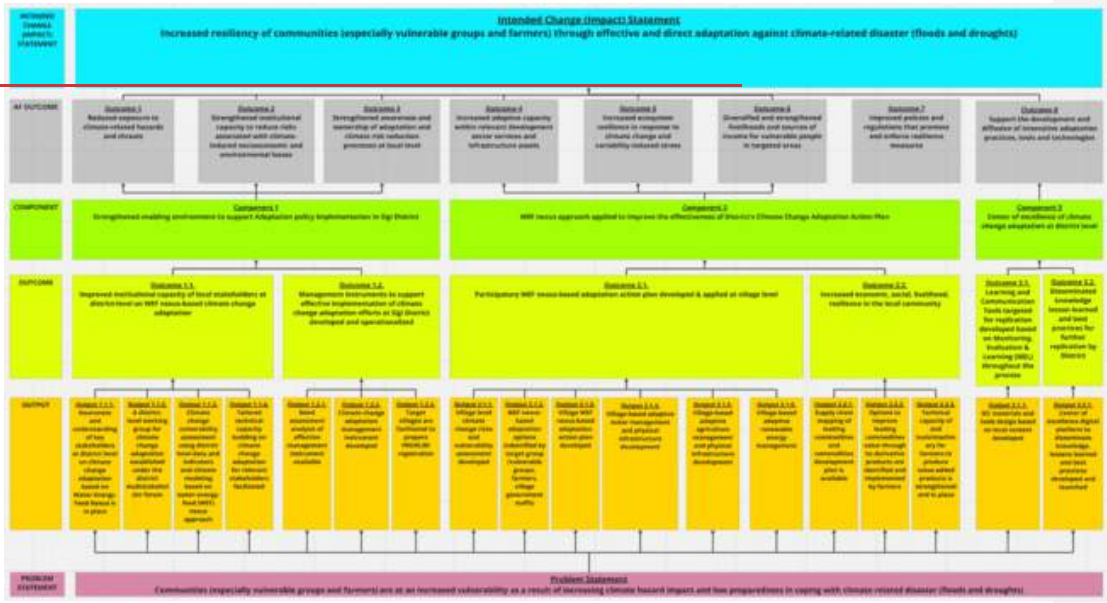
~~64.~~ Upon the development of effective and targeted action plans, the consortium considered the importance of showcasing how such action plans can be implemented on the ground. Implementation of small-scale projects specific to the needs of the focused vulnerable villages will help increase their resilience toward climate change. This pilot implementation will also serve as a demonstration for local stakeholders for replication in other areas facing similar challenges.

Project/Programme Objectives

~~65.~~64. The main objective of the proposed project is to increase the economic, social and ecosystem resilience of Sigi District towards the detrimental impacts of climate change. The consortium will achieve this objective by focusing on building climate resilience district through evidence-based climate change adaptation action with appropriate WEF nexus approach.

~~66.~~65. Below is the Theory of Change for the Project and alignment of the project objectives with the Adaptation Fund Result Framework at the outcome level ~~as indicated red boxes~~:



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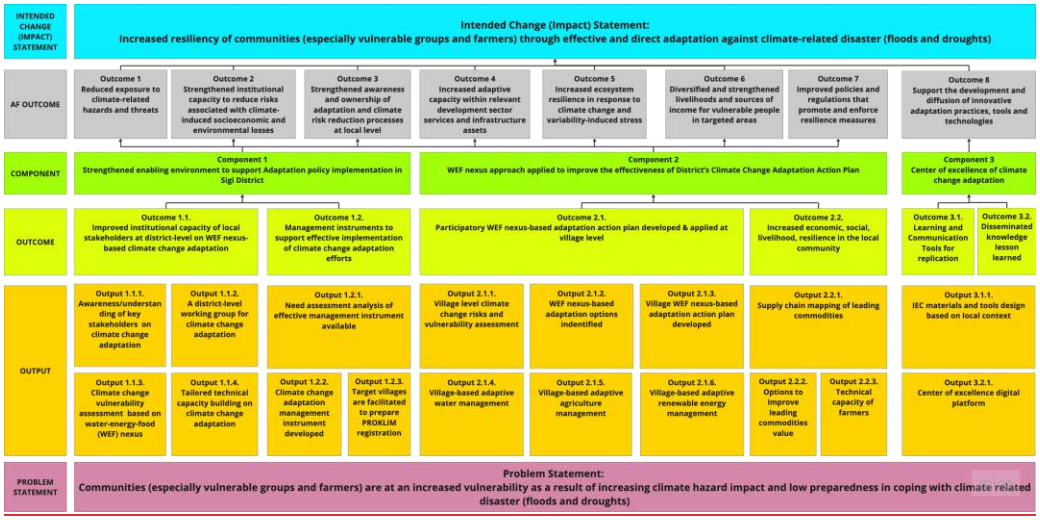

Figure 5. The Theory of Change (TOC)

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Project/Programme Components and Financing

~~67.~~66. The project to build a climate-resilient district in Sigi is structured around three main components, each with specific outputs and outcomes.

Component 1 aims to strengthen the enabling environment for adaptation policy implementation, focusing on enhancing institutional capacity and developing management instruments. Outputs include increased stakeholder awareness, the establishment of a working group, vulnerability assessments, technical capacity building, and management instruments.

Component 2 employs the Water-Energy-Food (WEF) nexus approach to improve the District's Climate Change Adaptation Action Plan. Outputs encompass village-level risk assessments, identification of WEF-based adaptation options, development of village adaptation plans, and construction of adaptive infrastructure. Additionally, this component aims to enhance economic resilience through supply chain mapping and value addition for local commodities.

Component 3 establishes a Center of Excellence for climate change adaptation at the district level. It focuses on developing learning and communication tools, including a digital platform to disseminate knowledge, lessons learned, and best practices.

In total, the project aims to foster a robust climate adaptation framework, enhance community resilience, and ensure sustainable development in Sigi District through a comprehensive budget allocation.

Table 6. Project/Programme Components and Financing

Project/ Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US$)
1. Component 1. Strengthened enabling environment to support Adaptation policy implementation in Sigi District	Output 1.1.1. Awareness and understanding of key stakeholders at district level on climate change adaptation based on Water-Energy-Food Nexus is in place	Outcome 1.1. Improved institutional capacity of local stakeholders at district-level on WEF nexus-based climate change adaptation	~~$249,252~~181,123
	Output 1.1.2. A district-level working group for climate change adaptation established under the district multistakeholder forum		
	Output 1.1.3. Climate change vulnerability assessment using district level data and indicators and climate modeling based on water-energy-food (WEF) nexus approach		
	Output 1.1.4. Tailored technical capacity building on climate change adaptation for relevant stakeholders facilitated		
	Output 1.2.1. Need assessment analysis of effective management instrument available	Outcome 1.2. Management instruments to support effective implementation of climate change adaptation efforts at Sigi District developed and operationalized	
	Output 1.2.2. Climate change adaptation management instrument developed		
	Output 1.2.3. Target villages are facilitated to prepare PROKLIM registration		
2. Component 2. WEF nexus approach applied to improve the effectiveness of District's	Output 2.1.1. Village level climate change risks and vulnerability assessment developed	Outcome 2.1. Participatory WEF nexus-based	~~$480,361~~413,485
	Output 2.1.2. WEF nexus-based adaptation		

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Climate Change Adaptation Action Plan	options indentified by target group (vulnerable groups, farmers, village government staffs)	adaptation action plan developed & applied at village level	
	Output 2.1.3. Village WEF nexus-based adaptation action plan developed		
	Output 2.1.4. Village-based adaptive water management and physical infrastructure development		
	Output 2.1.5. Village-based adaptive agriculture management and physical infrastructure development		
	Output 2.1.6. Village-based adaptive renewable energy management		
	Output 2.2.1. Supply chain mapping of leading commodities and commodities development plan is available	Outcome 2.2. Increased economic, social, livelihood, resilience in the local community	
	Output 2.2.2. Options to improve leading commodities value through its derivative products are identified and implemented by farmers		
	Output 2.2.3. Technical capacity of and tools/machinery for farmers to produce value-added products is strengthened and in place		
3. Component 3. Center of excellence of climate change adaptation at district level	Output 3.1.1. IEC materials and tools design based on local context developed	Outcome 3.1. Learning and Communication Tools targeted for replication developed based on Monitoring, Evaluation & Learning (MEL) throughout the process	~~$103,545~~71, 119
	Output 3.2.1 Center of excellence digital platform to disseminate knowledge, lessons learned and best practices developed and launched	Outcome 3.2. Disseminated knowledge lesson learned and best practices for further replication by District	
~~Total~~**4.** Project/Programme Execution Cost (9.5%)			~~**$833,158**~~87, 457
5. Project/Programme ~~Execution~~ Cost ~~(9.5%)~~			~~$87,458~~833, 159
6. Project/Programme Cycle Management Fee charged by the Implementing Entity ~~(8.5%)~~*if applicable)*			~~$~~78, 252
Amount of Financing Requested			~~$~~**998, 868**

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Projected Calendar

~~68.~~67. The projected timeline for the climate resilience project in Sigi District includes several key milestones. The project is set to commence in ~~March~~April 2025. A mid-term review is planned for ~~February~~March 2026 to assess progress and make necessary adjustments. The project will conclude in ~~January~~February 2027, followed by a terminal evaluation in ~~February~~March 2027 to evaluate its overall impact and effectiveness. This timeline ensures a structured approach to implementation, monitoring, and evaluation, facilitating effective adaptation measures in the district.

Table 7. Project/Programme Components and Financing

Milestones	Expected Dates
Start of Project/Programme Implementation	~~Maret~~April 2025
Mid-term Review (if planned)	~~Februari~~March 2026
Project/Programme Closing	~~Januari~~February 2027
Terminal Evaluation	~~Februari~~March 2027

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PART II: PROJECT/PROGRAMME JUSTIFICATION

A. ~~A.~~Project/Programme Components

~~69.~~68. Project Component 1: Strengthened enabling environment to support Adaptation policy implementation in Sigi District. This component is aligned with the Adaptation Fund Outcome 1: Reduced exposure to climate-related hazards and threats, the Adaptation Fund Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses, and the Adaptation Fund Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level.

~~70.~~69. The project outcome that is expected to be achieved under this component is

Outcome 1.1. Improved institutional capacity of local stakeholders at district-level on WEF nexus-based climate change adaptation, that is aligned with the Adaptation Fund Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning.

Outcome 1.2. Management instruments to support effective implementation of climate change adaptation efforts at Sigi District developed and operationalized, that is aligned with the Adaptation Fund Output 2.1: Strengthened capacity of national and sub-national centers and networks to respond rapidly to extreme weather events.

~~71.~~70. The project outputs will include:

Output 1.1.1. Awareness and understanding of key stakeholders at district level on climate change adaptation based on Water-Energy-Food Nexus is in place. This output will be achieved by conducting the following activities:

- ~~Activity~~ 1.~~1.1.1~~ Establish comprehensive (baseline,mid,endline) understanding of current institutional awareness on WEF Nexus-based climate change adaptation
- ~~Activity~~ 1.1.1.~~2.~~ Develop a detailed awareness programme on WEF Nexus-based Climate Change Adaptation
- ~~Activity~~ 1.1.1.~~3.~~ Workshop on climate change adaptation - WEF approach
- ~~Activity~~ 1.1.1.~~4.~~ Awareness Video/Photo/Poster competition among relevant district-level stakeholders and for public on WEF Nexus-based Climate Change Adaptation

Output 1.1.2. A district-level working group for climate change adaptation established under the district multistakeholder forum. This output will be achieved by conducting the following activities:

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- ~~Activity~~ 1.~~1.2.1~~ Brainstorming on the idea of working group establishment (role, function, workplan of draft working group)
- ~~Activity~~ 1.1.2.~~2~~ Drafting decision letter (SK) of Working Group
- ~~Activity~~ 1.1.2.3.~~.~~ Launching working group (discuss and agree on working group work plan)

Output 1.1.3. Climate change vulnerability assessment using district level data and indicators and climate modeling based on water-energy-food (WEF) nexus approach. This output will be achieved by conducting the following activities:

- ~~Activity~~ 1.~~1.3.1~~ Climate change vulnerability assessment through secondary data and FGD
- ~~Activity~~ 1.1.3.2.~~.~~ Develop climate change vulnerability assessment report

Output 1.1.4. Tailored technical capacity building on climate change adaptation for relevant stakeholders facilitated. This output will be achieved by conducting the following activities:

- ~~Activity~~ 1.~~1.4.1~~ Conducting need Assessment on Climate Change Adaptation Preparedness
- ~~Activity~~ 1.1.4.2.~~.~~ Develop a detailed training program and set of modules of technical training, including women and vulnerable groups
- ~~Activity~~ 1.1.4.3.~~.~~ Workshop and technical training on climate change adaptation, including women and vulnerable groups
- ~~Activity~~ 1.1.4.~~4~~ Technical assistance and facilitation for background study for Climate Change Adaptation Action Plan (RAD-API)

Output 1.2.1. Need assessment analysis of effective management instrument available. This output will be achieved by conducting the following activities:

- ~~Activity~~ 1.~~2.1.1~~ Initial assessment with interview and desk-analysis
- ~~Activity~~ 1.2.~~1.2~~ Consultation with Focus group discussions on management instruments with multistakeholders platform

Output 1.2.2. Climate change adaptation management instrument developed. This output will be achieved by conducting the following activities:

- ~~Activity~~ 1.~~2.2.1~~ Design management instrument
- ~~Activity~~ 1.2.~~2.2~~ Development of management instruments
- ~~Activity~~ 1.2.2.3.~~.~~ User trial test of management instruments
- ~~Activity~~ 1.2.2.4.~~.~~ Dissemination & training of management instrument
- ~~Activity~~ 1.2.2.5.~~.~~ Climate awareness goes to schools (trainings)

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Output 1.2.3. Target villages are facilitated to prepare PROKLIM registration. This output will be achieved by conducting the following activities:

- ~~Activity~~ 1.~~2.3.1~~ Workshop, training, and socialization PROKLIM at village level
- ~~Activity~~ 1.2.~~3.2~~ PROKLIM registry assistance with enumerators

~~72.~~71. Component 2. WEF nexus approach applied to improve the effectiveness of District's Climate Change Adaptation Action Plan. This component is aligned with the Adaptation Fund Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets, the Adaptation Fund Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress, and the Adaptation Fund Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas.

~~73.~~72. The project outcome that is expected to be achieved under this component is

Outcome 2.1. Participatory WEF nexus-based adaptation action plan developed & applied at village level, that is aligned with the Adaptation Fund Output 4.1: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability.

Outcome 2.2. Increased economic, social, livelihood, resilience in the local community, that is aligned with the Adaptation Fund Output 8.1: Viable innovations are rolled out, scaled up, encouraged and/or accelerated.

~~74.~~73. The project outputs will include:

Output 2.1.1. Village level climate change risks and vulnerability assessment developed. This output will be achieved by conducting the following activities:

- ~~Activity~~ 2.1.~~1.1~~ Focus grup discussions (preparedness and awareness on climate change risk and vulnerability assessment)
- ~~Activity~~ 2.~~1.1.2~~ Develop rapid assessment on climate change risks and vulnerability~~.~~, including women and vulnerable groups
- ~~Activity~~ 2.1.1.3.~~.~~ Diseminate result of rapid assessment to all village stakeholders

Output 2.1.2. WEF nexus-based adaptation options indentified by target group (vulnerable groups, farmers, village government staffs). This output will be achieved by conducting the following activities:

- ~~Activity~~ 2.1.~~2.1~~ Develop pre-material on adaptation options
- ~~Activity~~ 2.~~1.2.2~~ Facilitate FGDs on adaptation options
- ~~Activity~~ 2.1.2.3.~~.~~ Develop IEC materials of identifed adaption

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options (WEF Nexus)

- 2.1.2.4 Monitoring and evaluation of climate adaptation actions

Output 2.1.3. Village WEF nexus-based adaptation action plan developed. This output will be achieved by conducting the following activities:

- ~~Activity~~ 2.1.~~3~~.1 Develop action plan
- ~~Activity~~ 2.~~1~~.3.2 Support village to propose identified actions to be financed by village fund and by Adaptation Fund
- ~~Activity~~ 2.1.3.~~3~~ Workshop on viillage climate adaptation plan

Output 2.1.4. Village-based adaptive water management and physical infrastructure development. This output will be achieved by conducting the following activities:

- ~~Activity~~ 2.1.~~4~~.1 Strengthen water adaptive management village task force
- ~~Activity~~ 2.~~1~~.4.2 WASH household-based e-Survey
- ~~Activity~~ 2.1.4.3~~. Develop activity plan for~~ Conduct public consultation and develop adaptive water management~~, physical construction, operation & maintenance, and monitoring/evaluation~~ plan
- ~~Activity~~ 2.1.4.~~4~~ Evidence-based planning and budgeting for village WASH program
- ~~Activity~~ 2.1.4.5~~.~~ Physical construction of adaptive water infrastructure (NbS knock-down levee along the river 500 meter)
- ~~Activity~~ 2.1.4.6~~.~~ Physical construction of adaptive water infrastructure (ponds)
- ~~Activity~~ 2.1.4.7~~.~~ Physical construction of adaptive water infrastructure (mini nature-based water treatment plant & distribution pipe)
- ~~Activity~~ 2.1.4.8~~.~~ Physical construction of adaptive water infrastructure (household water and sanitation facility)

Output 2.1.5. Village-based adaptive agriculture management and physical infrastructure development. This output will be achieved by conducting the following activities:

- ~~Activity~~ 2.1.~~5~~.1 Strengthen adaptive Agriculture management village task force (Kelompok Tani)
- ~~Activity~~ 2.~~1~~.5.2 Survey and identify of flood prone on agriculture areas (physical) and cultural heritage (social)
- ~~Activity~~ 2.1.5.3~~.~~ Develop activity plan for adaptive agriculture management & physical infrastructure
- ~~Activity~~ 2.1.5.4~~.~~ Build demonstration plot nursery to produce seedlings for the establishment of plantations
- ~~Activity~~ 2.1.5.~~5~~ Improvement/construction of agriculture irrigation/drainage system with implemented safety protocols
- ~~Activity~~ 2.1.5.6~~. Flood~~ Biogeographic assessment for

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natural food plain development and restoration

- ~~Activity~~ 2.1.5.7.~~.~~ ___Retention well construction in flood prone areas of plantations while safeguarding local wisdom/value

Output 2.1.6. Village-based adaptive renewable energy management. This output will be achieved by conducting the following activities:

- ~~Activity~~ 2.1.~~6.1~~ ___Development module of efficiency and energy management
- ~~Activity~~ 2.~~1.6.2~~ ___Solar PV installment for climate impact information
- ~~Activity~~ 2.1.6.3.~~.~~ ___Climate IoT tools and software development for supporting sustainable agriculture
- ~~Activity~~ 2.1.6.4.~~.~~ ___Improving internet access for climate resilience information
- ~~Activity~~ 2.1.6.5.~~.~~ ___Capacity building to build the technical skills related to the installation and use of solar PV systems and climate IoT tools
- ~~Activity~~ 2.1.6.~~6~~ ___Conducting FGD for ~~–~~Community-driven climate resilience information sharing
- ~~Activity~~ 2.1.6.7.~~.~~ ___Conducting for Workshop Community awareness on energy efficiency and management

Output 2.2.1. Supply chain mapping of leading commodities and commodities development plan is available. This output will be achieved by conducting the following activities:

- ~~Activity~~ 2.2.1.~~1~~ ___Conduct supply chain analysis on leading commodities
- ~~Activity~~ 2.~~2.1.2~~ ___Conduct market demand and distribution analysis on leading commodities and derivative products
- ~~Activity~~ 2.2.1.3.~~.~~ ___Develop sustainable commodities development plan

Output 2.2.2. Options to improve leading commodities value through its derivative products are identified and implemented by farmers. This output will be achieved by conducting the following activities:

- ~~Activity~~ 2.2.2.1.~~.~~ ___Identification of preferable derivative products to be further developed to increase income of farmers
- ~~Activity~~ 2.~~2.2.2~~ ___Conduct identifed derivative products distribution analysis to ensure product reaching the right market at the right time (including identinfying buyers)

Output 2.2.3. Technical capacity of and tools/machinery for farmers to produce value-added products is strengthened and in place. This output will be achieved by conducting the following activities:

- ~~Activity~~ 2.2.3.1.~~.~~ ___Training of trainers for farmers on value-added commodities production
- ~~Activity~~ 2.~~2.3.2~~ ___Developing appropriate Processing Tools/Machinery/Technology for the farmers (to be granted to Village enterprise/BUMDes)

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- ~~Activity~~ 2.2.3.~~3~~ Training for village enterprises to develop business model e.g. market, distribution, and Return of Investment (RoI)
- ~~Activity~~ 2.2.3.4.~~.~~ Workshop on ~~increasing on~~ empowering women and vulnerable groups' resilience (economic, social, livelihood~~, resilience in the local community~~)

~~75.~~74. Component 3. Center of excellence of climate change adaptation at district level. This component is aligned with the Adaptation Fund Outcome 8: Support the development and diffusion of innovative adaptation practices, tools and technologies.

~~76.~~75. The project outcome that is expected to be achieved under this component is

Outcome 3.1. Learning and Communication Tools targeted for replication developed based on Monitoring, Evaluation & Learning (MEL) throughout the process, that is aligned with the Adaptation Fund Output 8.1: Viable innovations are rolled out, scaled up, encouraged and/or accelerated.

Outcome 3.2. Disseminated knowledge lesson learned and best practices for further replication by District, that is aligned with the Adaptation Fund Output 8.1: Viable innovations are rolled out, scaled up, encouraged and/or accelerated.

~~77.~~76. The project outputs will include:

Output 3.1.1. IEC materials and tools design based on local context developed. This output will be achieved by conducting the following activities:

- ~~Activity~~ 3.1.~~1~~.1 Identify local context on adaptation efforts for designing IEC materials and tools
- ~~Activity~~ 3.1.1.2.~~.~~ Developing IEC materials and tools design based on local context and lessons learned from the project
- ~~Activity~~ 3.~~1~~.1.3 Public consultation on the IEC materials and tools
- ~~Activity~~ 3.1.1.4.~~.~~ Finalization of IEC materials and tools design based on local context
- ~~Activity~~ 3.1.1.5.~~.~~ Development of project lessons learned
- ~~Activity~~ 3.1.1.6.~~.~~ Develop communication strategy
- ~~Activity~~ 3.1.1.7.~~.~~ Create short documentary about community based climate adaptation
- ~~Activity~~ 3.1.1.8.~~.~~ Dissemenation of communication product (short documentary)

Output 3.2.1 Center of excellence digital platform to disseminate knowledge, lessons learned and best practices developed and launched. This output will be achieved by conducting the following activities:

- ~~Activity~~ 3.2.1.~~1~~ Design centre of excellence digital platform

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- ~~Activity~~ 3.2.~~1~~.2 User trial test of the centre of excellence digital platform
- ~~Activity~~ 3.~~2~~.1.3 Sub national policy dialogue for identification learning and sharing climate adapatation action plan (district and province)
- ~~Activity~~ 3.2.1.4.~~.~~ Launcing of Sigi District Climate Change Adaptation Centre of Excellence (back-to-back with Closing Ceremony of the Projects)

B. Economic, Social, and Environmental Benefits

Economic and Social Benefits

~~78.~~77. The project will have a direct impact on climate adaptation planning to disaster mitigation and preparedness, economic resilience, and climate-adaptive livelihood. The total direct beneficiaries of this project reached 1,543 peoples with six pilot villages targeted namely Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo villages. ~~Each village has a specific number of direct beneficiaries, with Bangga having the highest number at 411 households.~~ The project targets both male and female residents, ensuring gender-inclusive benefits.

~~Village~~	~~2022 Population[38]~~			~~Direct Beneficiries (identification from Project Outputs)[39]~~	
	~~Male~~	~~Female~~	~~Total~~	~~Peoples~~	~~Households~~
~~Pandere~~	~~1345~~	~~1312~~	~~2657~~	~~399~~	~~97~~
~~Pakuli Utara~~	~~769~~	~~706~~	~~1475~~	~~221~~	~~54~~
~~Simoro~~	~~489~~	~~466~~	~~955~~	~~143~~	~~35~~
~~Bangga~~	~~1458~~	~~1285~~	~~2743~~	~~411~~	~~100~~
~~Sambo~~	~~623~~	~~612~~	~~1235~~	~~185~~	~~45~~
~~Wisolo~~	~~632~~	~~592~~	~~1224~~	~~184~~	~~45~~
~~Total~~				~~1543~~	~~376~~

~~Table 5. Project Beneficiaries~~

~~79.~~78. Sigi is also selected for its leadership on the national level LTKL, focusing on accelerating the implementation of sustainable development. In functional level, the project would equip and enable 50 officials in the District Government Agencies/Office in Sigi[40] to implement the climate adaptation regional planning and develop an economic resilience model. When implemented, it would contribute to

[38] ~~BPS Kabupaten Sigi. (2023). Kabupaten Sigi Dalam Angka 2022.~~

[39] ~~Consortium assessment based on needs, survey, and Project Outputs 2024~~

[40] https://sigikab.go.id/index.php/pemerintahan/organisasi-perangkat-daerah.html

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the growing of sustainable forest or agricultural commodities.

~~80.~~79. The availability of Gender Responsive and Inclusive Climate Risk Profile and the recommendation of priority adaptation actions will help stakeholders (private sector and community) to anticipate climate risks, such as floods and droughts, to secure their business continuity, such as production and distribution of goods and services, distribution of goods, crops, etc. In addition to that, as the program will contribute to the fulfillment of Sigi's Regional Competitiveness Framework[41], it will directly affect the income-generation as it complies with the sustainable investment appetite and sustainable supply chain from agricultural and forestry commodities. It is expected to increase Sigi's gross regional domestic products from the forestry, agriculture, and fisheries sectors beyond 43% of the entire Sigi's GRDP[42].

Table 8. Project Beneficiaries

Village	2022 Population			Direct Beneficiaries (identification from Project Outputs)		
	Male	Female	Total	Male	Female	Households
Pandere	1345	1312	2657	190	209	97
Pakuli Utara	769	706	1475	107	114	54
Simoro	489	466	955	69	74	35
Bangga	1458	1285	2743	210	201	100
Sambo	623	612	1235	99	86	45
Wisolo	632	592	1224	89	95	45
Total				764	779	376
				1543		

	Baseline	Target at project approval	Adjusted target first year of implementation	Actual at completion
Direct beneficiaries supported by the project				

[41]https://www.kabupatenlestari.org/en/document/kerangka-daya-saing-daerah-kdsd-booklet/
[42]https://sigikab.go.id/dokumen%202020/RKPD%20MURNI%202019.pdf

Female direct beneficiaries	0	779	400	379
Youth direct beneficiaries	0	125	80	45
Indirect beneficiaries supported by the project				
Female indirect beneficiaries	0	4973	2500	2473
Youth indirect beneficiaries	0	450	225	225

Environmental Benefits

~~81.~~80. The project will inform the government and other stakeholders to understand the change of nature due to the impact of climate change. This understanding is expected to expand the options on innovative adaptation solutions, especially nature-based adaptation solutions, to respond to the risks, such as, flood and drought in Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo villages. For the village residents, the project will directly contribute to the district's capacity in water, food, and energy management.

Gender and Vulnerable Group Benefits

~~82.~~81. Building Sigi as a resilient district would impact gender mainstreaming, where the involvement of women and vulnerable groups in various activities is concerned, with a minimum of 30% participation of women. As the primary caregivers, women are responsible for the family's daily subsistence selections but are often not remunerated (Ferrant et al., 2014). However, women are disproportionately affected by the lack of cleaner and affordable energy options (Energia, 2008). Such is the case of Sigi, Central Sulawesi, and with 43 villages left in the dark, maternal mortality rates are high. Despite recognising that women are natural safeguards of natural resources, women in Sigi still lack access to essential services and voice and representation in decision-making. Particularly in rural areas, women play significant roles in small-scale agriculture and informal income-generating activities.

~~83.~~82. The project would integrate women's and youth active participation in key activities in the planning and consultation process both at the strategic level through 30% participation in multi-stakeholder consultation and planning at the district level to the implementation process at the village level. Women's dan youth involvement~~, including women~~ from the ~~indigenous~~local communities, will be accounted as key decision makers and front liners in climate mitigation and adaptation communication to targeted community groups and the wider public. The income-generating activities at the village level will also directly involve women and youth, from deciding which plantation commodities to be cultivated, such as cocoa, coffee and coconut, to post-harvest and going to the market activities, including how they decide on how to grow the livelihood into economically valuable products and how they would access financing

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through cooperatives, VSLA or other community-driven initiatives. Environment safeguarding activities will also involve women, such as ensuring their inclusion as water committee members and/or in community forest stewardship initiatives and disaster management forum.

~~84.~~83. The Incorporation of gender analysis can increase the effectiveness of measures to protect people from climate variability and change. Gender-sensitive research is needed, including collecting, analysing and reporting sex-disaggregated data. Including gender-relevant considerations will strengthen jurisdictions' climate resilient planning. The availability of a Gender Responsive and Inclusive Climate Risk Profile will help all stakeholders, especially the vulnerable groups, to be able to understand climate risk related to Water-Energy-Food security and to have the capacity to reduce the risks. The project will develop a Gender Responsive and Inclusive Climate Risk Profile to ensure that an effective gender mainstreaming approach is implemented throughout the project design, development, and implementation, where different needs of different gender groups are identified, sensitivities across gender groups are considered, and the interventions are tailored to meet different needs. This profile will be accessible to all stakeholders (i.e., braille version, infographic for those unable to read, etc.).

C. ~~C.~~ Cost Effectiveness

~~85.~~The ~~project aims to enhance climate change adaptation in Sigi District through three main components with specific outputs and outcomes, amounting to a total cost~~cost-effectiveness analysis of ~~$998,868~~

Component 1 focuses on ~~building institutional capacity and effective management instruments, fostering~~ strengthening the enabling environment to support climate adaptation policy implementation in Sigi District. The proposed intervention, which includes targeted stakeholder engagement and district-specific climate ~~risk-proofing~~vulnerability assessments, has a total budget allocation of ~~infrastructure, which could lead to sustained economic and environmental benefits while avoiding severe~~$278,583. This investment aims to provide precise climate ~~impacts.~~

~~**Component 2** emphasizes~~modeling based on the Water-Energy-Food (WEF) nexus approach~~ for village-level adaptation plans, enhancing community resilience and reducing livelihood loss due to climate change.~~

~~**Component 3** establishes a center of excellence to disseminate knowledge, best practices, and tools tailored to the local context~~, ensuring ~~informed and effective~~that adaptation strategies~~. The Center will serve as a hub for knowledge sharing, fostering a community of~~

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~~practice among stakeholders, which helps avoid greater losses in agriculture, livelihoods, and infrastructure due to lack of information and resources.~~

~~Beneficiaries of the project~~ are ~~1,543 individuals living in six villages, namely Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo. These villages are frequently affected by flooding, which significantly impacts their livelihoods. Flooding events occur 2-3 times annually with increasing frequency and intensity, causing extensive damage to infrastructure and reducing agricultural productivity. This is particularly detrimental to the production of key commodities like cocoa and coconut.~~

84. well-targeted and effectively address local climate challenges. The ~~Water-Energy-Food (WEF) Nexus approach aims to enhance the adaptive capacity of~~ intervention's benefits include enhanced stakeholder capacity to design and implement sustainable adaptation measures, reducing long-term economic losses associated with climate-related disasters. Additionally, accurate vulnerability assessments enable strategic resource allocation, minimizing economic disparities and ensuring inclusive growth for vulnerable ~~communities to climate impacts by maximizing added value and improving cost-effectiveness compared to conventional infrastructure approaches. The construction of embankments, use of concrete and synthetic materials, and riverbed excavation and reinforcement are estimated to cost between $1,700,000 and $4,100,000 per kilometer~~community groups such as farmers, women, and youth.

85. The cost-effectiveness analysis of Component 1 focuses on strengthening the enabling environment to support climate adaptation policy implementation in Sigi District. The proposed intervention, which includes targeted stakeholder engagement and district-specific climate vulnerability assessments, has a total budget allocation of $278,583. This investment aims to provide precise climate modeling based on the Water-Energy-Food (WEF) nexus approach, ensuring that adaptation strategies are well-targeted and effectively address local climate challenges. The intervention's benefits include enhanced stakeholder capacity to design and implement sustainable adaptation measures, reducing long-term economic losses associated with climate-related disasters. Additionally, accurate vulnerability assessments enable strategic resource allocation, minimizing economic disparities and ensuring inclusive growth for vulnerable community groups such as farmers, women, and youth.

86. In comparison, the alternative intervention, with a budget of $280,000, proposes regional workshops and district-level climate vulnerability analyses. However, this approach may not provide the same level of strategic engagement and precision in addressing community-specific

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challenges. Regional workshops often result in short-term engagement with stakeholders, lacking sustained action and leading to generalized findings that may not align with village or community-level vulnerabilities. From a financial perspective, investing in a more comprehensive, localized adaptation strategy ensures a higher return on investment (ROI) by optimizing resource utilization and reducing potential economic losses in the future.

87. The cost-effectiveness analysis of Component 2, which applies the Water-Energy-Food (WEF) nexus approach to improve the district's climate adaptation action plan, highlights significant budget considerations across different interventions. The proposed intervention for improving village-based adaptive water management and physical infrastructure development is allocated a budget of $448,360, emphasizing a cost-efficient nature-based knock-down levee solution. This approach reduces construction and maintenance costs compared to traditional embankment methods, which are estimated to cost IDR 1.6 billion per km (approximately $104,781 USD/km), with a maximum cost reaching $6 million USD/km in other projects within the Sigi region. The proposed levee offers better flexibility, environmental sustainability, and lower long-term financial liabilities, making it a more viable investment.

88. In contrast, the alternative intervention of river embankment construction requires a significantly higher budget allocation of $6 million, reflecting the substantial costs associated with materials such as concrete and steel. Although this option allows for quick implementation, it presents higher risks of damage and costly repairs over time. Additionally, for improving village-based adaptive renewable energy management, the proposed intervention includes solar PV installation with an estimated operational cost of $7,300 USD annually, whereas the alternative use of diesel generators would incur recurring fuel expenses of $10 per day, resulting in a 3-4 times higher total cost over a five-year lifecycle. These cost comparisons demonstrate that the proposed solutions, despite their upfront investment, provide superior financial sustainability and resilience benefits in the long run.

89. The cost-effectiveness analysis of Component 3: Center of Excellence for Climate Change Adaptation at District Level evaluates the financial and operational feasibility of establishing a digital knowledge-sharing platform compared to traditional multistakeholder meetings. The proposed intervention, with a budget allocation of $106,216, aims to develop and launch a digital platform that will provide continuous access to climate adaptation knowledge, lessons learned, and best practices. This approach offers significant cost savings by eliminating recurring expenses associated with physical workshops, travel, venue rentals, and printed materials, which typically account for 20-30% of conventional training budgets. Moreover, the digital platform ensures inclusivity by allowing a wider range of stakeholders, including remote

communities, to access valuable resources and participate in decision-making processes without geographical constraints.

90. In contrast, the alternative intervention, with a slightly lower budget involves conducting multistakeholder knowledge-sharing meetings. However, has inherent limitations, including a restricted timeframe, limited reach, and the absence of a consolidated digital data repository. Without a digital component, knowledge dissemination becomes fragmented, and stakeholders may face challenges in retaining and applying key insights effectively.

Table 9. Cost Effectiveness

	Conventional Physical Infrastructure	Water Energy Food Nexus
~~Total cost~~	~~$1,700,000 - $3,500,000~~	~~$998,868~~
Protection benefit	Relatively quick to achieve when the construction ends	Provides ecosystem services and socio-cultural viability; supports long-term resilience
Materials	~~Semen, pasir, kerikil beton, pengendali banjir~~Cement, sand, gravel, concrete, flood control system	Supports natural materials like riparian buffers, ~~wetland~~forest restoration, and floodplain reconnection
Adaptability	Low, requires significant modifications for changes	High, adapts to changing environmental conditions
Effect for coastal ecosystems	Limited or potentially negative impacts due to artificial structures	Positive impacts due to nature-based solutions
Socio-cultural viability	Often low, as it may not align with traditional practices	High, as it integrates community practices and sustainable agriculture
Economic retention	High initial cost with potential ongoing maintenance expenses	Enhances long-term economic benefits by sustaining agricultural productivity and reducing repair costs
Regulatory Compliance	Meets strict environmental and sustainability regulations	Requires numerous permits and oversight

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Table 10. Cost Effectiveness With Quantitative Estimates

Project/ Programme Components	Intervention	Activity	Effectiveness	Socio Economic Benefit During and After the Project	Budget
Component 1. Strengthened enabling environment to support Adaptation policy implementation in Sigi District	Propose Intervention	Awareness and understanding of key stakeholders at district level on climate change adaptation based on Water-Energy-Food Nexus is in place	This approach focuses on inviting key stakeholders who are directly involved in and responsible for climate adaptation actions making it more strategic than engaging participants who may not have a direct role. Additionally, the WEF nexus framework is highly specific and tailored to local contexts, addressing key challenges and delivering targeted solutions.	This activity can strengthen understanding of climate risks and allows stakeholders to design and implement sustainable adaptation measures that improve resilience. Then, policies informed by the WEF nexus approach optimize resource use and enhance livelihoods. Early awareness minimizes the long-term economic impacts of climate change by reducing vulnerability to disasters.	278,583
		Conduct climate change vulnerability assessment using district level data and indicators and climate modeling based on water-energy-food (WEF) nexus approach	This is because utilizing district-specific data provides a more accurate representation of local conditions, leading to more precise climate modeling. Accurate modeling ensures that any climate adaptation plans developed are targeted and effective in addressing real challenges on the ground.	Accurate climate modeling allows communities to anticipate risks and take preventive actions, reducing loss of lives and property. Adaptation plans based on precise vulnerability assessments ensure investments are targeted at the most critical areas. Tailored adaptation strategies address the specific needs of vulnerable groups (e.g., farmers, women, youth), reducing socio-economic disparities and ensuring inclusive growth.	
	Alternative Intervention	Regional workshops for district program socialization	Regional workshops often involve a one-time or short-term engagement with stakeholders, which may not lead to sustained awareness or action.	-	280,000
		Climate vulnerability analysis at the district level	Conducting analysis at the district level often results in generalized findings that may not accurately reflect village or	-	

			community-level vulnerabilities, leading to less targeted interventions.		
Component 2. WEF nexus approach applied to improve the effectiveness of District's Climate Change Adaptation Action Plan	Propose Intervention	Improving Village-based adaptive water management and physical infrastructure development	The construction of a nature-based knock-down levee along the river offers a more cost-effective and flexible solution compared to traditional dams by utilizing modular, eco-friendly materials that can be easily assembled, disassembled, and adapted to changing environmental conditions. This approach enhances flood resilience by allowing natural water flow regulation, reducing environmental disruption, and providing a sustainable alternative with lower maintenance and construction costs.	During the project, setting up a village task force and conducting WASH e-surveys help the community get involved in managing their water needs. After the project, better water access and management will improve water access, and make the village more resilient to climate challenges.	448,360
		Improving Village-based adaptive agriculture management and physical infrastructure development	Developing an activity plan for adaptive agriculture management and physical infrastructure ensures a structured approach to improving farming practices and resilience to climate challenges. Establishing a demonstration plot nursery helps farmers access quality seedlings, while floodplain development and retention well construction in flood-prone plantation areas reduce waterlogging risks, enhance soil moisture retention, and support long-term agricultural productivity.	Strengthening farmer groups and planning adaptive agriculture will create jobs and build skills, while after the project, it will boost productivity, income, and resilience to climate change	
		Improving Village-based adaptive renewable energy management	Installing solar PV for climate impact information provides a reliable and sustainable energy source to power climate monitoring systems in rural areas. The development of Climate IoT tools and improved internet access will enable farmers to receive	Training and community discussions will build technical skills and awareness, while after the project, they will support better energy management and climate resilience, with technical management/maintain	

			real-time data, make informed decisions, and adopt sustainable agricultural practices, ultimately enhancing their resilience to climate change.	overseen by the Multistakeholder Forum (MSF) Sigi.	
	Alternative Intervention	River embankment construction	Using materials such as concrete and other traditional methods can be costly and have a higher risk of damage compared to nature-based solutions. Cost estimation for creating River Embankment construction in Sulawesi is about IDR 1.6 Billion/Km or 104.781 USD per km USD.[43] While the maximum estimation from other projects in Sigi Region is about 6,000,000 USD/km.[44]	The project can be implemented quickly and completed immediately; however, for long-term sustainability, it carries a high risk of damage, which may lead to expensive repairs.	6,000,000
		Seed procurement project	This intervention overlooks the potential for local seed production and depends on external suppliers. While the estimated cost for seed procurement in villages ranges between 60-100 million IDR, the community often raises concerns about the seeds' productivity and suitability to local environmental conditions.	The community can obtain and plant the seeds based on land availability; however, in the long run, uncertainties remain regarding yield suitability and soil compatibility.	
		Use of diesel generators (gensets)	Requires daily maintenance and fuel supply, which can be costly, with an estimated operating cost of 10 USD per day. Estimate USD 7,300/year. Comparison with batery PV system life cycle (5 years), it will cost 3-4 times more expensive.[45]	Renewable energy solutions provide a more sustainable option for powering climate information and agricultural management systems.	

[43] https://ppid.sultengprov.go.id/wp-content/uploads/2023/08/RENJA-CIKASDA.pdf
[44] https://www.kompas.com/properti/read/2023/12/14/163000421/infrastruktur-pengendali-banjir-dibangun-di-tiga-sungai-kota-palu
[45] https://sultengterkini.id/2023/09/01/catat-ini-daftar-harga-bbm-pertamina-naik-1-september-2023/

Component 3. Center of excellence of climate change adaptation at district level	Propose Intervention	Creating Center of excellence digital platform to disseminate knowledge, lessons learned and best practices developed and launched	Developing a Center of Excellence digital platform offers a cost-effective solution by providing continuous access to knowledge and resources without the recurring costs of physical workshops and printed materials	The platform will empower communities by improving access to valuable information, training, and networking opportunities, enabling them to adopt better climate adaptation practices. After the project, it will foster long-term economic growth by enhancing skills, increasing employment opportunities, and supporting informed decision-making	106,216
	Alternative Intervention	Multistakeholder knowledge sharing meeting	The workshop is conducted within a limited timeframe and is not consolidated with digital data, which hinders inclusive access for all stakeholders who could learn and participate.	-	102,000

D. Consistent With National or Sub-National Sustainable Development Strategies

~~86.~~91. The proposed project will support and align to several key national development strategies and commitments. It corresponds directly with Indonesia's commitment towards climate change mitigation and adaptation, as formalized in the National Determined Contribution (NDC) and the NDC roadmap, the National Medium-Term Development Planning (Rencana Pembangunan Jangka Menengah Nasional/RPJMN) 2020-2024[46] and National Action Plans for Climate Change Adaptation (Rencana Aksi Nasional Adaptasi Perubahan Iklim/RAN API) by the Ministry of National Planning. The three national strategic documents outline key agendas, especially building the environment and increasing disaster and climate change and economic resilience, including local government and people preparedness by expanding multi-sector partnerships. The strategies focus on the synergy of regional spatial use and the number of regencies and cities with detailed spatial planning for resilience to disaster and climate change, especially on building strength in safeguarding food, water, and energy resources. The consortium, through Component 1, will support the district in developing the action plans for addressing climate change mitigation and adaptation efforts, through Component 2, will support resilient Water-Energy-Food (WEF) independence in 6

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[46] Narasi RPJMN 2020-2024, https://old.bappenas.go.id/files/rpjmn/Narasi-RPJMN-2020-2024-versi-Bahasa-Inggris.pdf

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selected vulnerable villages namely Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo villages, as well as through Component 3, will monitors and documents best practices for wider replication.

~~87.~~92. The project would also contribute to the Government of Indonesia's target of the number of regencies and cities with detailed spatial planning for resilience to disaster and climate change from 37 regencies and cities in 2019 to 250 regencies and cities in 2024 stipulated in RPJMN 2020-2024. Regional-level action plans act as building blocks of the national-level action plans and provide locally. The government of Sigi District will develop Sigi District's climate change adaptation plans to align with the national-level strategies.

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~~88.~~93. The project also corresponds with The Presidential Regulation on 98/2021, which stipulates the implementation of carbon economic value that emphasizes Indonesia's efforts in climate change mitigation and adaptation, covering multiple priority sectors, such as food, water, energy, health, and ecosystem. This project aims to support the achievement of this commitment by supporting regional climate adaptation planning and implementation through climate change vulnerability and capacity assessment to provide data and information on current and future vulnerable areas that can be used as baseline information. In contrast, the capacity-building element of this project aims to ensure the project's sustainability by ensuring proper implementation carried out by local stakeholders that includes monitoring and evaluation within and beyond the project period. The implementation element of this project will support existing on-the-ground projects that target priority sectors, namely water, food, and energy in Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo villages.

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~~89.~~94. The proposed project will also support the Strategic Plan of the Directorate General of Climate Change of the Ministry of Environment and Forestry (Renstra PPI) through the assessment of local and data-driven climate vulnerability and capacity, which Sigi District can use for developing strategies and action plans to increase its water, food, and energy securities. Proposed implementation elements of this project aim to serve as a model of how adaptation strategies are implemented at the village level, where water, food, and energy security is secured, while aiming to increase economic, social, ecosystem and livelihood resilience in Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo villages. Such exemplary models will serve as “success stories” that showcase successful village-level transition into becoming climate-adaptive and can be replicated throughout and beyond Sigi District.

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Sub-National and Regional Development Strategies

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~~90.~~95. Sigi District's current Medium-Term Development Planning Document (Rencana Pembangunan Jangka Menengah Daerah/RPJMD) covers the district's strategic issues and strategies for

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2021-2026. It stated the district's vision to increase its competitive advantages by strengthening its agribusiness sector. One of the missions to achieve this is by pursuing disaster mitigation-based sustainable development, achieved through a decrease in the disaster risk index and an increase in disaster resilience. The proposed project aims to support this mission by providing Sigi District with the data needed to strengthen disaster resilience, including baseline assessment of Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo villages, and stakeholder capacity to develop strategies and action plans to reduce disaster risks and increase the communities' resilience.

~~91.~~96. Besides Sigi District's RPJMD 2021-2026, the project is precisely aligned with Sigi Hijau Vision. As a policy breakthrough initiated by Sigi District, it showcases the Sigi's government commitment to pursue jurisdictional sustainability, achievable through several strategies that include climate change mitigation and adaptation. This proposed project supports exactly this: helping Sigi District develop its regional action plans for climate change adaptation enhanced with capacity and vulnerability assessment and future climate projection modeling to create more comprehensive, adaptive measures. It also offers practical intervention to increase renewable energy, reduce deforestation, and land degradation. The proposed project, which includes a pilot implementation in six selected villages namely Karunia and Dombu villages, aims to improve the local community's economic, social, and ecosystem resilience and supports sustainable, forest-friendly and climate-adaptive agriculture to ensure food and livelihood security.

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E. Meets Relevant National Technical Standards

~~92.~~97. The project aligns with national policies, district policies, and regulations as follows:

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~~93.~~98. Environmental Protection and Sustainable Management: Utilizing Article 47 of Law No. 32/2009 on Environmental Protection and Management, which ensures sustainable environmental practices~~.~~ through the implementation of environmental risk analysis. Additionally, Government Regulation No. 22/2021 on Environmental Protection and Management sets the general guidelines for environmental governance, crucial for any project involving ecosystem restoration or infrastructure development in Sigi~~.~~ District. The project complies with Article 7 as it does not pose significant environmental risks. The Minister of Environment and Forestry Regulation No. 4/2021 outlines the list of businesses that require ~~Environmental Permits (AMDAL, UKL-UPL, and SPPL),~~environmental permits ensuring that small hybrid infrastructure projects in Sigi District adhere to these requirements. To demonstrate commitment to managing potential risks during project implementation, environmental management and monitoring statement

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letters (Surat Pernyataan Kesanggupan Pengelolaan dan Pemantauan Lingkungan Hidup [SPPL]) will be prepared in adherence to Article 7.

~~94.~~99. Climate Change Adaptation: Presidential Regulation No. 98 of 2021 on the Implementation of Carbon Economic Value is central, focusing on climate change mitigation and adaptation strategies to meet Indonesia's Nationally Determined Contributions (NDC). The project incorporates climate adaptation actions through the WEF nexus approach aligning with Article 31. The Ministry of Environment and Forestry Regulation No. 33/2016 provides guidance for developing local climate change adaptation action plans, which would be instrumental in mainstreaming climate resilience into the development strategies of Sigi~~.~~ District. The project includes recommendations for climate adaptation policy by engaging stakeholders from government, academia, and local communities complying with Article 13. Additionally, the project facilitates targeted villages to prepare for Program Kampung Iklim (PROKLIM) ~~regulations, outlined in the~~registration adhering to Article 6 of Ministry of Environment and Forestry Regulation No. P.84/MenLHK-Setjen/Kum.1/11/2016~~ and the Directorate General of Climate Change Regulation No. P.1/PPI/SET/KUM.1/2/2017, support local climate adaptation initiatives~~.

~~95.~~100. Biodiversity and Ecosystem Management: Law No. ~~5/1990~~32/2024 on the Conservation of Living Natural Resources and Their Ecosystems supports the conservation efforts in various ecosystems, applicable to the diverse landscapes of Sigi~~. The inclusion of specific local regulations on forest and coastal management would also bolster efforts to maintain the ecological balance while promoting sustainable land use.~~ District. The project complies with Article 26 by implementing NbS infrastructure to ensure sustainable management in Sigi District.

~~96.~~101. Community Engagement and Social Inclusion: ~~Inclusivity is ensured through Minister of Home Affairs Regulation No. 52/2014, which supports the recognition~~ The project adheres to GEDSI principles as emphasized in Presidential Instruction No. 9/2000 on Gender Mainstreaming and ~~protection of customary law communities.~~Article 27 of Law No. 8/2016 on Persons with Disabilities by involving vulnerable groups, including farmers, women, youth, elderly, and people with disabilities in planning and implementing climate adaptation actions in regional level. Additionally, the project complies with Article 2 of Law No. 14/2018 on Public Information Transparency ~~and Presidential Instruction No. 9/2000 on Gender Mainstreaming in National Development highlight~~by ensuring project information is openly accessible for everyone supported by the ~~importance~~establishment of ~~engaging local stakeholders and ensuring that development benefits are equitably shared. Law No. 8 of 2016 on~~ the ~~Inclusion of People with Disabilities ensures that projects consider~~

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~~the needs of all community members~~center of excellence.

~~97.~~102. Local and Regional Policies: ~~Local regulations such as the~~ The Regent of Sigi's Decree No. ~~198~~189-682~~ of /~~2022 on ~~PPMHA~~ the Empowerment and Protection of Ngata Wisolo ~~and~~Indigenous Peoples is significant as the Ngata Wisolo area neighbors Sambo Village, one of the project's targeted areas. The project complies with this regulation as it respects the rights of indigenous peoples by involving them in climate adaptation planning and ensuring that project activities align with their cultural values and traditions. The project also complies with Articles 15 and 18 of the Regional Regulation of Sigi District No. 15~~ of~~ /2014 ~~provide specific guidelines and frameworks tailored to the unique needs and contexts of Sigi. These local policies ensure that the adaptation fund project aligns with regional~~on Empowerment and Protection of Indigenous Peoples by promoting inclusive development ~~strategies and community specific priorities.~~that integrates local wisdom and safeguards indigenous rights.

~~98.~~103. Ecological Fiscal Transfers and Financial Management: The project complies with Article 52 of the Government Regulation No. 12 ~~of /~~2019 on Regional Financial Management ~~would govern the financial aspects of the project,~~by ensuring that funds are allocated and used in a manner that promotes regional sustainability and ecological fiscal transfers. The ~~Project~~project will also follow Law No. 11~~ of /~~2020 on Job Creation, specifically Article 35, which requires businesses and activities to manage and monitor their environmental impact through SPPL if not requiring UKL-UPL.

104. Renewable Energy: The project involves village-based adaptive renewable energy management, which aligns with Articles 19 and 26 of Law No. 30/2007 on Energy. This alignment is because the project supports community participation in energy development for public benefit and strengthens local government roles in fostering and supervising energy enterprises at the regional level.

F. Duplication of Project/Programme With Other Funding Sources

~~99.~~105. Currently, no existing efforts overlap with Kolaborasi projects. However, some efforts would be very good to complement or synergize with Kolaborasi. Sigi District Government is working with 1) Church World Services (CWS) and Yayasan Inovasi Ketahanan Komunitas (INANTA), and 2) Mercy Corps and Yayasan Penabulu. The first project aims to build community resiliency with a focus on livelihood and agriculture in four villages. The second seeks to manage risks through economic empowerment at the village level in 10 villages. Both projects have similar approaches to Kolaborasi: to improve the community's capacity to manage risk through economic empowerment and focus on the village level. Our project will complement and strengthen those projects by bringing a more comprehensive approach by: 1) providing

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a stronger foundation for the local government to develop climate adaptation programs, and 2) building a solid showcase for influencing the top-down approach from national to local levels through two critical angles: (i) Water-Energy-Food Nexus approach and (ii) Multi-layered jurisdictional approach (Village – District – Provincial – National).

106. In 2023, Sigi has established the Green Sigi Multistakeholder Forum, which serves as a 'hub' to facilitate cross-sector collaboration in the district. It ensures the creation of a shared goal and a standardized protocol for managing project implementation within a region, collectively agreed upon by all parties. Additionally, this process is supported by a data governance model and regular coordination mechanisms facilitated by the Sigi Hijau institution to ensure data sharing and transparency, avoiding overlaps. Monitoring, evaluation, and learning processes are also conducted as a foundation for synchronization and integration, particularly in achieving Sigi district's target outcomes. Green Sigi Multistakeholder Forum (KMP Sigi Hijau) is led by a representative from the Regional Development Planning Agency (Bappeda) appointed through a decree issued by the Regent of Sigi. This process will be facilitated by the Secretariat of Green Sigi Multistakeholder Forum, which represents 22 partnes, including civil society organizations, development partners, youth groups, indigenous community organizations, and entities that focused on supporting farmers development. Overall, the involvement of women in KMP Sigi Hijau remains limited, with the initiative being predominantly male-dominated. Addressing this issue will be a priority for future programs, focusing on fostering inclusivity by enhancing and strengthening the role of women within KMP Sigi Hijau.

~~100.~~107. Other initiatives and projects with jurisdictional approaches to sustainable business models and supply-chain development are also available to be synchronized with Kolaborasi. They are GIZ SASCI+ project, particularly in the biosphere reserve context for Lore Lindu National Park, mainly focuses on enhancing sustainability and value-added components in the agricultural supply chain in Indonesia, The GIZ Forclime Project, in collaboration with the Ministry of Agriculture and the local agriculture technology research agency (Balai Pengkajian Teknologi Pertanian/BPTP), focuses on coffee and cocoa certification and commodities research and development, Sigi District government is pursuing agrarian reform and the issuance of customary forest and community forests surrounding Lore Lindu Biosphere Reserve to reduce deforestation and land degradation. The to-be-established multistakeholder forum will act as a coordinating and collaboration body at the district level to ensure all the initiatives and interventions are synergized and complementary to each other.

G. Learning and Knowledge Management

~~101.~~108. The project aims to produce several critical products targeted to

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capture process, results and lessons learned from the project – namely (i) a summary of the process translated into a decision-tree infographic, (ii) work-sheet(s) as guidance for process replication and (iii) case-study examples for each segment of the process. These products serve as practical learning tools for adults in government settings based on the consortium's previous experience.

~~102.~~109. Following previous successful learning methods, the consortium will disseminate such tools through (i) workshops with opportunities for district participants to participate online and (ii) targeted coaching clinics for interested districts to participate offline under their resources. Aside from working with the provincial government of Central Sulawesi to target other districts in the province for replication, the district of Sigi is also a founding member of LTKL since 2017. This membership provides a more significant opportunity for replication and learning across the eight other district members of LTKL and other active members of APKASI throughout Indonesia.

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~~103.~~110. We aim to work closely with key national ministries/government institutions during the implementation process, including the National Disaster Agency, National Planning Agency – LCDI Secretariat and Ministry of Environment and Forestry. Hence, the plan is to integrate results better, learn from the projects as policy recommendations from subnational experience, and achieve greater replication potential across the country.

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~~104.~~111. From a communication perspective, we plan to collaborate with the Communication and Information Agency and the Public Relations Agency of Sigi District to establish a micro-site connected to the district's official website documenting the process, results and lessons learned. The micro-site can be an information portal for Sigi District on climate adaptation issues and will be mirrored on social media platforms of the district government and consortium members. The micro-site that will be developed will be managed by the Center of Excellence (CoE). This platform will support the strengthening of the multi-stakeholder Sigi Hijau which is an institutional entity for the Collaboration of Climate Adaptation Work. Technically, this CoE will be operated by a professionally recruited support team, supported by various parties involved, including the management of this microsite.

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H. Consultative Process

~~105.~~112. As a preparation stage for this proposal, we have begun the consultation with key stakeholders and vulnerable groups from a multifaceted angle. In environmental studies, science technology, especially for climate and disaster studies or other ecological studies, we consulted academic institutions focusing on disaster resiliency and forest protection, including Tadulako University, UIN Datokarama Palu and UIN Palu at the Central Sulawesi level.

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~~106.~~113. The district government is also a part of the consortium and has received feedback from the Regional Development Planning Agency (BAPPEDA), Regional Disaster Agency (BPBD), Regional Environmental Agency (DLH) and Village Planning and Empowerment Agency (PemDes), based on the consultative process summarized in the table below. Further endorsement has also been given by the Head of Sigi District and formalized in the endorsement letter attached to this concept note.

~~107.~~114. Consultation processes were also carried out with key stakeholders at the civil society organizations, including Nemubuku, Forum Sudut Pandang, Ibu Foundation, Mercy Corps, Sikola Mombine Foundation and development partners, including GIZ SASCI+. There is also a strong opportunity to work with youth groups that have been developing initiatives on disaster resilience, including Earth Hour Palu, Macaca Rangers, Historia Sulteng, Sikola Pomore, Jaga Palu Official, Satu Buku Anak Palu, Ini Sigi, Like Sigi, Tadulako Desainer, Taman Baca Todea, Nobalu, Banua Risigi, and KPL Jambeana.

115. Following the concept note's acceptance, the proposal development stage expanded the consultative process thal held on 2023-2024 to include a broader range of stakeholders, such as farmers, MSMEs, women-led economic groups (Kelompok Usaha Ekonomi Perempuan [KUEP]), local CSOs, local government agencies (Organisasi Perangkat Daerah [OPD]), village officials, private sectors, and youth communities. This phase built upon insights from the pre-proposal stage, where potential risks were identified, mitigation plans and monitoring and evaluation plans were developed. The consultations in this stage focused on refining these plans, ensuring that all identified risks were thoroughly addressed and that community needs were fully integrated. These efforts aimed to design the project that not only responds to the challenges of climate change but also strengthens local resilience by aligning with the unique social, economic, and environmental contexts of the Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo villages. The inclusion of diverse perspectives ensured that the project would effectively enhance adaptive capacity while fostering inclusive and sustainable development outcomes.

116. We have conducted the consultative process using 2 methods, namely Focus Group Discussions (FGD) and in-depth interviews. Focus Group Discussion (FGD) is a qualitative data collection method involving a small group of people (typically 6-12 participants) who engage in a guided discussion on a specific topic. The discussion is facilitated by a moderator whose role is to ensure the conversation remains focused on the topic and to gather diverse perspectives from the participants. This method is chosen to generate broader and deeper insights through the interactions among participants. An In-

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Depth Interview is an individual interview method designed to explore detailed information about a participant's experiences, views, or opinions on a specific topic. The aim is to conduct a deep exploration of the individual's perspective without being influenced by others in a group setting.

Table 11. Consultative Process During Proposal Development

Date	~~Consulted~~ Stakeholders	Consultation Techniques	Consultation Findings	Incorporation of Findings into Project Design
Vulnerable Groups Identified: Farmers (Annex 3) *Level of vulnerability: High*				
~~11 April 2022~~21 February 2024	~~1.Mohammad Irwan S.Sos.MSi. Head of Sigi District~~ ~~2.Dr.Samuel Yansen Pongi,M.Si Deputy Head of Sigi District~~ ~~3. Muh.Basir Secretary of Sigi District~~ 1. ~~4. All Head of Sigi DIstrict Working Unit (OPD)~~Representative of Cocoa Farmers Groups in Sambo and Simoro's Village 2. Representative of secondary crop, rice, and corn farmer groups in Wisolo, Sambo, and North Pakuli's Village 3. Representative of coffee farmers groups in Bangga's Village 4. Regional Government Organization (RGO): a.The Office of Food Crops, Horticulture, and Plantation, b. The Office of Food Security and Fisheries 5. NGOs: GIZ, OFI and JB Cocoa	FGD Location: The Office of Food Crops, Horticulture, and ~~Working Session~~ ~~(32 Male, 18 Female)~~Plantation of Sigi District	~~Successfully obtained Head of District's further commitment to pursue Sigi Hijau into achievable programs and initiatives.~~ ~~Discussed green development work plan which can be integrated in joint collaboration and program synergy across OPD and development partners in Sigi.~~ ~~Agreed on manifesting the work plan and collaboration through the establishment of Multistakeholder Forum.~~The discussion aimed to explore strategies for allocating the palm oil revenue-sharing funds received by Sigi District to strengthen the data system for non-palm oil agricultural activities, including coffee and cocoa farming, within Sigi District.	~~Agreement and Commitments achieved became the Enabling Conditions for the Project.~~Integrating the use of palm oil revenue-sharing funds to enhance the data system for non-palm oil agricultural activities led by women farmers in Sigi District. This effort seeks to support inclusive economic development by fostering sustainable agricultural practices beyond the palm oil sector.
~~23-28~~2-6 May ~~2022~~2024	~~Drs. Sutopo Sapto Condro, MT~~ 1. ~~Head of Sigi District's Development Planning and Research Agency~~Representative of Cocoa Farmers Groups in Sambo and Simoro's Village 2. Representative of secondary crop, rice, and corn farmer groups in Wisolo, Sambo, and North Pakuli's Village 3. Representative of coffee farmers groups in Bangga's Village	~~Conference participation, FGD and Media Gathering for the 2022 Global Platform for Disaster Risk Reduction~~In-Depth Interview Location: - Pandere's village - Pakuli Utara's village - Simoro's village - Wisolo's village	~~Interest from Development Planning and Research Agency of Sigi to better link disaster risk reduction with enhance district's resilience on climate adaptation~~Poor smallholders in Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo Village often face low connectivity, which hinders access to external markets and essential services. Compounding this challenge is low bankability, as formal financial institutions are scarce in these regions. Additionally, high transportation costs arise from the lack of decent roads connecting villages, limiting mobility and economic prospects.	~~The baseline for Project Theory of Change to link disaster risk reduction with enhance district's resilience on climate adaptation through an integrated plan~~Addressing these challenges involves prioritizing offline engagement methods, such as village gatherings and community meetings, to ensure everyone is included. Manual financial transactions (e.g., cash-based systems) can temporarily compensate for the absence of banks, while communal engagement helps build solidarity and pool resources for shared transport and market access.

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28 Juni 202211 July 2024	Head and Representing Officer of Tourism Office, Office of Communication and Information Technology, Environment Office, Office of Cooperatives & MSME, Office of Integrated Service for MSME, Office of Industry & Trade, Office of Investment & One-Stop Integrated Licensing, Regional Research and Development Planning Agency1. Representative of Cocoa Farmers Groups in Sambo and Simoro's Village 2. Representative of secondary crop, rice, and corn farmer groups in Wisolo, Sambo, and North Pakuli's Village 3. Representative of coffee farmers groups in Bangga's Village 4. RGOs: a.The Office of Food Crops, Horticulture, and Plantation Food Crops Office, Disaster Management Agency., b. The Office of Food Security and Fisheries, c. Bapperida Civil Service Police Unit, Community and5. NGO: Mercy Corps Indonesia 6. MSME: Coconut Oil MSME in Bangga Village Empowerment Service,	Workshops and Group FGD (65 participants (17 female, 48 Male)Location: Village Meeting Hall of Bangga	Acceleration of green development program in Sigi District. Synchronization of Sigi district's working units/ office programs in RKPD Perubahan 2022 and RKPD 2023 document (District Annual Work Plan) including the projected budget allocation in each unit/ office.The discussion centered on data collection as part of the preparation of the Sigi Jurisdictional Investment Outlook. This outlook serves as a natural resource-based investment portfolio that highlights key commodities and other economic potentials from upstream to downstream stages in Sigi District. In the future, this portfolio will guide the efforts of farmers and MSMEs in building sustainable businesses,	Integration of the project plan and implementation into the Amendment District Annual Work Plan 2022 and District Annual Work Plan 2023The natural resource-based investment portfolio will function as one of the management instruments to support sustainable local economic development and enhance adaptive capacity at the community level. The findings will guide the formulation of community-participatory adaptation action plans, involving farmers and MSMEs and will contribute to the development of sustainable livelihood options across the agriculture, renewable energy, and local infrastructure sectors,
29 Juni 202230 August 2024	1.Mohammad Irwan S.Sos.MSi. Head of Sigi District 2.Dr.Samuel Yansen Pongi,M.Si Deputy Head of Sigi District 3. Muh.Basir Secretary of Sigi District 4. All Head of Sigi DIstrict Working Unit (OPD) 5. Central Sulawesi Forestry Department 6. Central Sulawesi Environment Department 7. FIscal Policy Agency, Ministry of Finance RI 1. 8. Head of Lore Lindu National Park.Representative of Cocoa Farmers Groups in Sambo and Simoro's Village 2. Representative of secondary crop, rice, and corn farmer groups in Wisolo, Sambo, and North Pakuli's Village 3. Representative of coffee farmers groups in Bangga's Village 4. RGO: The Office of Food Crops,	Workshop, FGD Participants (36 Male, 18 Female)Location:: GIZ Office	Identifying climate adaptation and disasters risk reduction should be aligned with methods to ensure better livelihood options, particularly in vulnerable area of the districtThe mapping of priority issues and working groups was intended to encourage the development of an integrated natural resource-based economic model that positively impacts biodiversity conservation in the district. This initiative is crucial to ensure the integration of other ongoing field programs, especially those involving farmers, and MSMEs,	Identifying that the main components of the project should include (i) macro planning document co-creation, (ii) implementation planning document co-creation and (iii) implementation modelThe results of this mapping will be utilized to formulate a participatory action plan that links farmers and MSMEs to sustainable economic opportunities. At the same time, it aims to mitigate the risk of environmental degradation by promoting eco-friendly agricultural practices and safeguarding local ecosystems,

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	Horticulture, and Plantation 5. NGO: GIZ 6. MSMEs			
Vulnerable Groups Identified: Women Level of Vulnerability: Medium				
8-9 November 2023	1. RGOs: Bapperida, DLH, PMD, BPBD, 2. Women Farmer Groups in Gumbasa Subdistrict - North Pakuli's Village: Madamba and Aliander - Simoro's Village: Nosara and Lestari Indah - Pandere's Village: Kelor and Sejari Women Farmer Groups in South Dolo Subdistrict - Bangga Village: Sangurara Bangkit and Mekar Sehati - Wisolo Village: Mawar and Anggrek - Sambo Village: Bungi Bangkit 3. CSO: Mercy Corps	Workshops and Group FGD Location: Sigi Regent's Office	The villages fulfill the indicators such as demography, accessibility, commodity, and level of climate change vulnerability. There are inputs on the proposed program that has been planned, such as climate change adaptation policies that support adaptation measures need to be detailed in the technical documents and carried by a multistakeholder forum; for the showcasing, it suggested to highlight women empowerment through capacity building and eco-labeling as the product from Lore Lindu Biosphere Reserve.	Identifying village selection through agreed criteria and gathering insight for proposed program
~~1 Juli 2022~~7 February 2024	~~Drs. Sutopo Sapto Condro, MT Head of Sigi District's Development Planning and Research Agency~~-Women-led economic groups	~~Semi-structured interview~~FGD Location: The Office of Food Crops, Horticulture, and Plantation of Sigi District	~~Sigi District is planning to develop Regional Action Plans for Climate Change Adaptation (RAD-API)~~ ~~RAD-API is aligned with the Sigi Hijau regulation and budgeting~~The discussion aimed to explore strategies for allocating the palm oil revenue-sharing funds received by Sigi District to strengthen the data system for non-palm oil agricultural activities, including coffee and cocoa farming, within Sigi District. *level of vulnerability: Low*	~~Development of RAD-API and integration of it into regional development and planning~~Integrating the use of palm oil revenue-sharing funds to enhance the data system for non-palm oil agricultural activities led by women farmers in Sigi District. This effort seeks to support inclusive economic development by fostering sustainable agricultural practices beyond the palm oil sector.

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27 June 2022; 8 July 20222-6 May 2024	Afit Lamakarate, ST.,M.Si Head of Sigi District's Environmental AgencyLead of The Women Farmer Group of Kelor in Pandere Village (Farida) Lead of The Women Farmer Group of Sejati in Pandere Village (Ratna) Lead of The Women Farmer Group of Madamba in North Pakuli Village (Minarwati) Lead of The Women Farmer Group of Aliander in North Pakuli Village (Mislia) Lead of The Women Farmer Group of Nosarara in Simoro Simoro Village (Masni) Lead of The Women Farmer Group of Lestari Indah in Simoro Village(Salmiati) Lead of The Women Farmer Group of Anggrek in Wisolo Village (Muliani) Lead of The Women Farmer Group of Anggrek in Wisolo Village (Evayanti) The Family Welfare Empowerment Organization Lead of Pandere Village The Family Welfare Empowerment Organization Lead of North Pakuli Village The Family Welfare Empowerment Organization Lead of Simoro Village The Family Welfare Empowerment Organization Lead of Wisolo Village	Semi-structured interviewIn-Depth Interview Location: - Pandere's village - Pakuli Utara's village - Simoro's village - Wisolo's village	Sigi District is planning to develop Regional Action Plans for Climate Change Adaptation (RAD-API), but has been unable to do so due to limited budget and capacity RAD-API is aligned with the Sigi Hijau regulation and budgeting Many villages in Pipikoro and Kulawi Sub-districts are vulnerable towards climate change as they are prone to floods, have high population density, have limited access to electricity and water supply and rely on the agriculture sector Lonebasa Village in Pipikoro sub-district is among these vulnerable villagesWomen in villages whose main productive activities lie in the plantation and agricultural sectors generally have limited access to decision-making process as well as to financing and financial services. As a result, efforts to improve women's welfare often face multiple layers of challenges due to a male-dominated culture.	Development of RAD-API Selection of Lonebasa Village as one of the areas for pilot implementationAs an alternative, activities that require the involvement of women's groups are more effective if they are adjusted to women's activities in the village, such as religious events, PKK (Family Welfare Program) activities, or community programs commonly organized by women's groups.
6 Juli 202215 July 2024	Johansyah Halman, ST Secretary of Sigi District's Disaster Management Agency (Implementing Department)- Women-led economic groups - MSMEs	Semi-structured interviewFGD Location: Bapperinda Office	Sigi District is prone to natural and man-made climate disasters Bolapapu Village in Kulawi Sub-district is prone to flash floodsThe discussion centered on data collection as part of the preparation of the Sigi Jurisdictional Investment Outlook. This outlook serves as a natural resource-based investment portfolio that highlights key commodities and other economic potentials from upstream to downstream stages in Sigi District. In the future, this portfolio will guide the efforts of MSMEs and Women Economic Groups (KUEP) in building sustainable businesses.	Selection of Bolapapu Village as one of the areas for pilot implementationThe natural resource-based investment portfolio will function as one of the management instruments to support sustainable local economic development and enhance adaptive capacity at the community level. The findings will guide the formulation of community-participatory adaptation action plans, involving MSMEs and Women Economic Groups (KUEP), and will contribute to the development of sustainable livelihood options across the agriculture, renewable energy, and local infrastructure sectors.

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6 August 2024	-MSMEs -Women-led economic groups (Kelompok Usaha Ekonomi Perempuan [KUEP])	FGD Location: Kantor Dinas Tanaman Pangan Hortikultura dan Perkebunan	The mapping of priority issues and working groups was intended to encourage the development of an integrated natural resource-based economic model that positively impacts biodiversity conservation in the district. This initiative is crucial to ensure the integration of other ongoing field programs, especially those involving MSMEs and Women Economic Groups (KUEP).	The results of this mapping will be utilized to formulate a participatory action plan that links MSMEs and Women Economic Groups (KUEP) to sustainable economic opportunities. At the same time, it aims to mitigate the risk of environmental degradation by promoting eco-friendly agricultural practices and safeguarding local ecosystems.
Vulnerable Groups Identified: Youth Level of Vulnerability: Medium				
~~8-9~~ November 8-9 2023	~~District agencies~~ ~~Local~~1. District agencies (Regional Secretary, Bapperida, DLH, TPHP Office, PemDes Office, Cooperatives & MSMEs Office, BPBD 2. Youth communities, Gampiri Interaksi Lestari ~~NGOs~~ 3. CSOs (GIZ SASCI+, Yayasan Kompas Peduli Hutan, Walhi SulTeng, AMAN, Evergreen, Mercy Corps, Karsa Institute 4. Academician (Tadulako University) ~~Provincial Government~~5. Provincial Government (Bappeda of Central Sulawesi, Energy and Mineral Resources Agency of Central Sulawesi, BPDAS of Central Sulawesi, Lore National Park, Lindu National Park, KPH Kulawi)	Workshops and Group FGD Location: Sigi Regent's Office	~~12 villages in 4 sub-districts fulfill the indicators such as demography, accessibility, commodity, and level of climate change vulnerability~~ There are inputs on the proposed program that has been planned, such as climate change adaptation policies that support adaptation measures need to be detailed in the technical documents and carried by a multistakeholder forum; for the showcasing, it suggested to highlight ~~women empowerment and~~ youth engagement through capacity building and eco-labeling as the product from Lore Lindu Biosphere Reserve	Identifying village selection through agreed criteria and gathering insight for proposed program
2-6 May 2024	- Heads of youth organizations in 6 intervention villages - Youth representatives in the 6 intervention candidate villages	In-Depth Interview Location: - Pandere's village - Pakuli Utara's village - Simoro's village - Wisolo's village	Young people experience a clash between traditional local values and more urban influences, sparking identity struggles within their communities. Although villages may exhibit strong internal unity, this cohesion often diminishes at the district level. Additionally, lucrative mining opportunities pose a risk to local natural resources and threaten the long-term sustainability of their environment.	Efforts to strengthen youth identity center on celebrating local culture and harnessing social and natural assets. Offering capacity-building programs—such as workshops and skill trainings—further empowers young people to pursue opportunities that do not undermine their cultural or environmental heritage.

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11 September 2024	Sigi District Multi Stakeholder Forum: -Local Karsa Institute, Imunitas, Mercy Corps, ADRA, Islamic Relief -Bapperida, BPBD, DLH -Gampiri Lestari, Rubalang	FGD Location: Tomado Village, Lindu District	The stakeholder mapping was intended to strengthen sustainable development efforts by ensuring the involvement and contributions of relevant stakeholders in various ongoing and future initiatives.	The findings from the stakeholder mapping have been incorporated into the project design to ensure that sustainable development in Sigi District is carried out through a collaborative approach engaging multiple stakeholders.
23 December 2024	Sigi District Multi Stakeholder Forum: -Local CSOs: Karsa Institute, Imunitas, Adra, Mercy Corps, -Local government: Bapperida, DLH, DiskopUKM, Disperindag, Distanhortbun -Village officials -OFI, JB Cocoa -Gampiri Interaksi	FGD Location: Karsa Institute Office	The preparation process for the implementation of the Sigi Green Regulation (Perda Sigi Hijau), along with the formulation of a roadmap and strategic plan for KMP Sigi Hijau, aimed to ensure the realization of a multi-stakeholder action plan to support sustainable development in Sigi District. The meeting acts as a regular platform for stakeholder dialogue to discuss project progress, problem-solving measures, and the implementation of impactful joint actions.	The outcomes of this discussion have been incorporated into the project design to enhance the implementation of the Sigi Green Regulation (Perda Sigi Hijau) by formulating a roadmap and strategic plan that outlines a multi-stakeholder action plan.
Vulnerable Groups Identified: Elderly Level of Vulnerability: High				
2-6 May 2024	1. Community leaders in Pandere, Pakuli, Simoro, Wisoloi Village 2. Village heads in Pandere, Pakuli, Simoro, Wisolo 3. Customary institutions ini Pandere, Pakuli, Simoro, Wisolo	In-Depth Interview Location: - Pandere's village - Pakuli Utara's village - Simoro's village - Wisolo's village	The elderly face similar connectivity challenges and limited financial options as their younger counterparts. With few banks or alternative financial services in these areas, they struggle to secure needed funds. Their employment prospects are also largely restricted to agriculture, offering limited income potential and social engagement.	Fostering intergenerational collaboration is crucial, as younger community members can assist with mobility, financial literacy, and advocacy efforts. Involving the elderly in community activities not only ensures their needs are met but also preserves local knowledge and reinforces a sense of belonging.



Figure 6. Sigi District Multi Stakeholder Forum 2024

117. To uphold the principle of inclusivity, the proposal development

process included a targeted consultative approach involving vulnerable groups such as farmers, women, youth, and the elderly from villages across Sigi district. The farmers involved are mostly cocoa, vanilla, and coffee farmers, which are the main commodities in Sigi. The Elderly group includes village heads and community elders. The Women group refers to female micro, small, and medium enterprises (MSMEs) from the villages. The youth group includes young community members, art and culture communities, and young farmers. The discussions process was conducted with the target vulnerable groups throughout 2024. This process aimed to assess their vulnerability levels and gather insights from their experiences to design climate adaptation action plans that are suitable and responsive to their needs. Additionally, it sought to identify the specific resources and support required by these groups to ensure the effective implementation of climate adaptation actions, optimizing their capacity to adapt and building community resilience comprehensively.

Table 12. Consultative Process with Vulnerable Groups

Vulnerable Groups Identified	Key Issue	Engagement	Level of Vulnerability
Farmers	Poor smallholders in remote areas often face low connectivity, which hinders access to external markets and essential services. Compounding this challenge is low bankability, as formal financial institutions are scarce in these regions. Additionally, high transportation costs arise from the lack of decent roads connecting villages, limiting mobility and economic prospects.	Addressing these challenges involves prioritizing offline engagement methods, such as village gatherings and community meetings, to ensure everyone is included. Manual financial transactions (e.g., cash-based systems) can temporarily compensate for the absence of banks, while communal engagement helps build solidarity and pool resources for shared transport and market access.	High
Women	Women in villages whose main productive activities lie in the plantation and agricultural sectors generally have limited access to decision-making process as well as to financing and financial services. As a result, efforts to improve women's welfare often face multiple layers of	As an alternative, activities that require the involvement of women's groups are more effective if they are adjusted to women's activities in the village, such as religious events, PKK (Family Welfare Program) activities, or community programs commonly organized by women's	Medium

	challenges due to a male-dominated culture.	groups.	
Youth	Young people experience a clash between traditional local values and more urban influences, sparking identity struggles within their communities. Although villages may exhibit strong internal unity, this cohesion often diminishes at the district level. Additionally, lucrative mining opportunities pose a risk to local natural resources and threaten the long-term sustainability of their environment.	Efforts to strengthen youth identity center on celebrating local culture and harnessing social and natural assets. Offering capacity-building programs—such as workshops and skill trainings—further empowers young people to pursue opportunities that do not undermine their cultural or environmental heritage.	Medium
Elderly	The elderly face similar connectivity challenges and limited financial options as their younger counterparts. With few banks or alternative financial services in these areas, they struggle to secure needed funds. Their employment prospects are also largely restricted to agriculture, offering limited income potential and social engagement.	Fostering intergenerational collaboration is crucial, as younger community members can assist with mobility, financial literacy, and advocacy efforts. Involving the elderly in community activities not only ensures their needs are met but also preserves local knowledge and reinforces a sense of belonging.	High

118. To ensure the effective implementation of the project, a consultative process was specifically conducted with local government agencies, CSOs, and academic institutions. This approach was crucial because these stakeholders play integral roles in development planning and implementation. Involving them ensures that the project aligns with government priorities, integrates local expertise, and leverages institutional knowledge. In November 2023, this consultation included key stakeholders such as Energy and Mineral Resources Agency of Central Sulawesi Province, Environmental Agency of Sigi District, Agricultural Agency of Sigi District, Social Affairs Agency of Sigi District, Development Planning Agency of Sigi District, Gumbasa, Palolo, and Marawola Barat sub-district governments, Palolo Sub-district Government, Advocacy Focal Point Mercy Corps Indonesia, Karsa Institute, and Kemitraan.

Table 13. Consultative Process with Local Government Agencies, CSOs, and Academic Institutions

Key Person	Input and Recommendation
Afit Lamakarate, ST.,M.Si. Head of Environmental Agency of Sigi District	The target beneficiaries for the climate change adaptation project are based on three main vulnerabilities: economic, social, and ecosystem (landscape). However, the priority sectors include food, energy, water, ecosystems, health, and disaster management, which will guide the selection of locations. When allocating financing, it is important to ensure that operational costs do not exceed the assistance provided to communities. The aim is to create a sustainable model for activities that can be continued and applied for community capacity development. There may be compromises in selecting beneficiaries, considering not only the most vulnerable but also areas that are underserved or less accessible, as they may also be eligible for support.
Irwan Agustian Advocacy Focal Point Mercy Corps Indonesia	There is a gap in understanding between the government and the public regarding climate change. The government has a deeper understanding, while the public tends to see it only as changes in weather patterns and planting cycles. To address this, there needs to be an effort to educate and raise awareness among the public about the broader impacts of climate change. Additionally, local governments (at the district, sub-district, and village levels) need to develop clear policies and action plans related to climate change adaptation and mitigation. Collaboration between the government and the public is essential to ensure that these policies are relevant, effective, and widely accepted. Sigi District will have a vulnerability map to guide decision-making and interventions in the Adaptation Fund proposal. After clarifying the threats, impacts, and adaptation measures related to climate change, the focus of the proposal will be on agriculture and plantation sectors, aiming to assess the impacts felt by farmers and related ecosystems. Climate change adaptation in this sector will use a nexus approach involving energy, water, and food.
Rahmad Iqbal Nurkhalish, B. Aly., SP., MP Head of Agricultural Agency of Sigi District	The changing climate situation significantly impacts the agriculture sector, especially regarding the capacity and empowerment of farmers. Farmers' preparedness for climate change is often lacking due to limited understanding. For instance, melon farmers have seen a decrease in yield due to extreme heat but don't know how to address this issue. Extreme climate conditions accelerate plant transpiration, increasing water demand, and worsening pest attacks. In Sigi District, rice plants are also affected by tungro pests. Climate change adaptation must be synergized from top to bottom.

	It is important to have climate vulnerability indicators in each area to guide discussions, as most regions in Sigi District are highly vulnerable. Three main aspects to address regarding the impacts of climate change are adaptation, mitigation, and anticipation. Research studies are needed for mitigation and anticipation strategies, but information from BMKG has not been sufficiently engaging for the public due to the lack of explanation. The hope is that the Adaptation Fund proposal will focus specifically on the agriculture sector to address climate change impacts.
Fadli, S.Hut Energy and Mineral Resources Agency of Central Sulawesi Province	According to the Energy and Mineral Resources Agency (ESDM), Sigi District has abundant hydropower potential, especially from the Lariang River region. One of the largest potentials is Lake Lindu, which has the Rawa River with a steady water flow throughout the year due to being within a conservation area. The hope is that Sigi District can become a source of energy or an energy reserve in the future, particularly due to the stable water flow of the Rawa River, which could support energy security during severe droughts.
Abimanyu S Aji Kemitraan	Understanding of climate change can vary, but the impacts and threats are generally agreed upon. For example, farmers experience the impacts of climate change, such as droughts reducing water availability and causing land degradation, while floods are still considered threats until they cause damage, which becomes the impact. Adaptation to climate change involves two main aspects: humans and ecosystems. Tackling the impacts of climate change can be done if both humans and ecosystems can adapt. For example, humans adapt by using generators during power outages, while ecosystems can adapt through rehabilitation and adaptive agriculture. Both aspects are crucial in the proposal formulation. Additionally, adaptation is closely tied to infrastructure, which plays a vital role in supporting the adaptation process while ensuring the welfare of farming communities. Ecosystem-based adaptation is also being promoted by the Ministry of Environment and Forestry (KLHK). Meanwhile, mitigation focuses on reducing emissions released into the atmosphere, which is distinct from adaptation. Adaptation involves humans, ecosystems, and infrastructure, while mitigation focuses on emission reduction.

Herry Gumbasa Sub-district Government	Gumbasa Sub-district has 7 villages directly bordering the Lore Lindu National Park (TNLL), and some villages have implemented climate change adaptation programs with the government and partners. Most people understand that climate change results from deforestation, especially due to forest encroachment that was prevalent from the 1980s to early 2000s. In 2004, Gumbasa was impacted by a flash flood that gained national attention. Forest rehabilitation programs in TNLL have not been fully effective because the provided seedlings are either timber trees or less popular crops. From 2000-2018, average incomes in Gumbasa declined, especially for those relying on cocoa, all of which are within the TNLL area. Cocoa farmers cannot participate in plantation intensification programs because their lands are part of the national park. Furthermore, water sources in Gumbasa are very limited. Therefore, there is a need for programs that create alternative livelihoods in livestock, fisheries, and agriculture as part of climate change adaptation.
Herman Palolo Sub-district Government	Overall, development in Sigi District is expected to integrate climate change into its development system. The climate change adaptation proposal is an important topic addressing the impacts of climate change. The understanding at the village level regarding climate change, once based on community predictions, has now become unpredictable. The impacts of climate change greatly affect the agriculture sector, including the reduced effectiveness of energy use. In Palolo Sub-district, farmers are also experiencing climate change impacts and are encouraged to switch land use to sustain their welfare. Climate change cannot be prevented but can be anticipated by preserving ecosystems. In general, climate change must be viewed from a long-term perspective, considering other potential solutions such as tourism in Palolo. This program is expected to involve the entire Sigi District, including Palolo, in climate change adaptation efforts.
Eben Marawola Barat Sub-district Government	The target beneficiaries of the climate change adaptation project are focused on three main vulnerabilities: economic, social life, and ecosystems (landscape). However, priority areas include six sectors: food, energy, water, ecosystems, health, and disaster management, which will guide the selection of project locations based on field conditions. When determining financing targets, it is essential to ensure that operational costs do not exceed the assistance provided to the community. The goal is to create a sustainable model for activities that can be continued and applied for community capacity development. There may be compromises in selecting beneficiaries, where the focus is

	not solely on the most vulnerable but also considers areas that are currently underserved or less accessible, as they may also be eligible for selection.
Yusak Pamei Karsa Institute	Specific interventions in agriculture are still insufficient if they only rely on public consultations. The program should be complemented with research to enrich the database and obtain accurate data to address the core issues and find appropriate solutions and interventions that maximize impact for both human welfare and the environment. One challenge is the differing understanding of climate change adaptation among the community. My proposal is that this program can make a significant contribution, especially for the younger generation, through co-curricular programs in schools, such as creating a supporting book on climate change knowledge, which will have a long-term educational impact.
Suherman Secretary of Social Affairs Agency of Sigi District	Our hope is that the program related to the impacts of climate change will contribute to improving the welfare and skills of nature-based communities. The main focus is to make the community more resilient to social vulnerabilities due to prolonged climate change. DTKS data can be used to identify vulnerabilities in each region and serve as an indicator for selecting appropriate locations, incorporating disaster vulnerability studies. This data can be integrated with information from relevant agencies like the Social Service, BAPPEDA, BPBD, Agriculture Office, and others to prioritize locations needing intervention.
Muhammad Jauhari,S.T., M.P.W. Development Planning Agency of Sigi District	It is important to understand the dominant issues or needs to formulate strategies that can become indicators for selecting the focus areas of the Adaptation Fund proposal. The consortium has focused on food, water, and energy sectors, which are the concepts accepted by the Adaptation Fund. National adaptation goals include addressing social, economic, livelihood, and ecosystem vulnerabilities.

I. Justification for Funding Requested

~~108.~~119. The Implementing the Adaptation Fund (AF) project in Sigi District is crucial due to the significant climate vulnerabilities and socio-economic challenges faced by the local communities. Without the project, plantation areas in highly vulnerable villages remain susceptible to flood damage, reducing productivity and overall resilience. The absence of technical capacity in climate adaptation, water management, food, energy, and policy hinders communities from effectively coping with climate impacts. Additionally, the lack of a climate information system limits farmers' ability to make informed decisions, while local communities struggle to identify and access markets for their commodities. Adaptation strategies are fragmented

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and lack integration of community-based knowledge, leaving villages without formal engagement in climate resilience programs and minimal participation of women in adaptation processes. This situation underscores the urgent need for the AF project to enhance local capacities, develop climate information systems, and promote inclusive, community-based adaptation strategies to build resilience against climate impacts.

Table 14. Justification for Funding Requested

Without Project AF	With Project AF
Plantation areas in 6 villages with high vulnerability remain susceptible to flood damage, reducing productivity.	50 ha plantation area in 6 villages with high vulnerability have flood resilience, maintaining plantation productivity.
Communities lack technical capacity in climate adaptation, water management, food, energy, and policy.	Communities have enhanced capacity in climate adaptation technical aspects, water management, food, energy, and policy through the Water-Energy-Food Nexus.
No climate information system exists, limiting farmers' ability to make informed decisions.	Sigi District will have a climate information system providing climate and weather data beneficial for agricultural farmers.
Local communities have limited ability to identify and access markets for their commodities.	Local communities can map key commodities, markets, demands, and potential products for national/international markets such as cocoa, coconut, and other agricultural products.
Adaptation strategies are fragmented and lack community-based knowledge integration.	Water-Energy-Food nexus-based adaptation identified as community-based knowledge to tackle climate impact.
Villages lack formal engagement in climate resilience programs.	6 villages will be encouraged and participate in PROKLIM.
Women's participation in climate adaptation processes is minimal.	At least 30% women participants are involved in the planning, implementation, monitoring, and learning process of the Water-Energy-Food Nexus.

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J. Sustainability of The Project/Programme Outcomes

~~109.~~120. The project exit strategy to ensure the sustainability of its outcomes focuses on building institutional capacity (OPDs) and creating adaptive management instruments for climate change adaptation in Sigi District. By training local stakeholders on the Water-Food-Energy (WFE) nexus and establishing a district-level working group, the project embeds climate adaptation knowledge and practices within existing local governance structures. This working group,

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supported by the district multistakeholder forum, will continue to spearhead adaptation efforts, ensuring that the enhanced capacity and awareness achieved through the project are maintained and further developed beyond the project's lifespan.

~~110.~~121. To support the effective implementation of climate adaptation efforts, the project will develop and operationalize management instruments tailored to the needs of various stakeholders, including government agencies, farmers, universities, and schools. The creation of a one-stop web portal will provide a centralized platform for accessing climate data, management tools, and best practices, fostering ongoing learning and adaptation. The portal's development will be informed by comprehensive assessments and stakeholder consultations, ensuring that it meets local needs and can be sustainably managed by local authorities and institutions.

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~~111.~~122. At the village level, the project's sustainability strategy involves developing participatory WFE nexus-based adaptation action plans that are integrated into local governance and funding mechanisms. By involving community members, village leaders, and local governments in the planning and implementation process, the project ensures that adaptation measures are locally relevant and community-owned. This approach not only enhances the resilience of village-level systems but also builds local capacity to continue these efforts independently, leveraging village funds and external resources such as the Adaptation Fund.

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~~112.~~123. Economic, social, and livelihood resilience are critical components of the project's sustainability strategy. The project will conduct supply chain mapping and market demand analysis for leading commodities, developing plans to enhance their value through derivative products. By providing training and tools for producing value-added products, the project equips local farmers with the skills and resources needed to diversify and sustain their livelihoods. The establishment of village enterprises (BUMDes) and linkages with local government agencies will further support the continuity and scalability of these livelihood activities, ensuring long-term economic benefits for the community.

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~~113.~~124. The creation of a center of excellence for climate change adaptation will serve as a hub for knowledge dissemination, capacity building, and best practice sharing. This center will develop and distribute learning and communication tools based on the project's monitoring, evaluation, and learning (MEL) outcomes, this platform will be maintained by Coaction Indonesia to ensure sustainability. By leveraging digital platforms for broader outreach and maintaining ongoing engagement with local and regional stakeholders, the center will ensure that the lessons learned and successful practices from the project are replicated and scaled up, contributing to sustained climate

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resilience in Sigi District and beyond.

K. Environmental and Social Impacts and Risks

~~114. The implementation of the project will involve several environmental and social impacts and risks that require careful assessment and management. While the project aligns with Indonesia's laws and policies, such as the Minister of Environment and Forestry Regulation and the Law on Environmental Protection and Management, it must also ensure equitable access and benefits for all community members, especially marginalized and vulnerable groups. Gender equality and women's empowerment are crucial, necessitating thorough assessment and compliance during implementation. Indigenous peoples' issues, public health impacts, and protection of natural habitats and biodiversity also require careful consideration and compliance. By addressing these principles, the project aims to enhance local resilience and sustainable development through a Water-Energy-Food nexus approach while minimizing adverse effects on the environment and society.~~

125. The project is categorized as "Category B" under the Adaptation Fund's Risk Categorization. This classification is based on direct discussions, field surveys, and assessments in Sigi District involving key stakeholders and vulnerable groups. Based on these activities, the project's potential risks are localized, small-scale, reversible, and manageable. The project's components such as adaptation policy formulation, WEF nexus implementation, and establishing center of excellence may cause environmental and social risks. Moreover, the six targeted villages (Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo) have distinct socio-physical characteristics, such as limited inclusive infrastructure and vulnerable populations potentially increasing risks. However, comprehensive mitigation strategies have been developed, ensuring that any potential risks during implementation are minimized. These strategies aim to uphold environmental and social safeguards, guaranteeing implement sustainable and inclusive adaptation actions.

126. To comply with the Adaptation Fund Environmental and Social Policy, a self-screening process was conducted to evaluate project activities against established environmental and social safeguard principles. Self-screening of project activities against the Adaptation Fund Environmental and Social Policy identifies 1 principle (see Annex 2, table 1) as being applicable to this standard and requiring further attention. Since the self-screening process only identified one principle, a further assessment was conducted to identify additional potential environmental and social risks associated with the project. Table 15 presents the Environmental and Social Principles risks based on this further assessment.

127. Since the project may pose environmental and social risks, an Environmental and Social Management Plan (ESMP) was developed and included in Annex 2. This annex also includes mitigating measures for the assessed significant potential environmental and social impacts. The measures will be implemented and utilized by the program to mitigate the potential risks and also ensure the compliance of program implementation to Adaptation Fund Environmental and Social Policy. From the beginning of the program period, the stakeholders will be informed on the potential risks associated with the program and the corresponding mitigation measures in place. This mitigation plan will be communicated to them, not only during the program preparation phase, but also throughout the program implementation to ensure all parties involved are aware of the risks and the appropriate mitigation measures.

Table 15. Checklist of Environmental and Social Principles

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law	V	
Access and Equity	~~V~~	V
Marginalized and Vulnerable Groups	~~V~~	V
Human Rights	V	
Gender Equality and Women's Empowerment	~~V~~	V
Core Labour Rights	~~V~~	V
Indigenous Peoples	V	
Involuntary Resettlement	V	
Protection of Natural Habitats	V	
Conservation of Biological Diversity	~~V~~	V
Climate Change	V	
Pollution Prevention and Resource Efficiency	V	
Public Health	V	
Physical and Cultural Heritage	~~V~~	V
Lands and Soil Conservation		V

Ouput	Triggers of 15 Principles ESP (Yes/No)	Description
Output 1.1.1. Awareness and understanding of key stakeholders at district level on climate change adaptation based on Water-Energy-Food Nexus is in place	No	No significant risks identified. This activity aims to enhance awareness and understanding of key district-level stakeholders on climate change adaptation. Target: 6 district-level stakeholders.
Output 1.1.2. A district-level working group for climate change adaptation established under the district multistakeholder forum	No	No significant risks identified. This working group will lead and coordinate climate change adaptation efforts in the district.
Output 1.1.3. Climate change vulnerability assessment using district level data and indicators and climate modeling based on water-energy-food (WEF) nexus approach	No	No significant risks identified. This assessment will provide critical understanding of the district's vulnerability to climate change. This project will targeting district-wide climate change vulnerability assessment report for being used by key stakeholders.
Output 1.1.4. Tailored technical capacity building on climate change adaptation for relevant stakeholders facilitated	No	No significant risks identified. This activity will enhance the technical capacity of relevant stakeholders on climate change adaptation. Involving 50 stakeholders (OPDs and Academics)
Output 1.2.1. Need assessment analysis of effective management instrument available	No	No significant risks identified. This analysis aims to identify the needs for effective management instruments with involving local farmers.
Output 1.2.2. Climate change adaptation management instrument developed	No	No significant risks identified. This management instrument will assist in decision-making related to climate change adaptation.
Output 1.2.3. Target villages are facilitated to prepare PROKLIM registration	No	No significant risks identified. This PROKLIM registration can strength climate adaptation action at village level
Output 2.1.1. Village level climate change risks and vulnerability assessment developed	No	No significant risks identified. This assessment will identify climate change risks and vulnerabilities at the village level. The project will cover up to 6 assessment reports for all villages.
Output 2.1.2. WEF nexus-based adaptation options indentified by target group (vulnerable groups, farmers, village government staffs)	No	No significant risks identified. This activity will identify suitable WEF-based adaptation options for target groups. The project will laveraging numbers of options each for adaptive water, food/agriculture, and renewable energy management.
Output 2.1.3. Village WEF nexus-based adaptation action plan developed	No	No significant risks identified. This action plan will help villages develop WEF-based adaptation strategies. Target: 6 village action plans.
Output 2.1.4. Village-based adaptive water management and physical infrastructure development	Yes, Principle 15 Lands and Soil Conservation	Risks related to land and soil conservation. The physical construction of adaptive water infrastructure may cause changes to soil and land conservation. The physical construction of adaptive water infrastructure, including NbS knock-down levees along the river (500 meters), ponds, and a mini nature-based water treatment plant & distribution pipe, may affect soil and land conservation. Risks include potential impacts on soil quality, which must comply with Undang-Undang No. 32 Tahun 2009, requiring an Environmental Impact Assessment. Additionally, these activities may influence the hydrological system, necessitating adherence to Peraturan

		Pemerintah No. 37 Tahun 2010 to manage river basins and prevent floods, erosion, and sedimentation. To mitigate these risks, the project will implement Nature-Based Solutions (NbS) for water management, enhancing resilience while aligning with regulatory frameworks.
Output 2.1.5. Village-based adaptive agriculture management and physical infrastructure development	No	No significant risks identified. This activity will improve adaptive agriculture management and develop physical infrastructure in villages. This output will be improve resilience covers 50 hectares plantation areas, that beneficiaries around 200 farmers.
Output 2.1.6. Village-based adaptive renewable energy management	No	No significant risks identified. Village-based renewable energy management will support climate information systems. This output targetting 1 climate information system. Involving 90 stakeholders (OPDs).
Output 2.2.1. Supply chain mapping of leading commodities and commodities development plan is available	No	No significant risks identified. Supply chain mapping and development plans for leading commodities will help understand market demands, by targeting 1 supply chain and market demand analysis. This output will be involving academics, OPDs, civil society, vulnerable peoples, and farmers.
Output 2.2.2. Options to improve leading commodities value through its derivative products are identified and implemented by farmers	No	No significant risks identified. These options will help farmers increase the value of their commodities through derivative products, by produce 1 document each for options to improve commodities value, derivatives products, and efficient commodities distribution. This output will be involving academics, OPDs, civil society, vulnerable peoples, and farmers.
Output 2.2.3. Technical capacity of and tools/machinery for farmers to produce value-added products is strengthened and in place	No	No significant risks identified. Enhancing technical capacity and providing tools/machinery for farmers will help them produce value-added products. Target: 60 farmers with technical capacity and access to tools/machinery.
Output 3.1.1. IEC materials and tools design based on local context developed	No	No significant risks identified. IEC materials and tools designed based on local context will help disseminate knowledge. Target: IEC materials and tools design. This output will be involving local champion, OPDs, government agencies (K/L), local journalist, and civil society.
Output 3.2.1 Center of excellence digital platform to disseminate knowledge, lessons learned and best practices developed and launched	No	No significant risks identified. The Center of excellence digital platform will disseminate knowledge, lessons learned, and best practices developed during the project. This output will be involving OPDs, government agencies (K/L), and civil society.

115. Based on the risk assessment above, the consortium acknowledges the potential risks of the proposed project. It considers minor, small scale (limited impacts and not widely spread), reversible, and easily mitigated risks. Therefore, the project can be categorized as

~~"Category B" about Adaptation Fund's Risk Categorization. The Environmental and Social Management Plan Document describes the potential direct, indirect, transboundary and cumulative risks and impacts and their respective mitigation measures in more detail.~~

128. Grievance Mechanism Guidance

As part of the program implementation, the Project Management Unit (PMU) will also set up a grievance mechanism for the stakeholders involved. This mechanism is needed to ensure the program is always in line with AF's ESMP that promotes environmental and social safeguard and also ensures that it is always in line with the community's interest and meets their expectations. Steps that will be taken for setting up the mechanism are as follow:

1. Initial orientation for the PMU will include materials on ESMP and grievance mechanism so that the staff will understand their roles and responsibilities on this matter.
2. Assign staff/team of staff that will be responsible for receiving and processing the grievance.
3. Develop procedures for accepting/logged-in grievances, grievance assessment process, providing feedback for the grievance, and monitoring the feedback.
4. Create internal communication procedures for the mechanism
5. Communicating the ESMP and grievance mechanism at the beginning of program implementation to the stakeholders

129. The grievance mechanism procedure that will be set up will follow these following general guidelines:

1. Logged-in Grievance: Stakeholders should formally communicate grievances in a written manner (see Figure 8) and send it to the appointed staff through email or hand-delivered the text to the PMU office. Once it's being logged, the particular stakeholder will receive receipt that acknowledging the complaint is being accepted and will be processed.
2. Grievance Assessment: Once the complaint is logged-in and recorded, an assessment process will be done by a specific team by considering the complainants, issues, mitigation measures in place, rating the grievance and exploring options to address the grievance. The team leader will continually update on the process.
3. Providing and Communicating Feedback: Once the option is selected, the team will prepare a response for the grievance and communicate the response formally in written text to the complainant
4. Monitoring Feedback: To ensure the feedback is well received by the complainant or to maintain in case there will be follow up response, the responsible staff will continually monitor the grievance cases logged-in, its feedback and how it is being dealt with in practice.

130. The PMU (Executing Entity, led by Coaction Indonesia) provides a grievance mechanism as a first step to handle complaints.

Complaints that will be processed with the grievance mechanism are only related to all project activities. If consensus is not reached, a complaint can be submitted to the Kemitraan (Implementing Entity) using the form. Complaints and complaints information must be submitted in writing via email or letter sent or delivered directly during the visit. A more detailed grievance mechanism and the responsible staff will be developed at the beginning of program implementation.

131. The procedures will be communicated to all stakeholders during initial workshops at city and village level, and also continually during any training or workshop conducted by PMU. The printed procedures will be made available at village office and PMU office to ensure stakeholders that are unable to attend the initial workshop understand the grievance mechanism of the program. This step is taken to show that the program tries its best to provide benefits for the wider community by always taking into account their interest and concerns in program implementation.

Grievance Form
Konsorsium Lingkungan Adaptif, Berkelanjutan, Inovatif, dan Partisipatif
(KOLABORASI)

Filled by KOLABORASI

Grievance No.		
Name of registrarar		Date
Source	email / phone / visit / others: ....*)	

*) Circle the appropriate

Filled by Complainant

Complainant Data		
Name		
Address		
Phone No.		
Email		
Grievance Information		
Location		
Program		
Parties was reported		
Date of occurance		
Detail grievance: (Completed with related evidence or documents. If this part is insufficient, then allowed to use additional paper)		
Complaint name and signature		Date
Receiver name and signature		

Figure 7. Grievance Form

Complaints regarding projects/programmes can also be filed with the secretariat at the address provided below :

1. Coaction Indonesia
   Jl. Abdul Majid Raya No.23, RT.4/RW.5, Cipete Selatan, Kec. Cilandak, Kota Jakarta Selatan, Daerah Khusus Ibukota Jakarta 12410. Tel: +622175811036. pengaduan@coaction.id
2. Kemitraan for Partnership Reform
   Jl. Taman Margasatwa Raya No.26, RT.8/RW.1, Ragunan, Ps. Minggu, Kota Jakarta Selatan, Daerah Khusus Ibukota Jakarta 12550. Tel: +622122780580. info@kemitraan.or.id
3. Adaptation Fund Board secretariat Mail stop: MSN P-4-400
   1818 H Street NW, Washington DC, 20433, USA. Tel: 001-202-478-7347. afbsec@adaptation-fund.org

PART III: IMPLEMENTATION ARRANGEMENTS

A. Arrangements for Project/Programme Implementation

132. Figure 8 illustrates the structure of the PMU for implementing the project. Kemitraan as the National Implementing Entity (NIE) will act as the Executing Entity in the project and will be responsible in developing the PMU and assisting them in managing and implementing the project.

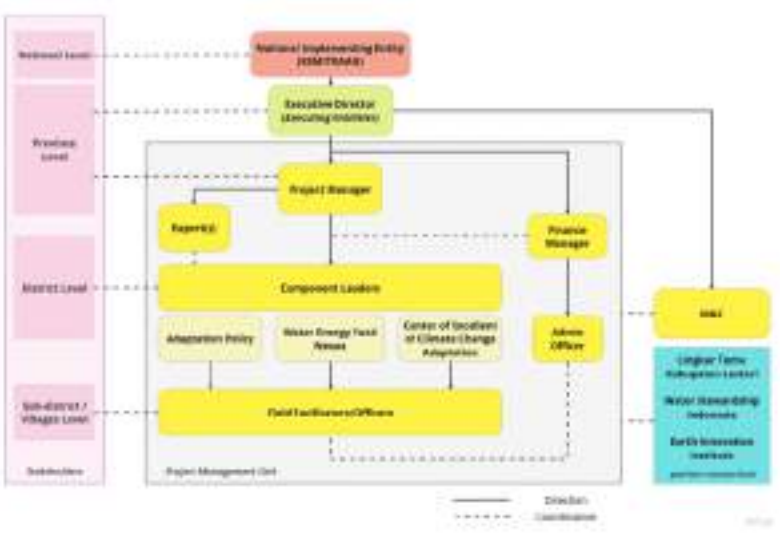

Figure 8. Institutional Structure of the Project

~~116.~~133. Konsorsium Lingkungan Adaptif, Berketahanan, Inovatif, dan Partisipatif (Kolaborasi) consists of 4 (four) organizations: (1) Yayasan Koaksi Indonesia, as the Lead Organisation; (2) Lingkar Temu Kabupaten Lestari (LTKL); (3) Earth Innovation Institute (EII); and (4) Alliance for Water Stewardship Indonesia (AWS Indonesia).

~~117.~~134. Yayasan Koaksi Indonesia or Coaction Indonesia is a non-profit organization that acts as a network and knowledge hub. Coaction's target is to realize sustainable development throughout the archipelago by accelerating the energy transition from fossil-based energy to renewable energy through three approaches: advocacy work, public campaigns, and strategic partnerships. Coaction collaborates with policymakers, the private sector, academia, community organizations, and youth activists in providing answers to the challenges of the energy transition through policy breakthroughs, funding, technology, and

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human resources. Established on March 16, 2017, some of Coaction's flagships include: 1) Influence Indonesia's biofuel policy; 2) Encourage safeguards for strategic renewable energy technologies developed in Indonesia, 3) Open access to renewable energy to areas that are considered underdeveloped, frontier, and outermost regions; 4) Increase conversation and discourse on Green Jobs as a critical intervention for renewable energy to reach youth in the energy transition wave, 5) Amplify just climate action voices from local to national, 6) Develop learning exchange platforms for civil society organizations on climate and energy issues, 7) Deliver systemic change from strategic partnerships with several coalitions, alliances, and associations, such as Bersih Indonesia (with 30 civil society organizations), Voices for A Just Climate Actions (with 18 civil society organizations), and is a partner of the Sustainable District Platform (LTKL).

~~118.~~135. Lingkar Temu Kabupaten Lestari (Sustainable District Association in English) is an association of district governments formed and managed by the district government in order to realize sustainable land-use at subnational level that protects the environment and improves community welfare through partnership and collaborations. LTKL was established in July 2017 as a caucus for sustainable development under the Association of Indonesian Regency Government (APKASI). Currently, LTKL has 9 active member districts, including Sigi District, in 6 provinces in Indonesia and works side by side with 21 multi-stakeholder partner networks. LTKL General Assembly in 2019 decided that sustainable commodities, including sustainable products utilizing natural resources, were a priority for LTKL members to achieve national targets to obtain quality investment, create jobs and prevent disaster risks. As a forum, LTKL functions as an aid for district members in developing implementation strategies, connecting with the right partners to increase capacity and acquire incentives for sustainable development efforts, and sharing the opportunities and challenges for sustainable development to the public.

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~~119.~~136. EII is a non-profit, applied research and policy institute with a mission to promote climate-friendly rural development through innovative, jurisdictional approaches to sustainable agriculture, forestry and food systems in tropical regions around the world. EII provides direct technical, strategic and convening support to governments, companies, indigenous peoples' organizations and farmers in support of jurisdictional REDD+ and low-emission, low-deforestation rural development. EII has established itself as an international organization working across several geographies to support tropical nations and states that are striving to lower their greenhouse gas emissions from land use as they conserve biodiversity and water resources, secure food and agricultural production systems, and strengthen traditional and indigenous claims on natural resources. EII helps lay the groundwork for a transition to sustainable, productive rural

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development by building multi-stakeholder consensus in support of this agenda, identifying opportunities within government programs and policies to foster good land management through proper planning and land classification, a plantation licensing process, environmental monitoring, and law enforcement.

~~120.~~137. AWS Indonesia is a foundation established to grow and strengthen the leadership of stakeholders in Indonesia in caring for and managing water resources convincingly and reliably that preserve the implementation of the social, cultural, and economic values of water. Yayasan AWS Indonesia wants to inspire users and managers of water to actively participate in maintaining and taking care of water resources on the land of Indonesia. The foundation was established for humanitarian purposes, specifically in growing and strengthening the leadership of stakeholders in Indonesia in caring for and managing water resources convincingly and reliably that preserve the implementation of water values not only in the economic aspect but also in socio-cultural and environmental. AWS water stewardship approach is embodied in the International Water Stewardship Standard (AWS Standard). The AWS Standard is an ISEAL standard and a globally applicable framework that drives, recognizes, and rewards good water management practices. Since 2019, AWS Indonesia has been an active promoter of good water stewardship and become a partner of Alliance for Water Stewardship. AWS Indonesia also works together with Water Stewardship Asia Pacific to promote water stewardship.

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~~121. In conducting the proposed project, the consortium will work closely with a variety of local stakeholders. These include relevant governmental institutions, such as the Development Planning and Research Agency (Badan Perencanaan Pembangunan, Penelitian dan Pengembangan Daerah or BP3D), Environmental Agency (Dinas Lingkungan Hidup) and the Disaster Management Agency (Badan Penanggulangan Bencana Daerah or BPBD); all of which had been consulted during the process of concept note development and had expressed the utmost support for this project. The consortium will also work closely with the district-level working group for climate change adaptation, involving it from the commencement of the project and ensuring adequate capacity for project implementation within and beyond the project period.~~

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~~122. The communication strategies for project coordination, reporting, monitoring and evaluation will include regular coordination meetings, with daily communication done through project management platforms, emails and online messaging platform~~

138. The PMU will be established with the main responsibility of managing and implementing different components under the proposed project. The PMU will ensure the implementation is in line with the project frameworks, including its targeted components, outcomes, and

outputs. At the national level, the PMU will operate under Kemitraan.

The Executive Director will represent the PMU at the provincial level. The PMU is led by the Project Manager and will have the authority to run the project on a day-to-day basis and report to the Executive Director. Component Leaders responsible for Adaptation Policy, Water-Energy-Food Nexus, and the Center of Excellence for Climate Change Adaptation will support the Project Manager's daily activities, ensuring the project components are implemented as planned and achieving the targeted outcomes and outputs within the specified constraints of time and cost. Additionally, Component Leaders will be supported by Field Facilitators/Officers in carrying out daily and technical tasks. The Project Manager will be assisted by the Finance Manager and is responsible for the financial issues in the overall project activity, while while the Admin Officer will manage administrative tasks at the district, sub-district, and village levels. In conducting its work, the PMU will receive technical assistance from the Expert(s).

139. The Steering Committee (SC) will oversee the whole program implementation to ensure that the means and mechanisms are in place to run the program effectively to be able to achieve the targeted outcomes, while also representing the voice of stakeholders that do not directly sit on the committee. They will provide high level technical and management guidance to the NIE and PMU for program implementation. Members of the SC will encompass representatives from national, provincial, district, and village governments, as well as academia.

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B. Financial and Project/Programme Risk Management

~~123. The implementation of the project carries several financial and management risks, each with corresponding mitigation strategies. Institutional risks include differing knowledge within the team and personnel changes, which can be mitigated through the internalization of organizational culture via SOPs and accessible documentation. The risk of not meeting program outcomes is significant but can be managed through regular monitoring, evaluations, and monthly meetings. Financial risks, such as currency exchange fluctuations and disbursement delays, are significant and require careful planning and transparent countermeasures. Social risks include ensuring gender equality and legal access for community management, addressed by inclusive participation and facilitation efforts. Environmental risks involve potential adverse effects on living organisms and the environment, which necessitate thorough risk assessment and mitigation. Political risks, such as leadership changes due to elections, require ongoing updates and renewed government endorsements.~~

140. To mitigate potential risks across institutional, financial, social, and political aspects, the PMU and consortium will implement strategic

measures such as continuous capacity-building and structured onboarding to address personnel changes, regular performance monitoring and evaluations to ensure project outcomes are met, and adaptive strategies to manage compressed schedules. Financial risks, including currency fluctuations and disbursement delays, will be addressed through active coordination with the implementing entity, adherence to financial procedures, and prioritization of low-cost activities like virtual coordination and communication. Social risks related to inclusivity and stakeholder engagement will be mitigated by fostering strong relationships with local governments and communities, establishing inclusive groups at the village level, and utilizing training and workshops for better understanding. Additionally, the PMU will establish and activate a multi-stakeholder forum with regular meetings and an online communication platform to ensure alignment with climate adaptation efforts. Political risks due to leadership changes will be managed through proactive engagement with new officials, orientation sessions, and stakeholder engagement plans to maintain project momentum and ensure smooth transitions.

Table 16. Financial and Project/Programme Risk Management

Categories	Potential Risk	Level	Mitigation Strategy	Cost Estimate	Timeline
Institutional	Different knowledge in the team and changes in personnel	~~Moderate~~Low	~~Internalization of organizational culture through SOPs~~ ~~Institutional documentation is stored in project reports and accessible storage, such as Google Drive as cloud-based storage and sharing management~~The PMU address team knowledge gaps and personnel changes by providing continuous capacity-building, maintaining comprehensive documentation of project processes, and establishing a structured onboarding system to ensure smooth transitions and knowledge continuity.	The mitigation measure cost will be integrated in project execution cost: -Project Manager	-Q1 to Q8
	~~The targeted program's outcome and output are not met by the end of the grant cycle~~	~~Significant~~	~~A monitoring and evaluation mechanism is established and utilized regularly by the team~~ ~~Monthly meetings and reports are conducted to identify bottlenecks and solutions in the program implementation~~		
	~~Multiple compressed schedules due to some overlapped activities~~	~~Moderate~~	~~Each activity is organized and handled by different key PICs so the preparation of overlapped activities can still be carried out simultaneously~~		

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	~~Changes in organizational planning or strategy due to the long ongoing COVID-19 pandemic~~The targeted program's outcome and output are not met by the end of the grant cycle & Multiple compressed schedules due to some overlapped activities	~~Moderate~~Low	~~Communicate actively with partners during the Covid-19 pandemic situation to find a broader perspective in making the best decisions in activities~~ ~~Health is our priority. The working mode is determined dynamically according to the current situation and conditions associated with the provisions of restrictions from the government, both national and local, when working in the field, following the requirements of the health protocol~~ ~~Each activity has a contingency plan to accommodate the worst-case scenario if one or more team members are infected with the Covid-19 virus~~ ~~All our teams are required to have national health insurance (BPJS/JKN-KIS)~~ ~~Hold regular check-in to listen to staff needs for motivation and mental health awareness~~The PMU and consortium will mitigate the risk of unmet outcomes and outputs by implementing regular performance monitoring, conducting periodic evaluations, and adjusting strategies as needed to stay on track with project goals within the grant cycle	The mitigation measure cost will be integrated in project execution cost: -M&E Specialist	-Q1 to Q8
Financial	Changes in currency exchange rate lead to changes in the proposed budget items and the impact on the budget proposed for activities in the work plan	~~Significant~~ Medium	~~Using~~The PMU will mitigate the impact of currency exchange rate ~~according to:~~ ~~The trend before proposal submission~~ ~~The~~fluctuations by regularly coordinating with IE, monitoring exchange ~~rate according to the time of disbursement~~ ~~Readjustment of~~rates, adjusting budget ~~after the disbursement~~allocations accordingly, and prioritizing critical activities	The mitigation measure cost will be integrated in project execution cost: -Finance Manager -IE	-Q1 to Q8
	Delays in disbursement will hinder the process of implementation and its impact on the	~~Significant~~ Medium	~~Funding and financing countermeasures~~The PMU and consortium will mitigate delays by maintaining active communication with IE,	The mitigation measure cost will be integrated in project execution cost:	-Q1 to Q8

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	outputs' achievement		adhering to financial procedures, and prioritizing low-cost activities such as virtual coordination, communication, and initial assessments while ensuring timely disbursement.	-Finance Manager -IE	
	~~Disbursement schemes that require initial financing~~	~~Significant~~	~~This disbursement scheme needs to be known in advance so that countermeasures can be made, especially among the consortium members. The issue of transparency is critical in financing.~~		
Social	The involvement of communities in several activities does not refer to gender equality and inclusive manners	~~Significant~~Low	~~Needed to ensure~~• Building good relationships with local government (village level), community and the ~~involvement of representatives from the~~ community leaders (direct beneficiaries), including women and vulnerable groups before the project starts • The formation of groups at the village level can gather all people/levels that are in ~~every activity possible, mainly on the ground~~target community • Utilization of activities in the form of training/workshops/group discussions to provide understanding of the project.	The mitigation measure cost will be integrated in project execution cost: -Project Manager -IE	-Q1 to Q8
	~~Obtained organizational and legal access to communities to manage programs sustainably~~	~~Significant~~	~~Community facilitation to obtain organizational and legal access that is suitable and agreed by the community, either through the existence of village-level enterprise or cooperation~~		
	No channels play the role of a multistakeholder forum to accelerate climate change adaptation efforts	~~Significant~~Low	~~Join the regional and local Disaster Risk Reduction Forum of Central Sulawesi as the caucus for climate change adaptation accelerator~~The PMU will increase and activate a multi-stakeholder forum with regular meetings, develop an online communication platform for continuous engagement, provide capacity-building activities, and leverage existing networks to ensure inclusive participation and	The mitigation measure cost will be integrated in project execution cost: -Project Manager	-Q1 to Q8

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			alignment with climate adaptation efforts.		
~~Environmental~~	~~Availability of actual or potential threat of adverse effects on living organisms and environment by effluents, emissions, wastes, resource depletion, etc., arising out of project activities. The threat would result in financial loss that occurs due to: 1.) Liability for personal injury and property damage; 2.) Liability for the remediation of environmental impacts; 3.) First party loss arising from an environmental impact. (e.g. owned property damage and restoration, business interruption, etc.) 4.) Civil fines and penalties as well as compensation for impaired natural resources.~~	~~Significant~~	~~Environmental risk identification, assessment, and evaluation. These efforts involve determining the magnitude of identified risks (the combination of likelihood and consequence) and making decisions about whether they are acceptable or whether they warrant treatment.~~		
Political	Change in leadership due to the election results in 2024	~~Significant~~Low	~~Updating the latest relevant leadership and renew the endorsement from the government based on the existing letter given for the project~~The Project Management Unit (PMU) and consortium will proactively engage with newly elected officials through regular briefings and orientation sessions to ensure alignment with project objectives. Development of a stakeholder engagement plan to facilitate smooth transitions and maintain project momentum despite political changes.	The mitigation measure cost will be integrated in project execution cost: -Project Manager	-Q1 to Q8

C. Environmental and Social Risk Management

~~124. As the project is more toward strategic planning and programming, the possibility of negative environmental and social impacts and risks are very minimal.~~

~~125. Collaboration with different stakeholders across different stakeholder groups in the district will also enable the identification of risks across different sectors, along with preventive measures to be taken as early as possible to ensure that the potential environmental and social risks are minimized. Safeguarding policy from each organization and for the project must be made clear to avoid any breach of the safeguard policy.~~

141. The project preparation has identified environmental and social risks requiring the proposal to include environmental and social

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management plans that outline necessary actions to avoid, minimize, or mitigate potential risks. Table 17 presents a further assessment of compliance with the Adaptation Fund Environmental and Social Policy and the corresponding mitigation measures for environmental and social risk management.

142. The assessment identifies that the project may pose environmental and social risks related to 6 principles, including Marginalized and Vulnerable Groups, Gender Equality and Women's Empowerment, Core Labour Rights, Conservation of Biological Diversity, Physical and Cultural Heritage, and Lands and Soil Conservation. Details on risk and risk rating, mitigation measures, cost estimate, and timeline can be found in Annex 2.

143. **Marginalized and Vulnerable Groups:** Mitigation measures include identify and anticipate any possible barriers that will prevent participation of the vulnerable groups, gender sensitive/responsive and inclusive stakeholder mapping guidelines to be developed, trained and mainstreamed, development, training, and mainstreaming of gender sensitive/responsive and inclusive management instrument and risk and vulnerability assessment guidelines.

144. **Gender Equality and Women's Empowerment:** Mitigation measures include identify and anticipate any possible barriers that will prevent participation of the vulnerable groups, gender sensitive/responsive and inclusive stakeholder mapping guidelines to be developed, trained and mainstreamed, development, training, and mainstreaming of gender sensitive/responsive and inclusive management instrument and risk and vulnerability assessment guidelines.

145. **Core Labour Rights:** Mitigation measures include provide skill-building programs for local workers, conduct pre-construction safety assessments and enforce safety protocols (e.g., personel protective equipment [PPE]).

146. **Conservation of Biological Diversity:** Mitigation measures include conduct biodiversity impact assessments, design construction to minimize habitat disruption, implement reforestation initiatives where necessary.

147. **Physical and Cultural Heritage:** Mitigation measures include identify and map cultural heritage sites in advance, ensure construction to avoid damage to significant cultural sites, coordinate with cultural heritage agencies, comply with regulations on cultural heritage (e.g., Law No. 11/2010 on Cultural Heritage).

148. **Lands and Soil Conservation:** Mitigation measures include notify/inform the community in advance about construction schedules

and potential land impacts, implement Nature-Based Solutions (NbS) to enhance sustainable water management.

Table 17. Environmental and Social Risk Management

~~Environmental and Social Principles~~	~~Description of Risks~~	Risk ~~Category (H/M/L)~~and Risk Rating		Risk ~~Strategy~~Mitigation Measures
Compliance with the Law				
~~Lands and Soil Conservation~~	~~The physical construction of adaptive water infrastructure, including NbS knock-down levees along the river (500 meters), ponds, and a mini nature-based water treatment plant & distribution pipe, may affect soil and land conservation.~~	~~Medium~~	~~This project component will comply with Undang-Undang No. 32 Tahun 2009, requiring an Environmental Impact Assessment. Additionally, the project will follow Peraturan Pemerintah No. 37 Tahun 2010 to manage river basins and prevent floods, erosion, and sedimentation. The implementation of NbS for water management will be monitored to ensure minimal impact on soil and land conservation.~~The project complies with Indonesia's sustainable development commitments, such as the Nationally Determined Contributions (NDC) and the National Action Plans for Climate Change Adaptation (RAN-API) along with Ministry of Environment and Forestry Regulation No. 33/2016 on Climate Change Adaptation. The project aligns with Presidential Regulation No. 98/2021, supporting carbon credit implementation to reduce GHG emissions and achieve NDC targets, while enhancing ecological resilience through WEF nexus interventions in Sigi District. **(Risk: Negligible)** In synergy with the National Long-Term Development Plan (Rencana Pembangunan Jangka Panjang Nasional [RPJPN]) 2025–2045 and the Sigi District's Medium-Term Development Plan (Rencana Pembangunan Jangka Menengah Daerah [RPJMD]) 2021–2026, the project supports ecological resilience and sustainable agriculture addressing climate change impacts. Regionally, the project aligns with Regional Regulation 4/2019 on Green Sigi specifically Article 16 which mandates climate adaptation action plans. The project also follows Law No. 32/2009 and Government Regulation No. 22/2021 ensuring environmental protection and sustainable resource use during implementation. **(Risk: Negligible)** The project complies with gender equality, disability and social inclusion (GEDSI) laws, such as Presidential Instruction 9/2000 on Gender Mainstreaming and Law No. 8/2016 on People with Disabilities by engaging vulnerable groups, including farmers, women, youth, elderly, and people with disabilities. **(Risk: Negligible)** The project further complies with Law No. 11/2020 on Job Creation promoting sustainable	No specific mitigation measure

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			livelihoods and Government Regulation No.12/2019 on Regional Financial Management ensuring efficient regional financial management for project activities. **(Risk: Negligible)**	
Access and Equity				
	~~Impact on Soil Quality: Construction activities may lead to soil erosion and degradation, impacting agricultural productivity and local ecosystems.~~	~~Low~~	~~To mitigate soil erosion and degradation, NbS such as the creation of riparian buffers and vegetative swales will be implemented. These solutions are supported by studies showing their effectiveness in stabilizing soil and improving water quality. Regular monitoring and maintenance will be conducted to ensure soil quality is preserved.~~Based on the assessment, there are no significant risks related to access and equity. Potential challenges, such as infrastructure accessibility and the distribution of resources within the community, can be effectively managed through well-planned stakeholder engagement, capacity-building efforts, and inclusive distribution mechanisms. The project is designed to ensure equitable access for all, including vulnerable groups, by facilitating collaboration with local stakeholders and implementing strategies that address potential barriers. **(Risk: Negligible)**	No specific mitigation measure
Marginalized and Vulnerable Groups				
The project risks excluding meaningful participation from vulnerable groups, particularly individuals with disabilities in Sambo Village. In this village, there are people with disabilities who face various barriers, such as the lack of guiding blocks for visually impaired people, limited availability of sign language interpreters for those with hearing impairments, and physically inaccessible venues (e.g., narrow entrances, no ramps). **(Risk: Low)**	-Identify and anticipate any possible barriers that will prevent participation of the vulnerable groups. -Gender sensitive/responsive and inclusive stakeholder mapping guidelines to be developed, trained and mainstreamed. -Development, training, and mainstreaming of gender sensitive/responsive and inclusive management instrument and risk and vulnerability assessment guidelines.			
Human Rights				
The project does not pose any potential negative impact on human rights. The project aims to enhance the resilience of communities in six villages—Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo—through adaptation policy formulation, WEF nexus implementation, and the establishment of the center of excellence. During implementation, the project ensures that human rights principles are upheld in all activities. Therefore, the project will strengthen the human rights and capacities of the villagers. **(Risk: Negligible)**	No specific mitigation measure			
Gender Equality and Women's Empowerment				

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Gender equality and women's empowerment are crucial issues from the district level to the village level and this is not limited to the project site. This is due to the lack of awareness and understanding of gender equality which limits the opportunities provided to women. The risks include limited involvement of women because there are few women in leadership positions at the village level, low representation of women in leadership positions within village governments may limit their influence in decision-making processes, potentially hindering gender-inclusive implementation of the WEF nexus, women may face barriers to meaningful involvement in the establishment of the center of excellence due to a double burden of childcare and agricultural responsibilities. **(Risk: Low)**	-Identify and anticipate any possible barriers that will prevent participation of the vulnerable groups. -Gender sensitive/responsive and inclusive stakeholder mapping guidelines to be developed, trained and mainstreamed. -Development, training, and mainstreaming of gender sensitive/responsive and inclusive management instrument and risk and vulnerability assessment guidelines.
Core Labour Rights	
The project has low potential risks to core labor rights. These risks include the creation of jobs that may not employ local workers and, if they do, may result in work accidents, particularly those related to the construction of WEF infrastructure. **(Risk: Low)**	-Provide skill-building programs for local workers. -Conduct pre-construction safety assessments and enforce safety protocols (e.g., personel protective equipment [PPE]).
Indigenous Peoples	
The project does not pose potential risks to indigenous peoples. This is because based on public consultation, field surveys, and in-depth interviews with village community representatives, it was identified that there were no indigenous peoples in Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo villages. **(Risk: Negligible)**	No specific mitigation measure
Involuntary Resettlement	
The project does not pose a risk of involuntary resettlement. The implementation of the project which includes the formulation of adaptation policies, the implementation of the WEF nexus, and the establishment of the center of excellence does not require significant land. Therefore, the project does not result in land use change, conversion of residential land to project land, or even involuntary resettlement. **(Risk: Negligible)**	No specific mitigation measure
Protection of Natural Habitats	
The project has no potential risks to the	No specific mitigation measure

protection of natural habitats. This is because based on public consultations, field surveys, and in-depth interviews with village community representatives, it was identified that the 6 targeted villages as the project location does not overlap with protected areas. **(Risk: Negligible)**	
Conservation of Biological Diversity	
The project has low potential risks to conservation of biological diversity. The implementation of the project, especially the construction of WEF infrastructures and the development of the supply chain of the intervened commodities may disrupt biodiversity conservation. This is because the targeted villages as the project location, such as Pandere, Pakuli Utara, and Simoro villages have buffer forest areas that have high biodiversity. **(Risk: Low)**	-Conduct biodiversity impact assessments. -Design construction to minimize habitat disruption. -Implement reforestation initiatives where necessary.
Climate Change	
The project has no potential to cause climate change. This is because the implementation of this project does not release large amounts of GHG emissions that can worsen current climate change. **(Risk: Negligible)**	No specific mitigation measure
Pollution Prevention and Resource Efficiency	
The project is committed to minimizing potential risks to pollution prevention and resource efficiency. To ensure this, a pact of integrity will be established prior to the project's commencement. This pact will outline the project's strong commitment to preventing pollution and optimizing resource use during its implementation. Through this proactive measure, all project stakeholders will adhere to environmentally responsible practices, ensuring that activities are conducted sustainably and align with the pollution prevention and resource efficiency. **(Risk: Negligible)**	No specific mitigation measure
Public Health	
The project has no potential risks on public health. The project aims to enhance the resilience of communities in Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo villages, through the formulation of adaptation policies, implementation of the WEF nexus, and the establishment of the center of excellence. These activities will increase community	No specific mitigation measure

health resilience to diseases caused by climate change. **(Risk: Negligible)**			
Physical and Cultural Heritage			
This project has the potential risks to physical and cultural heritage. This is because the community of Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo villages holds strong beliefs in symbols that are part of their ancestral cultural heritage. The implementation of the project, especially the construction of WEF infrastructures may cause conflict with the location of these cultural symbols. **(Risk: Low)**	-Identify and map cultural heritage sites in advance. -Ensure construction to avoid damage to significant cultural sites. -Coordinate with cultural heritage agencies. -Comply with regulations on cultural heritage (e.g., Law No. 11/2010 on Cultural Heritage).		
Lands and Soil Conservation			
	~~Influence on Hydrological System: The construction of water infrastructure might disrupt the natural hydrological system, leading to issues such as altered water flow, increased flood risk, and reduced water quality.~~The project may potentially disrupt lands and soil conservation. This is due to the project involving the construction of WEF infrastructures, such as the NbS knock-down levee (500 meters), ponds, mini nature-based water treatment plants with distribution pipes, household water and sanitation facilities, solar PV installment, and agriculture irrigation/drainage system. These activities could lead to minor land use changes, such as converting green spaces into built-up areas. **(Risk: Low)**	~~Low~~	~~In accordance with Peraturan Pemerintah No. 37 Tahun 2010 and Undang-Undang No. 11 Tahun 1974, the project will employ NbS like wetland restoration and floodplain reconnection. These methods have been shown to enhance flood resilience and improve water quality by mimicking natural hydrological processes (Source: Water Research, 2019).~~ Notify/inform the community in advance about construction schedules and potential land impacts. -Implement Nature-Based Solutions (NbS) to enhance sustainable water management.

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D. Monitoring and Evaluation Arrangements

~~126.~~149. Monitoring and Evaluation of Climate Change Adaptation (M&E) consist of these components (1) Strategy and objectives; (2) Achievement Indicators; (3) Implementation of Activities; (4) Financial Use, which refer to:

a. Compliance (compliance); whether the project implementation follows existing standards and procedures
b. Examination (auditing); whether the resources and services

intended for certain parties (target audience/beneficiaries) are accountable

c. Reports (accounting); generating information or proof of evidence to measure the social changes based on the financial traceability
d. Explanation (narrative); generating storytelling to justify that the project implementation is consistent with the planning and below or beyond the target.

~~127.~~150. M&E is carried out throughout the planning, implementation, and reporting stages based on ~~the availability of~~ 1) ~~Activity Report or Back-to-officer Report (field visit),~~KAP (Knowledge, Attitude, and Practice) surveys, 2) Quarterly/Progress Reports, 3) Joint Monitoring, 4) Annual Reports, and ~~4~~5) Final Report.

~~a. **Activity Report:** The reporting process will take place after every activity is carried out. These reports identify who attends the activity and points of discussion/actions. The pieces should also include documentation and financial statements.~~

a. KAP surveys:KAP surveys will be conducted to measure immediate impacts of the project. This surveys include baseline, mid, endline

b. Quarterly Reports: The consortium members will report every three months to summarize achieved activities and output levels that contribute to the expected results.

c. **Joint Monitoring:** The project will conduct regular joint monitoring participated by project's stakeholders. This monitoring will be conducted every six months of project implementation, to review project progress, compliance, quality, and identify any systemic issues as well as to document recommendations for corrective actions.

~~c.~~d. **Annual Reports:** Annual reports consist of progress and achievements within a year of implementation and whether the project has succeeded in harvesting the planned outcome.

~~d.~~e. **Final Report:** The Project Final Report is intended to summarize the project's outcomes and is the final document of the Kolaborasi Project. Relevant stakeholders can use the report to document project successes, lessons learned, and performance to signal future project delivery improvement.

f. **M&E Specialist:** The M&E Specialist, with a budget of $12,800 under Project Execution Costs, will develop comprehensive monitoring and evaluation plans and ensure their effective implementation. This includes preparing quarterly, biannual, annual, and final reports to track progress and evaluate project outcomes.

151. M&E component budget of the project is as follows:

Table 18. Monitoring and Evaluation Component Budget

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Activity			Cost (US$)
1.1.1.1	Establish comprehensive (baseline, mid, endline) understanding of current institutional awareness on WEF Nexus-based climate change adaptation		**26,745**
	1.1.1.1.1	Consultant KAP survey & program design	4,000
	1.1.1.1.2	Fee Enumerator	900
	1.1.1.1.3	Local Transportation for Enumerator	120
	1.1.1.1.4	Consultant Senior M&E	1,925
	1.1.1.1.5	Consultant - Administration	19,800
2.1.2.4	Monitoring and evaluation of climate adaptation actions		**11,713**
	2.1.2.4.1	Airfare Jakarta - Palu - Jakarta.	6,400
	2.1.2.4.2	Airport Transport CGK, Palu	800
	2.1.2.4.3	Accomodation in Sigi	600
	2.1.2.4.4	Perdiem	2,880
	2.1.2.4.5	Car rent	1,000
	2.1.2.4.6	Prepare Progress and Final Reports	33

E. Results Framework

~~128.~~152. The Results Framework for the project in Sigi District is structured into three main components.

Component 1 focuses on strengthening the enabling environment to support adaptation policy implementation, aiming to improve the institutional capacity of local stakeholders through training, establishing working groups, and developing climate change vulnerability assessments and technical capacity building.

Component 2 applies the Water-Energy-Food (WEF) nexus approach to enhance the effectiveness of the district's Climate Change Adaptation Action Plan at the village level. This involves developing participatory adaptation action plans, vulnerability assessments, and implementing adaptive water, agriculture, and renewable energy management strategies.

Component 3 establishes a Center of Excellence for climate change adaptation at the district level. This component focuses on developing and disseminating learning and communication tools for replication, creating digital platforms to share knowledge, lessons learned, and best practices from the adaptation projects, ensuring wider stakeholder engagement and public access.

Table 19. Results Framework

Outcome/Output	Indicator	Baseline	Target	Source of	Risk and	Activity	PIC

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				Verification	Assumption			
Component 1. Strengthened enabling environment to support Adaptation policy implementation in Sigi District								
Outcome 1.1. Improved institutional capacity of local stakeholders at district-level on WEF nexus-based climate change adaptation	**Number of district-level stakeholders trained on WEF nexus-based climate change adaptation**	**The institutional capacity of local stakeholders in Sigi District for planning and implementing climate change adaptation measures is unknown and capacity improvement has not been conducted**	**6 district-level stakeholders**	**Assessment reports, activity reports, decision letters, documentation**	**Assumption: Sigi district government is committed to improved its understanding and capacity on climate change adaptation** **Risks: Capacity building might successful at individual level but not institutional/systemic level**			
Output 1.1.1. Awareness and understanding of key stakeholders at district level on climate change adaptation based on Water-Energy-Food Nexus is in place	Number of climate change adaptation champions identified and appointed for each relevant stakeholders	0	10 champions from 6 relevant stakeholders (OPD & academics)	Appointment letter from the agencies	Assumption: Key stakeholders willing to nominate the their champions Risks: Staff rotation	1.1.1.1	~~Activity 1.~~ Establish comprehensive (baseline, mid, endline) understanding of current institutional awareness on WEF Nexus-based climate change adaptation	LTKL
						1.1.1.2	~~Activity 2.~~ Develop a detailed awareness programme on WEF Nexus-based Climate Change Adaptation	LTKL
						1.1.1.3	~~Activity 3.~~ Workshop on climate change adaptation - WEF approach	LTKL
						1.1.1.4	~~Activity 4.~~ Awareness Video/Photo/Poster competition among relevant district-level stakeholders and for public on WEF Nexus-based Climate Change Adaptation	LTKL
Output 1.1.2. A district-level working group for climate change adaptation established under the district multistakeholder forum	Number of district-level working group for climate change adaptation established for spearheading climate change adaptation efforts in the district	0	1 district-level working group for climate change adaptation established and operating	Activity report, documentation, Team development decision letter (SK pembentukan tim atau Surat Tugas)	Assumption: Head of District supports the establishment of working group under the district multistakeholder forum Risks: SK for working group not issued/takes time to be issued	1.1.2.1	~~Activity 1.~~ Brainstorming on the idea of working group establishment (role, function, workplan of draft working group)	LTKL
						1.1.2.2	~~Activity 2.~~ Drafting decision letter (SK) of Working Group	LTKL
						1.1.2.3	~~Activity 3.~~ Launching working group (discuss and agree on working group work plan)	LTKL
Output 1.1.3. Climate change vulnerability	Availability of vulnerability	0	1 district-wide climate change	Copy of assessment report	Assumption: There is a high	1.1.3.1	~~Activity 1.~~ Climate change vulnerability	LTKL

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assessment using district level data and indicators and climate modeling based on water-energy-food (WEF) nexus approach	assessment report on climate change adaptation		vulnerability assessment report		interest from the Sigi District Governemnt to understand the critical vulnerability of the district aganst climate change Risk: Limited information (inputs) for the management instrument (database management)		assessment through secondary data and FGD	
						1.1.3.2	~~Activity 2.~~ Develop climate change vulnerability assessment report	LTKL
Output 1.1.4. Tailored technical capacity building on climate change adaptation for relevant stakeholders facilitated	Number of representatives of relevant stakeholders participating in technical capacity building	0	50 representatives	Modules, documentation, training certificate	Assumption: Willingness to participate is high Risks: Number of representatives from relevant stakeholders is low	1.1.4.1	~~Activity 1.~~ Conducting need Assessment on Climate Change Adaptation Preparedness	KOAKSI
						1.1.4.2	~~Activity 2.~~ Develop a detailed training program and set of modules of technical training, including women and vulnerable groups	KOAKSI
						1.1.4.3	~~Activity 3.~~ Workshop and technical training on climate change adaptation ~~Topic 1. Climate hazard & impact (Climate rationale)~~ ~~Topic 2. Adaptive water management~~ ~~Topic 3. Adaptive food management~~ ~~Topic 4. Adaptive energy management~~ ~~Topic 5. Socio economic resilience~~ ~~Topic 6. Policy development (background study)~~ ~~Topic 7. Climate registry national (SRN) & inventory GHG (SIGN SMART-IGRK)~~ ~~Topic 8. GEDSI~~ mainstreaming, including women and vulnerable groups	KOAKSI
						1.1.4.4	~~Activity 4.~~ Technical assistance and facilitation for background study for Climate Change Adaptation Action	KOAKSI

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							Plan (RAD-API)	
Outcome 1.2. Management instruments to support effective implementation of climate change adaptation efforts at Sigi District developed and operationalized	**Number of users (OPD, farmers, university, public)**	**Non-existing**	**5 OPD 5 Farmers group 5 Universities 10 Senior High School**	**Management instrument engagement statistic report (website analytics report)**	**Assumption: There is a need for OPD, farmers, university and public to have management instruments Risk: 1. Limited information (inputs) for the management instrument (database management) 2. Limited internet access**			
Output 1.2.1. Need assessment analysis of effective management instrument available	Availability of need assessment report on management instrument	0	1 Assessment report	Assessment document	Assumption: There is a high demand on management instrument to help in making-decision Risk: Limited information (inputs) for the management instrument (database management)	1.2.1.1	~~Activity 1.~~ Initial assessment with interview and desk-analysis	LTKL
						1.2.1.2	~~Activity 2.~~ Consultation with Focus group discussions on management instruments with multistakeholders platform	LTKL
Output 1.2.2. Climate change adaptation management instrument developed	Number of climate change adaptation management instruments	0	3 management instruments	One stop web portal	Assumption: There is a high demand on management instrument to help in making-decision Risk: Limited information (inputs) for the management instrument (database management)	1.2.2.1	~~Activity 1.~~ Design management instrument	LTKL
						1.2.2.2	~~Activity 2.~~ Development of management instruments	LTKL
						1.2.2.3	~~Activity 3.~~ User trial test of management instruments	LTKL
						1.2.2.4	~~Activity 4.~~ Dissemination & training of management instrument	LTKL
						1.2.2.5	~~Activity 5.~~ Climate awareness goes to schools (trainings)	LTKL
Output 1.2.3. Target villages are facilitated to prepare PROKLIM registration	Number of villages registered under PROKLIM	0	up to 100 climate communities	PROKLIM registration documents, reports from facilitators	Assumption: Community and local authorities are willing to participate and cooperate Risk: Lack of awareness or understanding about PROKLIM; potential resistance from local authorities or communities	1.2.3.1	~~Activity 1.~~ Workshop, training, and socialization PROKLIM at village level	KOAKSI
						1.2.3.2	~~Activity 2.~~ PROKLIM registry assistance with enumerators	KOAKSI

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Outcome/Output	Indicator	Baseline	Target	Source of Verification	Risk and Assumption	Activity		PIC
Component 2. WEF nexus approach applied to improve the effectiveness of District's Climate Change Adaptation Action Plan								
Outcome 2.1. Participatory WEF nexus-based adaptation action plan developed & applied at village level	**Number of villages developing WEF nexus based adaptation action plans**	**0**	**6 villages**	**WEF Nexus-based Adaptation Action plan, report, feedback**	**Assumption: There is a high demand on from village to develop WEF Nexus-based Local Adaptation Plan** **Risk: Limited data & information (inputs) to develop action plan**			
Output 2.1.1. Village level climate change risks and vulnerability assessment developed	Availability of village level climate change risks and vulnerability assessment	0	6 assessment reports	MoM of FGDs, assessment reports	Assumption: There is a high demand on from village to develop WEF Nexus-based Local Adaptation Plan Risk: Limited data & information (inputs) to develop action plan	2.1.1.1	~~Activity 1.~~ Focus grup discussions (preparedness and awareness on climate change risk and vulnerability assessment)	KOAKSI
						2.1.1.2	~~Activity 2.~~ Develop rapid assessment on climate change risks and vulnerability, including women and vulnerable groups	KOAKSI
						2.1.1.3	~~Activity 3.~~ Diseminate result of rapid assessment to all village stakeholders	KOAKSI
Output 2.1.2. WEF nexus-based adaptation options indentified by target group (vulnerable groups, farmers, village government staffs)	Number adaptation options identified	0	2 options on adaptive water management 2 options on adaptive food/agriculture management 2 options on adaptive renewable energy management	FGDs reports IEC (information, education, and communication) materials of options	Assumption: There is a high demand on adaptation options from village Village already has adaptation options (local wisdom) Risk: Adaptation options are not suitable for village context	2.1.2.1	~~Activity 1.~~ Develop pre-material on adaptation options	KOAKSI
						2.1.2.2	~~Activity 2.~~ Facilitate FGDs on adaptation options	KOAKSI
						2.1.2.3	~~Activity 3.~~ Develop IEC materials of identifed adaption options (WEF Nexus)	KOAKSI
						2.1.2.4	Monitoring and evaluation of climate adaptation actions	KOAKSI
Output 2.1.3. Village WEF nexus-based adaptation action plan developed	Number of action plan	0	6 village action plan	Action plans and Report	Assumption: There is a high demand on from village to develop WEF Nexus-based Local Adaptation Plan Risk: Limited data & information (inputs) to develop action plan	2.1.3.1	~~Activity 1.~~ Develop action plan	KOAKSI
						2.1.3.2	~~Activity 2.~~ Support village to propose identified actions to be financed by village fund and by Adaptation Fund	KOAKSI
						2.1.3.3	~~Activity 3.~~ Workshop on viillage climate adaptation plan	KOAKSI
Output 2.1.4. Village-based adaptive	Number of household with	0	150 household with improved resilience	Construction reports, field survey reports	Assumption: Village community	2.1.4.1	~~Activity 1.~~ Strengthen water	WSI

water management and physical infrastructure development	improved resiliency against flood and improved resiliency on safe access to water and sanitation during drought/dry season		against floods or drought		and village staff willing to contribute and involved in the construction as part of the on-the-job-training for capacity building of the community Risk: 1. Community reluctant to be involved 2. Safety for community and all people involved in physical construction		adaptive management village task force		
						2.1.4.2	~~Activity 2.~~ WASH household-based e-Survey	WSI	**Formatted:** Font: 7 pt
						2.1.4.3	~~Activity 3. Develop activity plan for~~Conduct public consultation and develop adaptive water management~~, physical construction, operation & maintenance, and monitoring/evaluation~~ plan	WSI	**Formatted:** Font: 7 pt **Formatted:** Font: 7 pt
						2.1.4.4	~~Activity 4.~~ Evidence-based planning and budgeting for village WASH program	WSI	**Formatted:** Font: 7 pt
						2.1.4.5	~~Activity 5.~~ Physical construction of adaptive water infrastructure (NbS knock-down levee along the river 500 meter)	WSI	**Formatted:** Font: 7 pt
						2.1.4.6	~~Activity 6.~~ Physical construction of adaptive water infrastructure (ponds)	WSI	**Formatted:** Font: 7 pt
						2.1.4.7	~~Activity 7.~~ Physical construction of adaptive water infrastructure (mini nature-based water treatment plant & distribution pipe)	WSI	**Formatted:** Font: 7 pt
						2.1.4.8	~~Activity 8.~~ Physical construction of adaptive water infrastructure (household water and sanitation facility)	WSI	**Formatted:** Font: 7 pt
Output 2.1.5. Village-based adaptive agriculture management and physical infrastructure development	-Number of plantation areas with improved resiliency against flood -Number of plantation areas with sustainable irrigation during drought/long dry season	0	50 hectares plantation areas (flood)	Construction reports, field survey reports	Assumption: Village community and village staff willing to contribute and involved in the construction as part of the on-the-job-training for capacity building of the community Risk: 1. Community reluctant to be involved	2.1.5.1	~~Activity 1.~~ Strengthen adaptive Agriculture management village task force (Kelompok Tani)	EII	**Formatted:** Font: 7 pt **Formatted:** Font: 7 pt
						2.1.5.2	~~Activity 2.~~ Survey and identify of flood prone on agriculture areas (physical) and cultural heritage (social)	EII	**Formatted:** Font: 7 pt **Formatted:** Font: 7 pt **Formatted:** Font: 7 pt **Formatted:** Font: 7 pt
						2.1.5.3	~~Activity 3.~~ Develop activity plan for	EII	**Formatted:** Font: 7 pt

					2. Safety for community and all people involved in physical construction		adaptive agriculture management & physical infrastructure	
						2.1.5.4	~~Activity 4.~~ Build demonstration plot nursery to produce seedlings for the establishment of plantations	EII
						2.1.5.5	~~Activity 5.~~ Improvement/construction of agriculture irrigation/drainage system with implemented safety protocols	EII
						2.1.5.6	~~Activity 6.~~ ~~Flood~~Biogeographic assessment for natural flood plain development and restoration	EII
						2.1.5.7	~~Activity 7.~~ Retention well construction in flood prone areas of plantations while safeguarding local wisdom/value	EII
Output 2.1.6. Village-based adaptive renewable energy management	Number of climate information system that rely on renewable energy system	0	1 climate information system that rely on renewable energy system	Module documentation, installation reports, user feedback, attendance records, certificates	**Assumption:** **Continued support from local authorities and stakeholders** **Risk:** **1. Community reluctance to participate** **2. Unforeseen logistical and environmental challenges affecting project implementation**	2.1.6.1	~~Activity 1.~~ Development module of efficiency and energy management	KOAKSI
						2.1.6.2	~~Activity 2.~~ Solar PV installment for climate impact information	KOAKSI
						2.1.6.3	~~Activity 3.~~ Climate IoT tools and software development for supporting sustainable agriculture	KOAKSI
						2.1.6.4	~~Activity 4.~~ Improving internet access for climate resilience information	KOAKSI
						2.1.6.5	~~Activity 5.~~ Capacity building to build the technical skills related to the installation and use of solar PV systems and climate IoT tools	KOAKSI
						2.1.6.6	~~Activity 6.~~ Conducting FGD for Community-driven climate resilience information sharing	KOAKSI
						2.1.6.7	~~Activity 7.~~ Conducting for	KOAKSI

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							Workshop Community awareness on energy efficiency and management	
Outcome 2.2. Increased economic, social, livelihood, resilience in the local community	**Number of farmers with increased income due to project intervention**	**0**	**60 farmers**	**Assessment reports, activity reports, documentation**	**Assumption: There is a high willingness from farmers to revisit the business model of their comodities and its derivative products** **Risk: Farmers reluctant to develop derivatives products**			
Output 2.2.1. Supply chain mapping of leading commodities and commodities development plan is available	Availability of supply chain and market demand on leading commodities and derivative products	Non-existing	Supply chain and market demand analysis for leading comomodities and derivative products is available	Analysis report, sustainabale commodities development plan	Assumption: High demand on the leading commodities and derivative products Risk: Low demand on the leading commodities and derivative products	2.2.1.1	~~Activity 1.~~ Conduct supply chain analysis on leading commodities	EII
						2.2.1.2	~~Activity 2.~~ Conduct market demand and distribution analysis on leading commodities and derivative products	EII
						2.2.1.3	~~Activity 3.~~ Develop sustainable commodities development plan	EII
Output 2.2.2. Options to improve leading commodities value through its derivative products are identified and implemented by farmers	-Number of options to improve commodities values -Number of derivatives products with higher value to be added as additional products of farmers -Availability of analysis of efficient commodities distribution	Non-existing	1 document about options to improve commodities value 1 document about derivatives products 1 analysis of efficient commodities distribution	Activity report, Documentation	Assumption: High demand on the leading commodities and derivative products Risk: Distribution of the leading commodities and derivative products might still be too expensive	2.2.2.1	~~Activity 1.~~ Identification of preferable derivative products to be further developed to increase income of farmers	EII
						2.2.2.2	~~Activity 2.~~ Conduct identifed derivative products distribution analysis to ensure product reaching the right market at the right time (including identifying buyers)	EII
Output 2.2.3. Technical capacity of and tools/machinery for farmers to produce value-added products is strengthened and in place	-Number of farmers with technical capacity to produce value-added products -Number of farmer with access to tools/machinery to produce derivative products -Availability of tools/machinery to produce derivative products	Non-existing	60 farmers with technical capacity to produce derivative products 60 farmers with access to tools/machinery to produce derivative products 1 tools/machinery to produce derivative products available	Activity report, Documentation	Assumption: High demand on the leading commodities and derivative products Risk: Tools/machinery is not easy to operate	2.2.3.1	~~Activity 1.~~ Training of trainers for farmers on value-added commodities production	LTKL
						2.2.3.2	~~Activity 2.~~ Developing appropriate Processing Tools/Machinery/Technology for the farmers (to be granted to Village enterprise/BUMDes)	LTKL
						2.2.3.3	~~Activity 3.~~ Training for village enterprises to develop business model e.g. market,	LTKL

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							distribution, and Return of Investment (RoI)	
						2.2.3.4	~~Activity 4.~~ Workshop on ~~increasing on~~ empowering women and vulnerable groups' resilience (economic, social, livelihood~~, resilience in the local community~~)	LTKL
Outcome/Output	**Indicator**	**Baseline**	**Target**	**Source of Verification**	**Risk and Assumption**	**Activity**		PIC
Component 3. Center of excellence of climate change adaptation at district level								
Outcome 3.1. Learning and Communication Tools targeted for replication developed based on Monitoring, Evaluation & Learning (MEL) throughout the process	**Availability of IEC materials and tools**	**Non-existing**	**IEC materials and tools available**	**Activity report, Documentation**	**Assumption: IEC materials and tools are easily accessible through online** **Risk: Onlice access to IEC materials and tools is limited**			
Output 3.1.1. IEC materials and tools design based on local context developed	Availability of IEC materials and tools design based on local context	Non-existing	IEC materials and tools design based on local context developed	Activity report, documentation	Assumption: Local experts to provide insgihts on the local context are available Risk: Local context wisdom/value is not supporting climate change adaptation principle	3.1.1.1	~~Activity 1.~~ Identify local context on adaptation efforts for designing IEC materials and tools	KOAKSI
						3.1.1.2	~~Activity 2.~~ Developing IEC materials and tools design based on local context and lessons learned from the project	KOAKSI
						3.1.1.3	~~Activity 3.~~ Public consultation on the IEC materials and tools	KOAKSI
						3.1.1.4	~~Activity 4.~~ Finalization of IEC materials and tools design based on local context	KOAKSI
						3.1.1.5	~~Activity 5.~~ Development of project lessons learned	KOAKSI
						3.1.1.6	~~Activity 6.~~ Develop communication strategy	KOAKSI
						3.1.1.7	~~Activity 7.~~ Create short documentary about community based climate adaptation	KOAKSI
						3.1.1.8	~~Activity 8.~~ Dissemenation of communication product (short	KOAKSI

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							documentary)	
Outcome 3.2. Disseminated knowledge lesson learned and best practices for further replication by District	**Availability of knowledge, lessons learned and best practices of the adaptation projects that is accessible by publics**	**Non-existing**	**Knowledge, lessons learned and best practices of the adaptation projects that is accessible by publics is available**	**Activity report, Documentation**	**Assumption: Centre of excellence digital platform is prefered as effecitve and efficient tools for dissemination to wider stakeholders** **Risk: Disemination efforts frequency is limited Other adaptation projects knowledge, lessons learned and best practices are not submitted to the same centre of excellence platform**			
Output 3.2.1 Center of excellence digital platform to disseminate knowledge, lessons learned and best practices developed and launched	Availability of centre of excellence on climate change adaptation in Sigi District	Non-existing	Center of Excellence digital platform to disseminate knowledge, lessons learned and best practices available and launched	Activity report, Documentation	Assumption: Centre of excellence digital platform is prefered as effecitve and efficient tools for dissemination to wider stakeholders Risk: Disemination efforts frequency is limited Other adaptation projects knowledge, lessons learned and best practices are not submitted to the same centre of excellence platform	3.2.1.1	~~Activity 1.~~ Design centre of excellence digital platform	KOAKSI
						3.2.1.2	~~Activity 2.~~ User trial test of the centre of excellence digital platform	KOAKSI
						3.2.1.3	~~Activity 3.~~ Sub national policy dialogue for identification learning and sharing climate adapatation action plan (district and province)	KOAKSI
						3.2.1.4	~~Activity 4.~~ Launcing of Sigi District Climate Change Adaptation Centre of Excellence (back-to-back with Closing Ceremony of the Projects)	KOAKSI

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F. Project/Programme Aligns With The Results Framework of The Adaptation Fund

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~~129.~~153. The project objectives align with the Adaptation Fund Result Framework through various indicators and outcomes. It aims to improve adaptive capacity in water, food/agriculture, and energy management. This includes appointing climate change adaptation champions to enhance local awareness (Outcome 3, Indicator 3.1) and establishing district-level working groups to bolster institutional capacity (Outcome 2, Indicator 2.1). The availability of vulnerability assessments and technical capacity building further reduce exposure to climate-related hazards (Outcome 1, Indicator 1.1). Additionally, action plans and improved resiliency in households and plantation areas enhance adaptive capacity within development sector services (Outcome 4, Indicator 4.2). Diversification of livelihoods through technical training and renewable energy initiatives supports increased resilience and

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sustainable income for vulnerable populations (Outcome 6, Indicators 6.1 and 6.2). The establishment of a Center of Excellence and dissemination of innovative adaptation practices foster broader adaptation efforts (Outcome 8, Indicator 8.1).

Table 20. Project Objective Aligns With The Results Framework of The Adaptation Fund

Project Objective(s)	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Improve adaptive water, energy, and food (WEF) management capacity	Number of climate change adaptation champions identified and appointed for each relevant stakeholders	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	$44,787
	Number of district-level working group for climate change adaptation established for spearheading climate change adaptation efforts in the district	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	$28,404 10.882
	Availability of vulnerability assessment report on climate change adaptation	Outcome 1: Reduced exposure to climate-related hazards and threats	1.1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis	$4,798 782
	Number of representatives of relevant stakeholders participating in technical capacity building	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	$122,081 170.458
	Availability of need assessment report on management instrument	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	$3,950 949
	Number of climate change adaptation management instruments	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	$22,945 843
	Number of villages registered under PROKLIM	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	$22,302 20.882
	Availability of village level climate change risks and vulnerability assessment	Outcome 1: Reduced exposure to climate-related hazards and threats	1.1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis	$45,963 20.852
	Number adaptation options identified	Outcome 1: Reduced exposure to climate-related hazards and threats	1.1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis	$21,948 33.662
	Number of action plan	Outcome 5: Increased ecosystem resilience in response to climate change and variability- induced stress	5.1. Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress	$42,083
	Number of household with improved resiliency against flood and improved resiliency on safe access to water and sanitation during drought/dry season	Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	$143,779 125.060
	-Number of plantation areas with improved resiliency aginst flood -Number of plantation areas with sustainable irrigation during drought/long dry season	Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	$118,219 220
	Number of climate information system that rely on renewable energy system	Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	$41,367 366
	Availability of supply chain and market demand on leading commodities and	Outcome 4: Increased adaptive capacity within relevant development sector	4.1. Responsiveness of development sector services to evolving needs from	$11,183 185

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	derivative products	services and infrastructure assets	changing and variable climate	
	-Number of options to improve commodities values -Number of derivatives products with higher value to be added as additional products of farmers -Availability of analysis of efficient commodities distribution	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.2. Percentage of targeted population with sustained climate-resilient alternative livelihoods	~~$~~5,~~790~~792
	-Number of farmers with technical capacity to produce value-added products -Number of farmer with access to tools/machinery to produce derivative products -Availability of tools/machinery to produce derivative products	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1. Percentage of households and communities having more secure access to livelihood assets	~~$~~50,~~188~~190
	Availability of IEC materials and tools design based on local context	Outcome 8: Support the development and diffusion of innovative adaptation practices, tools and technologies	8.1. Innovative adaptation practices are rolled out, scaled up, encouraged and/or accelerated at regional, national and/or subnational level	~~$72,765~~82,831
	Availability of centre of excellence on climate change adaptation in Sigi District	Outcome 8: Support the development and diffusion of innovative adaptation practices, tools and technologies	8.1. Innovative adaptation practices are rolled out, scaled up, encouraged and/or accelerated at regional, national and/or subnational level	~~$30,780~~23,385

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~~130.~~154. The project aims to enhance the capacity of local stakeholders at the district level on WEF Nexus-based climate change adaptation by training district-level stakeholders (Outcome 1.1), developing and operationalizing management instruments (Outcome 1.2), and creating participatory WEF nexus-based adaptation action plans at the village level (Outcome 2.1). Additionally, it seeks to increase economic, social, and livelihood resilience within local communities (Outcome 2.2). The project also focuses on developing and disseminating learning and communication tools for replication (Outcome 3.1) and ensuring that knowledge, lessons learned, and best practices are accessible to the public (Outcome 3.2). The project aligns with several Fund Outputs, including strengthening capacity to disseminate knowledge (Output 3.2), enhancing the capacity of centers and networks to respond to extreme weather events (Output 2.1), fortifying vulnerable sector assets (Output 4.1), bolstering community livelihood strategies (Output 6.1), and promoting viable innovations (Output 8.1).

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Table 21. Project Outcome Aligns With The Results Framework of The Adaptation Fund

Project Outcome(s)	Project Outcome Indicator(s)	Fund Output	Fund Output Indicator	Grant Amount (USD)
Outcome 1.1. Improved institutional capacity of local stakeholders at district-level on WEF nexus-based climate change adaptation	Number of district-level stakeholders trained on WEF nexus-based climate change adaptation	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.1 No. of technical committees/associations formed to ensure transfer of knowledge	~~$200,135~~2 30,909
Outcome 1.2. Management instruments to support effective implementation of climate change adaptation efforts at Sigi District developed and operationalized	Number of users (OPD, farmers, university, public)	Output 2.1: Strengthened capacity of national and sub-national centers and networks to respond rapidly to extreme weather events	2.1.2 No. of targeted institutions with increased capacity to minimize exposure to climate variability risks (by type, sector and scale)	~~$49,117~~47, 674
Outcome 2.1. Participatory WEF nexus-based adaptation action plan developed & applied at village level	Number of villages developing WEF nexus based adaptation action plans	Output 4.1: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by sector and scale)	~~$413,200~~3 81,193
Outcome 2.2. Increased economic, social, livelihood, resilience in the local community	Number of farmers with increased income due to project intervention	Output 6.1: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.2. Type of income sources for households generated under climate change scenario	~~$~~67,~~162~~16 7
Outcome 3.1. Learning and Communication Tools targeted for replication developed based on Monitoring, Evaluation & Learning (MEL) throughout the process	Availability of IEC materials and tools	Output 8.1: Viable innovations are rolled out, scaled up, encouraged and/or accelerated	8.1.2. No. of key findings on effective, efficient adaptation practices, products and technologies generated	~~$72,765~~82, 831
Outcome 3.2. Disseminated knowledge lesson learned and best practices for further replication by District	Availability of knowledge, lessons learned and best practices of the adaptation projects that is accessible by publics	Output 8.1: Viable innovations are rolled out, scaled up, encouraged and/or accelerated	8.1.2. No. of key findings on effective, efficient adaptation practices, products and technologies generated	~~$30,780~~23, 385

G. Detailed Budget

~~131.~~155. The project has a total budget allocation of $ 833,~~158~~159. The budget is divided among three main components. Component 1 Strengthened enabling environment to support Adaptation policy implementation in Sigi District has a budget of $~~ 249,252~~278,583. This includes enhancing institutional capacity and developing management instruments. Component 2 WEF nexus approach applied to improve the effectiveness of District's Climate Change Adaptation Action Plan has a budget of $~~ 480,361~~448,360, focusing on developing and applying adaptation action plans at the village level. Lastly, Component 3 Center of excellence of climate change adaptation at district level is allocated $~~ 103,545~~106,216 for creating a center of excellence and disseminating knowledge and best practices.

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Table 22. Detailed Budget

Outcome/Output	Activity		Budget (US$)	Total Budget (US$)
Component 1. Strengthened enabling environment to support Adaptation policy implementation in Sigi District				~~$ 249,252~~278,583
Outcome 1.1. Improved institutional capacity of local stakeholders at district-level on WEF nexus-based climate change adaptation			~~$ 200,135~~	230,909
Output 1.1.1. Awareness and understanding of key stakeholders at district level on climate change adaptation based on Water-Energy-Food Nexus is in place	1.1.1.1	~~Activity 1.~~ Establish comprehensive (baseline, mid, endline) understanding of current institutional awareness on WEF Nexus-based climate change adaptation	~~$~~ 26,745	~~$~~ 44,787
	1.1.1.2	~~Activity 2.~~ Develop a detailed awareness programme on WEF Nexus-based Climate Change Adaptation	~~$~~ 4,400	
	1.1.1.3	~~Activity 3.~~ Workshop on climate change adaptation - WEF approach	~~$~~ 7,~~609~~610	
	1.1.1.4	~~Activity 4.~~ Awareness Video/Photo/Poster competition among relevant district-level stakeholders and for public on WEF Nexus-based Climate Change Adaptation	~~$~~ 6,~~033~~ 032	
Output 1.1.2. A district-level working group for climate change adaptation established under the district multistakeholder forum	1.1.2.1	~~Activity 1.~~ Brainstorming on the idea of working group establishment (role, function, workplan of draft working group)	~~$ 25,251~~ 7,650	~~$ 28,484~~10,882
	1.1.2.2	~~Activity 2.~~ Drafting decision letter (SK) of Working Group	~~$~~ 1,~~617~~ 616	
	1.1.2.3	~~Activity 3.~~ Launching working group (discuss and agree on working group work plan)	~~$~~ 1,~~617~~ 616	
Output 1.1.3. Climate change vulnerability assessment using district level data and indicators and climate modeling based on water-energy-food (WEF) nexus approach	1.1.3.1	~~Activity 1.~~ Climate change vulnerability assessment through secondary data and FGD	~~$~~ 2,~~950~~ 949	~~$~~ 4,~~783~~ 782
	1.1.3.2	~~Activity 2.~~ Develop climate change vulnerability assessment report	~~$~~ 1,833	
Output 1.1.4. Tailored technical capacity building on climate change adaptation for relevant stakeholders facilitated	1.1.4.1	~~Activity 1.~~ Conducting need Assessment on Climate Change Adaptation Preparedness	~~$~~ 3,~~477~~ 476	~~$ 122,081~~ 170,458
	1.1.4.2	~~Activity 2.~~ Develop a detailed training program and set of modules of technical training, including women and vulnerable groups	~~$ 8,000~~ 12,265	
	1.1.4.3	~~Activity 3.~~ Workshop and technical training on climate change adaptation, including women and vulnerable groups	~~$ 30,760~~ 47,913	
	1.1.4.4	~~Activity 4.~~ Technical assistance and facilitation for background study for Climate Change Adaptation Action Plan (RAD-API)	~~$ 79,844~~ 106,804	
Outcome 1.2. Management instruments to support effective implementation of climate change adaptation efforts at Sigi District developed and operationalized			~~$ 49,117~~	47,674
Output 1.2.1. Need assessment analysis of effective management instrument available	1.2.1.1	~~Activity 1.~~ Initial assessment with interview and desk-analysis	~~$~~ 2,233	~~$~~ 3,~~950~~ 949
	1.2.1.2	~~Activity 2.~~ Consultation with Focus group discussions on management instruments with multistakeholders platform	~~$~~ 1,~~717~~ 716	
Output 1.2.2. Climate change adaptation management instrument developed	1.2.2.1	~~Activity 1.~~ Design management instrument	~~$~~ 10,~~285~~ 284	~~$~~ 22,~~845~~843
	1.2.2.2	~~Activity 2.~~ Development of management instruments	~~$~~ 1,~~717~~ 716	
	1.2.2.3	~~Activity 3.~~ User trial test of management instruments	~~$~~ 900	
	1.2.2.4	~~Activity 4.~~ Dissemination & training of management instrument	~~$~~ 1,783	
	1.2.2.5	~~Activity 5.~~ Climate awareness goes to schools (trainings)	~~$~~ 8,160	

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Output 1.2.3. Target villages are facilitated to prepare PROKLIM registration	1.2.3.1	~~Activity 1.~~ Workshop, training, and socialization PROKLIM at village level	~~$~~ 10,~~302~~301	~~$ 22,322~~20,882
	1.2.3.2	~~Activity 2.~~ PROKLIM registry assistance with enumerators	~~$ 12,020~~ 10,581	
Outcome/Output	**Activity**		**Budget (US$)**	**~~Outcome/Output~~Total Budget (US$)**
Component 2. WEF nexus approach applied to improve the effectiveness of District's Climate Change Adaptation Action Plan				**~~$ 480,361~~448,360**
Outcome 2.1. Participatory WEF nexus-based adaptation action plan developed & applied at village level			**~~$ 413,200~~**	**~~381,193~~**
Output 2.1.1. Village level climate change risks and vulnerability assessment developed	2.1.1.1	~~Activity 1.~~ Focus grup discussions (preparedness and awareness on climate change risk and vulnerability assessment)	~~$~~ 5,~~520~~ 519	~~$ 45,853~~ 20,852
	2.1.1.2	~~Activity 2.~~ Develop rapid assessment on climate change risks and vulnerability, including women and vulnerable groups	~~$ 36~~11,200	
	2.1.1.3	~~Activity 3.~~ Diseminate result of rapid assessment to all village stakeholders	~~$~~ 4,133	
Output 2.1.2. WEF nexus-based adaptation options indentified by target group (vulnerable groups, farmers, village government staffs)	2.1.2.1	~~Activity 1.~~ Develop pre-material on adaptation options	~~$~~ 8,568	~~$ 21,948~~ 33,662
	2.1.2.2	~~Activity 2.~~ Facilitate FGDs on adaptation options	~~$~~ 6,~~813~~ 814	
	2.1.2.3	~~Activity 3.~~ Develop IEC materials of identifed adaption options (WEF Nexus)	~~$~~ 6,567	
	2.1.2.4	Monitoring and evaluation of climate adaptation actions	11,713	
Output 2.1.3. Village WEF nexus-based adaptation action plan developed	2.1.3.1	~~Activity 1.~~ Develop action plan	~~$~~ 16,000	~~$~~ 42,033
	2.1.3.2	~~Activity 2.~~ Support village to propose identified actions to be financed by village fund and by Adaptation Fund	~~$~~ 22,000	
	2.1.3.3	~~Activity 3.~~ Workshop on viillage climate adaptation plan	~~$~~ 4,033	
Output 2.1.4. Village-based adaptive water management and physical infrastructure development	2.1.4.1	~~Activity 1.~~ Strengthen water adaptive management village task force	~~$~~ 10,320	~~$ 143,779~~125,060
	2.1.4.2	~~Activity 2.~~ WASH household-based e-Survey	~~$ 40,630~~21,910	
	2.1.4.3	~~Activity 3. Develop activity plan for~~Conduct public consultation and develop adaptive water management~~, physical construction, operation & maintenance, and monitoring/evaluation~~ plan	~~$~~ 20,895	
	2.1.4.4	~~Activity 4.~~ Evidence-based planning and budgeting for village WASH program	~~$~~ 4,360	
	2.1.4.5	~~Activity 5.~~ Physical construction of adaptive water infrastructure (NbS knock-down levee along the river 500 meter)	~~$~~ 29,031	
	2.1.4.6	~~Activity 6.~~ Physical construction of adaptive water infrastructure (ponds)	~~$~~ 14,170	
	2.1.4.7	~~Activity 7.~~ Physical construction of adaptive water infrastructure (mini nature-based water treatment plant & distribution pipe)	~~$~~ 10,453	
	2.1.4.8	~~Activity 8.~~ Physical construction of adaptive water infrastructure (household water and sanitation facility)	~~$~~ 13,~~920~~ 921	
Output 2.1.5. Village-based adaptive agriculture management and physical infrastructure development	2.1.5.1	~~Activity 1.~~ Strengthen adaptive Agriculture management village task force (Kelompok Tani)	~~$~~ 11,372	~~$~~ 118,~~219~~ 220
	2.1.5.2	~~Activity 2.~~ Survey and identify of flood prone on agriculture areas (physical) and cultural heritage (social)	~~$~~ 20,~~893~~ 894	

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	2.1.5.3	~~Activity 3.~~ Develop activity plan for adaptive agriculture management & physical infrastructure	~~$~~ 1,227	
	2.1.5.4	~~Activity 4.~~ Build demonstration plot nursery to produce seedlings for the establishment of plantations	~~$~~ 31,927	
	2.1.5.5	~~Activity 5.~~ Improvement/construction of agriculture irrigation/drainage system with implemented safety protocols	~~$~~ 17,400	
	2.1.5.6	~~Activity 6. Flood~~Biogeographic assessment for natural food plain development and restoration	~~$~~ 20,000	
	2.1.5.7	~~Activity 7.~~ Retention well construction in flood prone areas of plantations while safeguarding local wisdom/value	~~$~~ 15,400	
Output 2.1.6. Village-based adaptive renewable energy management	2.1.6.1	~~Activity 1.~~ Development module of efficiency and energy management	~~$~~ 1,667	~~$~~ 41,~~367~~ 366
	2.1.6.2	~~Activity 2.~~ Solar PV installment for climate impact information	~~$~~ 6,667	
	2.1.6.3	~~Activity 3.~~ Climate IoT tools and software development for supporting sustainable agriculture	~~$~~ 15,000	
	2.1.6.4	~~Activity 4.~~ Improving internet access for climate resilience information	~~$~~ 4,~~987~~ 986	
	2.1.6.5	~~Activity 5.~~ Capacity building to build the technical skills related to the installation and use of solar PV systems and climate IoT tools	~~$~~ 4,793	
	2.1.6.6	~~Activity 6.~~ Conducting FGD for Community-driven climate resilience information sharing	~~$~~ 3,460	
	2.1.6.7	~~Activity 7.~~ Conducting for Workshop Community awareness on energy efficiency and management	~~$~~ 4,793	
Outcome 2.2. Increased economic, social, livelihood, resilience in the local community				~~$~~ **67,**~~162~~ ~~167~~
Output 2.2.1. Supply chain mapping of leading commodities and commodities development plan is available	2.2.1.1	~~Activity 1.~~ Conduct supply chain analysis on leading commodities	~~$~~ 7,180	~~$~~ 11,~~183~~ 185
	2.2.1.2	~~Activity 2.~~ Conduct market demand and distribution analysis on leading commodities and derivative products	~~$~~ 2,~~193~~ 194	
	2.2.1.3	~~Activity 3.~~ Develop sustainable commodities development plan	~~$~~ 1,~~810~~ 811	
Output 2.2.2. Options to improve leading commodities value through its derivative products are identified and implemented by farmers	2.2.2.1	~~Activity 1.~~ Identification of preferable derivative products to be further developed to increase income of farmers	~~$~~ 3,~~983~~ 984	~~$~~ 5,~~790~~ 792
	2.2.2.2	~~Activity 2.~~ Conduct identifed derivative products distribution analysis to ensure product reaching the right market at the right time (including identinfying buyers)	~~$~~ 1,~~807~~ 808	
Output 2.2.3. Technical capacity of and tools/machinery for farmers to produce value-added products is strengthened and in place	2.2.3.1	~~Activity 1.~~ Training of trainers for farmers on value-added commodities production	~~$~~ 9,~~195~~ 196	~~$~~ 50,~~188~~ 190
	2.2.3.2	~~Activity 2.~~ Developing appropriate Processing Tools/Machinery/Technology for the farmers (to be granted to Village enterprise/BUMDes)	~~$~~ 36,~~667~~ 666	
	2.2.3.3	~~Activity 3.~~ Training for village enterprises to develop business model e.g. market, distribution, and Return of Investment (RoI)	~~$~~ 3,~~343~~ 345	
	2.2.3.4	~~Activity 4.~~ Workshop on ~~increasing on~~ empowering women and vulnerable groups' resilience (economic, social, livelihood~~, resilience in the local community)~~	~~$~~ 983	
Outcome/Output	**Activity**		**Budget (US$)**	~~**Outcome/Output**~~**Total Budget (US$)**

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Component 3. Center of excellence of climate change adaptation at district level				~~$ 103,545~~ 106,216
Outcome 3.1. Learning and Communication Tools targeted for replication developed based on Monitoring, Evaluation & Learning (MEL) throughout the process			~~$ 72,765~~	82,831
Output 3.1.1. IEC materials and tools design based on local context developed	3.1.1.1	~~Activity 1.~~ Identify local context on adaptation efforts for designing IEC materials and tools	~~$~~ 2,~~987~~ 986	~~$ 72,765~~82,831
	3.1.1.2	~~Activity 2.~~ Developing IEC materials and tools design based on local context and lessons learned from the project	~~$~~ 5,585	
	3.1.1.3	~~Activity 3.~~ Public consultation on the IEC materials and tools	~~$~~ 8,545	
	3.1.1.4	~~Activity 4.~~ Finalization of IEC materials and tools design based on local context	~~$~~ 6,431	
	3.1.1.5	~~Activity 5.~~ Development of project lessons learned	~~$ 12,341~~20,008	
	3.1.1.6	~~Activity 6.~~ Develop communication strategy	~~$~~ 3,333	
	3.1.1.7	~~Activity 7.~~ Create short documentary about community based climate adaptation	~~$ 17~~12,000	
	3.1.1.8	~~Activity 8.~~ Dissemenation of communication product (short documentary)	~~$ 16,542~~23,943	
Outcome 3.2. Disseminated knowledge lesson learned and best practices for further replication by District			~~$ 30,780~~	23,385
Output 3.2.1 Center of excellence digital platform to disseminate knowledge, lessons learned and best practices developed and launched	3.2.1.1	~~Activity 1.~~ Design centre of excellence digital platform	~~$ 21,540~~14,145	~~$ 30,780~~23,385
	3.2.1.2	~~Activity 2.~~ User trial test of the centre of excellence digital platform	~~$~~ 4,~~453~~ 454	
	3.2.1.3	~~Activity 3.~~ Sub national policy dialogue for identification learning and sharing climate adapatation action plan (district and province)	~~$~~ 2,027	
	3.2.1.4	~~Activity 4.~~ Launcing of Sigi District Climate Change Adaptation Centre of Excellence (back-to-back with Closing Ceremony of the Projects)	~~$~~ 2,~~760~~ 759	
Project Activities Cost [IE] (A)				833,159
Project Execution Cost: 9.5% (B)				87,457
Project Manager				40,000
Finance Manager				24,000
M&E Specialist				12,800
Office space Rental and Operations (intenet, electricity) in Sigi				3,200
Local Admin Staff				4,800
Purchase of Laptops and other electronic devices				2,657
Implementing Entity Fee: 8.5% (C)				78,252
Project identification and Development				3,913
Project Implementation and Supervision				58,689
Evaluation and Knowledge Management				15,650

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Total Project Cost (A+B+C)				998,868

H. Disbursement Schedule

156. ~~The project is structured into three main components with a total budget of $998,867, distributed over two years. Component 1, focused on strengthening the enabling environment for adaptation policy implementation, has a total allocation of $249,253, with disbursements $69,167 (Mid-term 1) and $54,137 (Mid-term 2) periods of Year 1; and $89,383 (Mid-term 1) and $36,566 (Mid-term 2) periods of Year 2. Component 2, which applies the Water-Energy-Food (WEF) nexus approach, is the largest with a total budget of $480,361, allocated $91,553 (M1Y1), $196,628 (M2Y1), $155,797 (M1Y1) and $36,383 (M2Y2). Component 3, aiming to establish a center of excellence for climate change adaptation, has a budget of $103,545. The overall project activities, including project execution and implementing entity fees, are budgeted at $833.159, $~~The scheduled dates mark critical phases of the project: April 2025 for initiation and March 2026 for the mid-project review. The project funds comprise $920,616 which includes costs for project activities and execution. Additionally, implementing entity fees are allocated at $78,252.

Table 23. Time-bound Milestones Disbursement Schedule

132. ~~87,457, and $78,252, respectively.~~

Project Objective/Components	Output	Time-bound Milestones Disbursement Schedule per Objective - Cost				
		Year 1		Year 2		Total
		Mid-term 1	Mid-term 2	Mid-term 1	Mid-term 2	

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Component 1. Strengthened enabling environment to support Adaptation policy implementation in Sigi District	Output 1.1.1. Awareness and understanding of key stakeholders at district level on climate change adaptation based on Water-Energy-Food Nexus is in place Output 1.1.2. A district-level working group for climate change adaptation established under the district multistakeholder forum Output 1.1.3. Climate change vulnerability assessment using district level data and indicators and climate modeling based on water-energy-food (WEF) nexus approach Output 1.1.4. Tailored technical capacity building on climate change adaptation for relevant stakeholders facilitated Output 1.2.1. Need assessment analysis of effective management instrument available Output 1.2.2. Climate change adaptation management instrument developed Output 1.2.3. Target villages are facilitated to prepare PROKLIM registration	~~$69,167~~66,895	~~$54,137~~69,463	~~$89,383~~104,707	~~$36,566~~51,896	~~$249,253~~292,961

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Component 2. WEF nexus approach applied to improve the effectiveness of District's Climate Change Adaptation Action Plan	Output 2.1.1. Village level climate change risks and vulnerability assessment developed Output 2.1.2. WEF nexus-based adaptation options identified by target group (vulnerable groups, farmers, village government staffs) Output 2.1.3. Village WEF nexus-based adaptation action plan developed Output 2.1.4. Village-based adaptive water management and physical infrastructure development Output 2.1.5. Village-based adaptive agriculture management and physical infrastructure development Output 2.1.6. Village-based adaptive renewable energy management Output 2.2.1. Supply chain mapping of leading commodities and commodities development plan is available Output 2.2.2. Options to improve leading commodities value through its derivative products are identified and implemented by farmers Output 2.2.3. Technical capacity of and tools/machinery for farmers to produce value-added products is strengthened and in place	~~$91,553~~72,836	~~$196~~171,628	$155,~~797~~800	$36,383	~~$480,361~~436,647	**Formatted:** Font: 9 pt **Formatted:** Font: 9 pt **Formatted:** Font: 9 pt **Formatted:** Font: 9 pt **Formatted:** Font: 9 pt **Formatted:** Font: 9 pt **Formatted:** Font: 9 pt **Formatted:** Font: 9 pt **Formatted:** Font: 9 pt **Formatted:** Font: 9 pt **Formatted:** Font: 9 pt **Formatted:** Font: 9 pt **Formatted:** Font: 9 pt
Component 3. Center of excellence of climate change adaptation at district level	Output 3.1.1. IEC materials and tools design based on local context developed Output 3.2.1 Center of excellence digital platform to disseminate knowledge, lessons learned and best practices developed and launched	~~$41,990~~34,594	$10,885	$2,027	~~$48,643~~56,045	**$103,~~545~~551**	**Formatted:** Font: 9 pt **Formatted:** Font: 9 pt **Formatted:** Font: 9 pt **Formatted:** Font: 9 pt **Formatted:** Font: 9 pt **Formatted:** Font: 9 pt **Formatted:** Font: 9 pt
Project Activities Cost [IE] (A)						**$833,159**	
Project Execution Cost: 9.5% (B)						**$87,~~458~~457**	**Formatted:** Font: 9 pt, Font color: Custom Color(RGB(53,53,53))
Implementing Entity Fee: 8.5% (C)						**$78,252**	**Formatted:** Font: 9 pt
Total Project Cost (A+B+C)						**$998,~~869~~868**	**Formatted:** Font: 9 pt **Formatted:** Font: 9 pt

Table 24. Disbursement Schedule

Schedule	Upon Signature of agreement	One Year After Project Start	Total
~~Schedule~~Scheduled Date	April 2025	March 2026	
~~Program Cost~~	~~$464,359~~	~~$368,799~~	~~$833,158~~
Project ~~Execution Cost (PEC)~~Funds	~~$45,058~~470,030	~~$42,400~~450,587	~~$87,458~~920,616
Implementing Entity ~~Fee~~Fees	~~$~~39,126	~~$~~39,126	~~$~~78,252
Total	~~$548,543~~	~~$450,325~~	~~$~~**998,868**

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PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of Endorsement on Behalf of The Government

MINISTRY OF ENVIRONMENT AND FORESTRY
DIRECTORATE GENERAL OF CLIMATE CHANGE

[illegible]

To:
The Adaptation Fund Board
c/o Global Environment Facility
[illegible]
Washington DC 20433, USA

[illegible]


MINISTRY OF ENVIRONMENT AND FORESTRY
DIRECTORATE GENERAL OF CLIMATE CHANGE

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B. Implementing Entity certification[47]

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (President Decree No. 16/2015; P.13/MENLHK/Setjen/OTL.0/1/2016; P.33/MENLHK/Setjen/Kum.1/3/2016; Indonesia Intended Nationally Determined Contribution/INDC; COP 21; Paris Agreement signed by Government of Indonesia; Book and Map of Information System of Vulnerability Index Data (SIDIK); Climate Change Adaptation National Action Plan) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.	
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[47] Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities

ANNEX
- 1

Gender Analysis - Building Resilience District: Case of Sigi District

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Project Background

Sigi District, based on the Index and Vulnerability Data Information System (Sistem Informasi Data Indeks dan Kerentanan/SIDIK), is an area that is quite vulnerable to the impacts of climate change. Based on SIDIK, 66% of the villages are considered to have a moderate vulnerability to climate change. Villages located further from the district capital in the Sigi Biromaru sub-district tend to have a higher vulnerability to climate change.

According to the head of Sigi District Agency for Disaster Management, almost all area of Sigi District is vulnerable to disaster, mainly flood and landslide. Based on the result of the rainfall analysis in the past 37 years, there is an increasing trend in the number of rainy days >50 mm/day (extreme) per year. This indicates that there is a threat of increasing rains with extreme intensity in the future, which would cause floods and landslides that could submerge houses and agricultural land, and damage other public infrastructure, such as roads, fresh water, and electricity.

Sigi District has developed its disaster risk assessment in 2020. The assessment has not covered many types of disasters and will need to be detailed down to be able to provide critical recommendations for mitigation and adaptation strategy. Mitigation and adaptation are the two strategies for addressing climate change. Mitigation is an intervention to reduce the emissions sources or enhance the sinks of greenhouse gasses. Adaptation is an adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities[48].

As climate risks are increasing, the Sigi government should be aware of which risks can be mitigated and which risks are not possible and will need to be approached through an adaptation framework. In terms of adaptation, there are several basic elements as the basis of developing a comprehensive adaptation strategy, which are water and air. Due to the intensive climate variability occurrences in the region, the water cycle in many regions is changing drastically. These changes are impacting the catchment water balance, which further affects the irrigation regime, energy production through hydropower dams, distribution of goods and services through the river networks, and other economic and development activities. In addition, the increasing occurrences of floods and long periods of droughts would be more threatening to the livelihoods of local communities, and business and economic continuity in the region.

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[48]Bruno Locatelli, Climate Change and Forests in the Congo Basin: Synergies between Adaptation and Mitigation: https://www.cifor.org/fileadmin/fileupload/cobam/ENGLISH-Definitions&ConceptualFramework.pdf

Gumbasa	Dolo Selatan
Floods	Floods
Cocoa, coconut, candlenut	Cocoa, coconut

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Based on the context above, this proposal is focused on building a climate resilient district through water-energy-food nexus with Sigi District as the pilot.

Context and relevance
Sigi District faces heightened vulnerability to extreme hydrometeorological events, particularly floods. Deforestation for agriculture and mining exacerbates this vulnerability. The significant 2018 earthquake, causing soil liquefaction, resulted in 289 fatalities, 116 missing persons, and 807 injuries. Thirteen out of 15 sub-districts experienced severe damage, affecting homes, schools, health facilities, roads, bridges, power grids, irrigation, and telecommunication networks. The Disaster Risk Study (2017-2021) indicated Sigi's overall low preparedness for extreme weather events and other disaster risks.

The earthquake and the COVID-19 pandemic (2020 – 2022) led to widespread unemployment in Sigi, prompting residents to seek work in sectors like mining. Many women became heads of households due to spousal loss, and numerous youths dropped out of school for uncertain jobs. The economic instability also contributed to a rapid increase in the number of persons with disabilities (PWDs). PWDs faced exacerbated challenges during the pandemic, with limited government support and difficulties accessing information. Main income sources for PWDs include subsistence farming, small-scale trading, construction, and sewing. Stigma and limited access to education hinder stable employment for PWDs.

In Sigi, women primarily work in agriculture or labour-intensive jobs. Financial dependence on the main breadwinner limits women's economic engagement. The absence of educational opportunities for women results in minimal participation in socio-economic development, with women often confined to meeting participation quotas. Inter-community conflicts, surprisingly given shared ethnic and religious backgrounds, stem from trivial personal disputes escalating into territorial identity conflicts. Historical records indicate 60 documented conflict incidents in Sigi in 2012, attributed to various factors such as historical settlements, intergenerational traditions, low demands, low employment participation, and misinformation distortion.

Sigi confronts a multifaceted array of challenges, encompassing natural disasters, economic instability, marginalization of vulnerable groups, and inter-community conflicts. Implementing the project requires a holistic, sustainable approach, integrating community empowerment, economic development, and conflict resolution strategies.

Assessment objectives
The objective of gender assessment is to:

a. identify gender differences and providing empirical evidence in the form of qualitative and quantitative data.
b. analyse gender roles, activities, needs, and available opportunities and challenges or risks for men and women within the project context.

Field Survey

Field survey was conducted in 13 villages (Pandere, Pakuli Utara, Simoro, Bakubakulu, Bobo, Bunga, Kurnia, Bangga, Sambo, Wisolo, Lewara, Dombu and Wayu). Based on the survey data, an initial gender assessment has been done to identify gender inequalities and the challenges and opportunities to improve gender equality.

Gender Assessment framework: The Social Relation Approach[49]

The Social Relations Approach is a method of analysing existing gender inequalities in the distribution of resources, responsibilities, and power, and for designing policies and programs which enable women to be agents of their own development. The framework uses concepts rather than tools to concentrate on the relationships between people and their relationship to resources and activities - and how these are re-worked through 'institutions' such as the state or the market.

Social relations describe the structural relationships that create and reproduce systemic differences in the positioning of different groups of people: These relationships determine who we are, what our roles and responsibilities are, and what claims we can make; they determine our rights, and the control that we have over our own lives and those of others. Social relations produce cross-cutting inequalities, which ascribe everyone a position in the structure and hierarchy of their society. Gender relations are one type of social relation; others include those of class, race, ethnicity, and so on.

Institutional analysis is required: The underlying causes of gender inequality are not confined to the household and family but are reproduced across a range of institutions, including the international community, the state, and the marketplace. Institutions ensure the production, reinforcement, and reproduction of social relations and thereby create and perpetuate social difference and social inequality. It is useful to think of four key institutional realms - the state, the market, the community, and family.

Social relation approach uses these 5 elements to assist in gender assessment:

1. Rules (How things get done): Institutional behaviour is governed by rules, which may be official and written down. Ask: What is done? How is it done? By whom is it done? Who will benefit?
2. Activities (What is done?): Institutions do things; they try to achieve goals by following their own rules. These activities can be productive, distributive, or regulative. Ask: Who does what? Who gets what? Who can claim what?
3. Resources (What is used and produced?): Institutions also mobilize and distribute resources. These may be human resources (for example, labour, education, and skills), material ones (food, assets, land, or money), or intangible ones (information, political, clout, goodwill, or contacts).

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[49]https://www.equilo.io/gender-analysis-framework-social

4. People (Who is in, who is out, who does what?): Institutions deal with people and are selective about: who they allow in and whom they exclude; who is assigned various resources, tasks, and responsibilities; and who is positioned where in the hierarchy.
5. Power (Who decides, and whose interests are served?): Institutions embody relations of authority and control. Few institutions are egalitarian, even if they profess to be so. The unequal distribution of resources and responsibilities, together with the official and unofficial rules which promote and legitimize this distribution, ensures that some institutional actors have authority and control over others.

Gender Assessment in Sigi and Pilot Villages

Power relation, rules, resources and roles

In many villages in Sigi, the power relation between male and female is highly influenced by the local customary law. While in some villages, such as Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo, gender equality mainstreaming is taking place, the customary law still has high influence over several social aspects. Aspect such as early marriage, family inheritance, land tenure, economic decision within household, access to education and employment are among the most influenced aspects. In general, the male has more power over these aspects.

For example, a woman cannot determine the amount of dowry in a marriage as it must be decided by the head of the tribe or from the male's family[50]. Early marriage is still practiced caused by, among others, the decision of parents to be free of the economic burden and religious reasoning. Another example is the access to land tenure. Based on the survey in 12 villages, in average 30% of woman can own land, but not for their own benefits but rather for the benefit of the family or children. Public participation is also limited due to the general assumption that women cannot contribute much to the discussion. This assumption is built due to the generations of social practice where women are not encouraged to pursue higher education due to their embedded role as the caretaker of domestic matters.

With limited access to knowledge, embedded social role and the influence of the environment, the power relation between male and female in most of the villages, especially those villages that still in pure rural area, has been inequal. In principle, most of the time, women do not have the same access to education, resources, public meetings, land tenure and employment. In several villages such as Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo, women do not have the chance to assume leadership position and their voices are unheard of.

In the six villages of Sigi Regency—Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo—GEDSI issues reveal a strong influence of religion and cultural customs on defining social roles for men and women, particularly evident in Pandere, Pakuli Utara, and Simoro. In Bangga, Sambo, and Wisolo, cultural norms significantly limit women's roles in decision-making during traditional events.

[50]https://kemitraan.or.id/en/publication/talkhow-hari-ham-2023-perempuan-adat-dan-hak-kelola-tanah/

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People with disabilities
There are not many people with disability (PWD) in the pilot village (only Dombu village has 3 PWD and Karunia village has none). Official data on people with disabilities and their livelihoods are limited in Sigi Regency and its sub-districts. Many people with disabilities do not even have regular employment. The main obstacles are social stigma and a lack of access to education and vocational training. This is not only due to physical access barriers. Multi-inequalities are often faced by women with disability or children with disability. Their disadvantages as women and children when coupled with disability has deprived them in severe way from basic access.

Inclusion of PWD needs to be started by raising the awareness of the community leaders that everyone has a voice that must be heard. Being part of vulnerable group should not limit the equal access to many aspects of social life. Access to employment, public participation, decision-making process, and so forth must be provided to the most needed. A change of mindset of the community leaders will be a great help to the change of the status quo. Working with local organizations that has expertise on the inclusion of PWD will help the project to implement its GEDSI interventions in the most effective and efficient way.

Women and environmental – socio – economic risks
In Sigi Regency, women predominantly work in agriculture or as manual labourers. However, in most families, there is significant financial dependence on the primary breadwinner. With a lack of educational opportunities and programs to encourage women's involvement in the environmental – socio - economy, women, so far, play a minor role in the environmental-socio-economic development of their communities.

Active participation by women in the planning and decision-making processes in their village regarding the environmental and social issues is also lacking. Their involvement is mostly limited to meeting participation quotas in strategic forums and is not recognized as a fundamental element in achieving community development goals. Women's contribution simply not recognized due to embedded social assumption that women lack of understanding of the environmental-socio-economic issues. Consequently, political planning outcomes and decision-making processes often fail to meet the genuine needs of the target groups. On the other side, women's lack of education and information have led women less eager to participate in in public participation and to hand over it to their spouse. This situation will further worsen the inequalities if not addressed.

Women's role in agriculture as farmers or manual labourers actually allow women to understand issues from their own perspectives and therefore their own proposed solutions. The main barrier to voice out their perspectives and solutions basically centred around the low self-willingness, reluctancy and social acceptance. Here the local customary law, social perception and possible religious law increase the challenges to maintaining the status quo.

Gender responsive actions
In order to break the cycle of inequalities, there are several initial steps that could be taken:

a. **Raise awareness on environmental-socio-economic issues and opportunities**. Awareness leads to understanding, understanding leads to options, options lead to results. It is important for women and vulnerable group to understand the issues and how they think about the issues.
b. **Ensuring that all voices are heard of**. Environmental and social issues and impact should be discussed with everyone. If the situation is not possible using public participation, individual approach, or segregated meetings for male and female can be organized at the suitable time for each group.
c. **Negotiating power relation**. Basic life access such as education, training and employment, health, and land tenure are to be promoted to the social system. Strategic approach to those who have the power to change the rule of the game must be developed and implemented.
d. **Showcasing lessons from other communities**. Other communities often speak the same frequency with other communities from another village in the same region. Best practices from other villages nearby can help to increase the probability of acceptance by local leaders and the community. However, this step is not possible if the conflict between village is high, which is the case in several regions of Sigi District.

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In the case of the pilot villages–Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo–, it is important to take the first two steps (a & b) to show to the communities and key stakeholder that hearing everyone's voice and inputs will help to provide better understanding of situation related to the environmental-socio-economic issues and also the alternative solutions from different perspectives. These alternatives solutions can be considered as options that could lead to results. The more options the more possibility of results. This is better than having only the same options over and over again.

The first to steps (a & b) shall not be conducted without proper mapping of the vulnerable groups. Vulnerable groups must be identified based on sex, age, accessibility, race and other category that could help for information sharing without any concern. Once identified, the method to facilitate discussion can be arranged.

As each individual in each category has his/her own interests and thinking, it is suggested to start the facilitation by identifying shared risks, goals and opportunity to bring the group together. This is always the most effective way to guide the discussion away from contentious discussions and more to a collaborative discussion.

Table 1. Gender Assessment and Analysis

Project Components	Gender Risks	Proposed Risk Mitigations	Gender mainstreaming expected results	Benefit
Component 1. Strengthened enabling environment to support Adaptation policy implementation in Sigi District	Data and indicators are not dissagregated or dissagregated in a very limited way	Dissagregated data and indicators to be used in the vulnerability assessment and climate modeling	Dissagregated data and indicators and climate modeling is gender responsive	Provides a data-driven foundation for informed decision-making, ensuring targeted and effective adaptation measures.

	Number of vulnerable group representation does not meet the requirement (at least 30%)	Identify and anticipate any possible barriers thath will prevent participation of the vulnerable groups	Representation of vulnerable groups (women and people with special needs) in the training sessions	Enhances the skills and knowledge of stakeholders, empowering them to implement adaptation strategies effectively and sustainably.
	Climate change adaptation management instrument is not gender sensitive/responsive by design	1. Develop and apply gender sensitive/responsive and inclusive management instrument development guideline 2. Develop a gender sensitive/responsive and inclusive checklist to ensure management instrument is developed	Gender responsive climate change adaptation management instrument	Equips the district with structured tools and frameworks to monitor, evaluate, and improve climate adaptation efforts over time.
Component 2. WEF nexus approach applied to improve the effectiveness of District's Climate Change Adaptation Action Plan	Climate change risks and vulnerability assessment are not gender sensitive/responsive by design		Gender sensitive/responsive climate change risks and vulnerability assessment	Strengthens local resilience by identifying specific risks and vulnerabilities, allowing for targeted adaptation strategies at the village level.
	Technical capacity assistance and developed tools/machinery is not gender sensitive/responsive and inclusive	1. The design of all processes in delivering a technical capacity assistance must be reviewed and approved by gender specialist 2. Tools/machinery development design must be reviewed and receive approval from gender specialist before finalised and fully developed	Gender sensitive/responsive technical capacity and tools/machinery for all groups (especially vulnerable groups)	Increases economic opportunities for farmers by enabling value-added production, enhancing livelihoods, and promoting sustainable agricultural practices.
Component 3. Center of excellence of climate change adaptation at district level	Developed IEC materials are not gender sensitive/responsive and inclusive by design	Both IEC materials development design and CoE development must be reviewed and receive approval from gender specialist before finalised and fully developed	Gender sensitive/responsive IEC materials and tools design based on local context developed	Ensures effective dissemination of climate adaptation knowledge tailored to local needs, enhancing public awareness and engagement.
	Developed Centre of Excellence digital platform is not gender sensitive/responsive and inclusive by design		Gender sensitive/responsive and inclusive Centre of Excellence digital platform	Provides a centralized knowledge hub to facilitate continuous learning, collaboration, and replication of best practices across different communities.

GENDER ACTION PLAN

Impact Statement:
Increased WEF security for vulnerable groups in the project through a better access to the planning, budgeting and monitoring process related to WEF climate-resilience adaptation programming.

Outcome Statement:
50% identified vulnerable groups in Sigi District increased their adaptive capacity and resiliency to the WEF climate change impact.

Output Statement:
All vulnerable groups understand and have the rights of access to participate in the planning, budgeting and monitoring process related to WEF climate-resilience adaptation programming.

Table 2. Gender Action Plan

Activities	Indicators	Target	Timeline	Responsibilities	Costs
Identify and anticipate any possible barriers that will prevent participation of the vulnerable groups	1. Availability of gender barriers mapping	1 (one) comprehensive gender barriers mapping available	-Q1 to Q4	- Gender Specialist/Executing entity	Activity 2.1.1.2 (Develop rapid assessment on climate change risks and vulnerability, including women and vulnerable groups): **$11,200**
	2. Availability of solution options for all gender barriers	A comprehensive list of solution options for each gender barriers are identified and or formulated			Activity 2.2.3.4 Workshop on empowering women and vulnerable groups' resilience (economic, social, livelihood): **$983**
	3. Number of vulnerable groups consulted in identifying gender barriers	At least 1 vulnerable group from each category (women, youth group, people with disability, elderly, minor religious group, indigenous group) involved for consultation in identifying gender barriers (inccluding the solution options)			
Gender sensitive/responsive and inclusive stakeholder mapping guidelines to be developed, trained and mainstreamed	1. Availability of gender sensitive/responsive stakeholder mapping guideline	1 (one) Gender sensitive/responsive stakeholder mapping guideline	-Q1 to Q4		Activity 2.1.1.2 (Develop rapid assessment on climate change risks and vulnerability, including women and vulnerable groups): **$11,200**

	2. Number of public consultation on Gender sensitive/responsive stakeholder mapping guideline	At least 1 vulnerable group from each category (women, youth group, people with disability, elderly, minor religious group, indigenous group) involved for consultation in identifying gender barriers (inccluding the solution options)			Activity 2.2.3.4 Workshop on empowering women and vulnerable groups' resilience (economic, social, livelihood): **$983**
	3. Number of relevant government staffs and development partners (NGOs, CSOs, etc) that are trained on gender sensitive/responsive stakeholder mapping guideline	At least 2 of each relevant government agencies and development partners are trained in using gender sensitive/responsive stakeholder mapping guideline			
Development, training, and mainstreaming of gender sensitive/responsive and inclusive management instrument and risk and vulnerability assessment guidelines	1. Availability of gender-sensitive/responsive management instrument development guideline and risk and vulnerability assessment guideline	1 (one) gender-sensitive/responsive management instrument development guideline and 1 (one) gender-sensitive/responsive risk and vulnerability assessment guideline	-Q4 to Q7		Activity 1.1.4.2 Develop a detailed training program and set of modules of technical training, including women and vulnerable groups, leads by Gender Specialist (all guidelines development, consultations, and training): **$5,600**
	2. Number of public consultations on the development of guidelines	At least 1 vulnerable group from each category (women, youth groups, people with disabilities, elderly, minor religious groups, indigenous groups) involved in the consultation process			Activity 2.2.3.4 Workshop on empowering women and vulnerable groups' resilience (economic, social, livelihood): **$983**
	3. Number of relevant government staff and development partners (NGOs, CSOs, etc.) trained on the guidelines	At least 2 representatives from each relevant government agency and development partner trained in using the guidelines			

ANNEX 2

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)
Building Climate Resilient District in Indonesia: Case of Sigi District

Introduction

The Consortium KOLABORASI is leading the preparation and implementation of the project titled "Building Climate Resilient Districts in Indonesia: Case of Sigi District," which has been proposed for funding through the Adaptation Fund. As part of the funding requirements, all projects must align with the Adaptation Fund Environmental and Social Policy to ensure that environmental and social risks are effectively managed. This policy serves as a framework to guide project implementers in identifying potential risks and impacts, setting clear principles, guidelines, and procedures to assess, prevent, minimize, mitigate, and, where necessary, offset any adverse environmental and social consequences. Additionally, the policy aims to maximize the project's positive contributions and opportunities for the targeted communities.

The project's overarching goal is to enhance the resilience of the Sigi District—both economically, socially, and environmentally—against the negative impacts of climate change. Given the district's vulnerability to climate-induced challenges such as extreme weather events, resource scarcity, and ecosystem degradation, the project focuses on three key components: (1) formulating climate adaptation policies that align with national and local development strategies; (2) implementing the Water-Energy-Food (WEF) nexus approach, ensuring sustainable resource management and interconnectivity between these sectors; and (3) establishing a Center of Excellence, which will serve as a knowledge hub for climate resilience best practices and capacity-building initiatives.

To comply with the Adaptation Fund Environmental and Social Policy, a self-screening process was conducted to evaluate project activities against established environmental and social safeguard principles. This screening aims to proactively identify risks, ensuring that adequate safeguard instruments are in place to address potential environmental and social challenges. The process takes into consideration various criteria, such as environmental sustainability, social inclusion, human rights, gender equality, and stakeholder engagement. These principles guide the project's design and implementation to ensure that all activities contribute positively while avoiding or minimizing any negative effects.

The screening results indicated that one of the Adaptation Fund's environmental and social principles is particularly relevant to the project and requires further attention. This finding underscores the importance of a comprehensive safeguard strategy that includes risk assessments, impact mitigation measures, and contingency planning.

The project team will work closely with local stakeholders, including government agencies, civil society organizations, and community representatives, to develop and implement targeted safeguards that align with local context and priorities.

The implementation of robust environmental and social safeguards is crucial to achieving the project's objectives while ensuring long-term sustainability and inclusivity. The Consortium KOLABORASI remains committed to integrating best practices in climate adaptation, fostering local ownership, and strengthening institutional capacities to build a climate-resilient Sigi District. By aligning with the Adaptation Fund's policies, the project aims to serve as a model for other climate resilience initiatives in Indonesia, contributing to national and global efforts in addressing climate change challenges.

Self-screening of project activities against the Adaptation Fund Environmental and Social Policy identifies 1 principle as being applicable to this standard and requiring further attention. Below are the screening results of project activities on potential environmental and social impact and risks, based on the checklist of the Adaptation Fund Environmental and Social Principles.

Table 1. Checklist of Environmental and Social Principles

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law	V	
Access and Equity	V	
Marginalized and Vulnerable Groups	V	
Human Rights	V	
Gender Equality and Women's Empowerment	V	
Core Labour Rights	V	
Indigenous Peoples	V	
Involuntary Resettlement	V	
Protection of Natural Habitats	V	
Conservation of Biological Diversity	V	
Climate Change	V	
Pollution Prevention and Resource Efficiency	V	
Public Health	V	
Physical and Cultural Heritage	V	
Lands and Soil Conservation		V

The project is categorized as **Category B** under the Adaptation Fund's Risk Categorization. This classification is Based on direct discussions, field surveys, and

assessments in Sigi District involving key stakeholders and vulnerable groups. Based on these activities, the project's potential risks are localized, small-scale, reversible, and manageable. The project's components such as adaptation policy formulation, WEF nexus implementation, and establishing center of excellence may cause environmental and social risks. Moreover, the six targeted villages (Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo) have distinct socio-physical characteristics, such as limited inclusive infrastructure and vulnerable populations potentially increasing risks. However, comprehensive mitigation strategies have been developed, ensuring that any potential risks during implementation are minimized. These strategies aim to uphold environmental and social safeguards, guaranteeing implement sustainable and inclusive adaptation actions.

The table below describes fully assessment of the project using the Environmental and Social Management Plan:

Table 2. Environmental and Social Management Plan

Risk and Risk Rating	Mitigation Measures	Cost Estimate	Timeline
Compliance with the Law			

The project complies with Indonesia's sustainable development commitments, such as the Nationally Determined Contributions (NDC) and the National Action Plans for Climate Change Adaptation (RAN-API) along with Ministry of Environment and Forestry Regulation No. 33/2016 on Climate Change Adaptation. The project aligns with Presidential Regulation No. 98/2021, supporting carbon credit implementation to reduce GHG emissions and achieve NDC targets, while enhancing ecological resilience through WEF nexus interventions in Sigi District. **(Risk: Negligible)** In synergy with the National Long-Term Development Plan (Rencana Pembangunan Jangka Panjang Nasional [RPJPN]) 2025–2045 and the Sigi District's Medium-Term Development Plan (Rencana Pembangunan Jangka Menengah Daerah [RPJMD]) 2021–2026, the project supports ecological resilience and sustainable agriculture addressing climate change impacts. Regionally, the project aligns with Regional Regulation 4/2019 on Green Sigi specifically Article 16 which mandates climate adaptation action plans. The project also follows Law No. 32/2009 and Government Regulation No. 22/2021 ensuring environmental protection and sustainable resource use during implementation. **(Risk: Negligible)** The project complies with gender equality, disability and social inclusion (GEDSI) laws, such as Presidential Instruction 9/2000 on Gender Mainstreaming and Law No. 8/2016 on People with Disabilities by engaging vulnerable groups, including farmers, women, youth, elderly, and people with disabilities. **(Risk: Negligible)** The project further complies with Law No. 11/2020 on Job Creation promoting sustainable livelihoods and Government Regulation No.12/2019 on Regional Financial Management ensuring efficient regional financial management for project activities. **(Risk: Negligible)**	No specific mitigation measure	Not applicable	-
Access and Equity			
Based on the assessment, there are no significant risks related to access and equity. Potential challenges, such as infrastructure accessibility and the distribution of resources within the community, can be effectively managed through well-planned stakeholder engagement, capacity-building efforts, and inclusive distribution mechanisms. The project is designed to ensure equitable access for all, including vulnerable groups, by facilitating collaboration with local stakeholders and implementing strategies that address potential barriers. **(Risk: Negligible)**	No specific mitigation measure	Not applicable	-

Marginalized and Vulnerable Groups			
The project risks excluding meaningful participation from vulnerable groups, particularly individuals with disabilities in Sambo Village. In this village, there are people with disabilities who face various barriers, such as the lack of guiding blocks for visually impaired people, limited availability of sign language interpreters for those with hearing impairments, and physically inaccessible venues (e.g., narrow entrances, no ramps). **(Risk: Low)**	-Identify and anticipate any possible barriers that will prevent participation of the vulnerable groups. -Gender sensitive/responsive and inclusive stakeholder mapping guidelines to be developed, trained and mainstreamed. -Development, training, and mainstreaming of gender sensitive/responsive and inclusive management instrument and risk and vulnerability assessment guidelines.	The mitigation measure cost will be Integrated in project activities: -2.1.1.2 (Develop rapid assessment on climate change risks and vulnerability, including women and vulnerable groups) -1.1.4.2 (Develop a detailed training program and set of modules of technical training, including women and vulnerable groups) -2.2.3.4 (Workshop on empowering women and vulnerable groups' resilience (economic, social, livelihood))	-Q1 to Q4 -Q1 to Q4 -Q4 to Q7
Human Rights			
The project does not pose any potential negative impact on human rights. The project aims to enhance the resilience of communities in six villages—Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo—through adaptation policy formulation, WEF nexus implementation, and the establishment of the center of excellence. During implementation, the project ensures that human rights principles are upheld in all activities. Therefore, the project will strengthen the human rights and capacities of the villagers. **(Risk: Negligible)**	No specific mitigation measure	Not applicable	-
Gender Equality and Women's Empowerment			
Gender equality and women's empowerment are crucial issues from the district level to the village level and this is not limited to the project site. This is due to the lack of awareness and understanding of gender equality which limits the opportunities provided to women. The risks include limited involvement of women because there are few women in leadership positions at the village level, low representation of women in leadership positions within village governments may limit their influence in decision-making processes, potentially hindering gender-inclusive implementation of the WEF nexus, women may face barriers to meaningful involvement in the establishment of the center of excellence due to a double burden of childcare and agricultural responsibilities. **(Risk: Low)**	-Identify and anticipate any possible barriers that will prevent participation of the vulnerable groups. -Gender sensitive/responsive and inclusive stakeholder mapping guidelines to be developed, trained and mainstreamed. -Development, training, and mainstreaming of gender sensitive/responsive and inclusive management instrument and risk and vulnerability assessment guidelines.	The mitigation measure cost will be Integrated in project activities: -2.1.1.2 (Develop rapid assessment on climate change risks and vulnerability, including women and vulnerable groups) -1.1.4.2 (Develop a detailed training program and set of modules of technical training, including women and vulnerable groups) -2.2.3.4 (Workshop on empowering women and vulnerable groups'	-Q1 to Q4 -Q1 to Q4 -Q4 to Q7

		resilience (economic, social, livelihood))	
Core Labour Rights			
The project has low potential risks to core labor rights. These risks include the creation of jobs that may not employ local workers and, if they do, may result in work accidents, particularly those related to the construction of WEF infrastructure. **(Risk: Low)**	-Provide skill-building programs for local workers. -Conduct pre-construction safety assessments and enforce safety protocols (e.g., personel protective equipment [PPE]).	The mitigation measure cost will be Integrated in project activities: -2.1.6.5 (Capacity building to build the technical skills related to the installation and use of solar PV systems and climate IoT tools) -2.1.5.5 (Improvement/construction of agriculture irrigation/drainage system with implemented safety protocols)	-Q4 to Q6 -Q5 to Q7
Indigenous Peoples			
The project does not pose potential risks to indigenous peoples. This is because based on public consultation, field surveys, and in-depth interviews with village community representatives, it was identified that there were no indigenous peoples in Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo villages. **(Risk: Negligible)**	No specific mitigation measure	Not applicable	-
Involuntary Resettlement			
The project does not pose a risk of involuntary resettlement. The implementation of the project which includes the formulation of adaptation policies, the implementation of the WEF nexus, and the establishment of the center of excellence does not require significant land. Therefore, the project does not result in land use change, conversion of residential land to project land, or even involuntary resettlement. **(Risk: Negligible)**	No specific mitigation measure	Not applicable	-

Protection of Natural Habitats			
The project has no potential risks to the protection of natural habitats. This is because based on public consultations, field surveys, and in-depth interviews with village community representatives, it was identified that the 6 targeted villages as the project location does not overlap with protected areas. **(Risk: Negligible)**	No specific mitigation measure	Not applicable	-
Conservation of Biological Diversity			
The project has low potential risks to conservation of biological diversity. The implementation of the project, especially the construction of WEF infrastructures and the development of the supply chain of the intervened commodities may disrupt biodiversity conservation. This is because the targeted villages as the project location, such as Pandere, Pakuli Utara, and Simoro villages have buffer forest areas that have high biodiversity. **(Risk: Low)**	-Conduct biodiversity impact assessments. -Design construction to minimize habitat disruption. -Implement reforestation initiatives where necessary.	The mitigation measure cost will be Integrated in project activities: -2.1.5.6 (Biogeographic assessment for natural food plain development and restoration)	-Q5 to Q7
Climate Change			
The project has no potential to cause climate change. This is because the implementation of this project does not release large amounts of GHG emissions that can worsen current climate change. **(Risk: Negligible)**	No specific mitigation measure	Not applicable	-
Pollution Prevention and Resource Efficiency			
The project is committed to minimizing potential risks to pollution prevention and resource efficiency. To ensure this, a pact of integrity will be established prior to the project's commencement. This pact will outline the project's strong commitment to preventing pollution and optimizing resource use during its implementation. Through this proactive measure, all project stakeholders will adhere to environmentally responsible practices, ensuring that activities are conducted sustainably and align with the pollution prevention and resource efficiency. **(Risk: Negligible)**	No specific mitigation measure	Not applicable	-
Public Health			
The project has no potential risks on public health. The project aims to enhance the resilience of communities in Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo villages, through the formulation of adaptation policies, implementation of the WEF nexus, and the establishment of the center of excellence. These activities will increase community health resilience to diseases caused by climate change. **(Risk: Negligible)**	No specific mitigation measure	Not applicable	-
Physical and Cultural Heritage			

This project has the potential risks to physical and cultural heritage. This is because the community of Pandere, Pakuli Utara, Simoro, Bangga, Sambo, and Wisolo villages holds strong beliefs in symbols that are part of their ancestral cultural heritage. The implementation of the project, especially the construction of WEF infrastructures may cause conflict with the location of these cultural symbols. **(Risk: Low)**	-Identify and map cultural heritage sites in advance. -Ensure construction to avoid damage to significant cultural sites.	The mitigation measure cost will be Integrated in project activities: -2.1.5.2 (Survey and identify of flood prone on agriculture areas (physical) and cultural heritage (social))	-Q5 to Q7
	-Coordinate with cultural heritage agencies. -Comply with regulations on cultural heritage (e.g., Law No. 11/2010 on Cultural Heritage).	The mitigation measure cost will be Integrated in project activities: -2.1.5.7 (Retention well construction in flood prone areas of plantations while safeguarding local wisdom/value)	-Q5 to Q7
Lands and Soil Conservation			
The project may potentially disrupt lands and soil conservation. This is due to the project involving the construction of WEF infrastructures, such as the NbS knock-down levee (500 meters), ponds, mini nature-based water treatment plants with distribution pipes, household water and sanitation facilities, solar PV installment, and agriculture irrigation/drainage system. These activities could lead to minor land use changes, such as converting green spaces into built-up areas. **(Risk: Low)**	-Notify/inform the community in advance about construction schedules and potential land impacts. -Implement Nature-Based Solutions (NbS) to enhance sustainable water management.	The mitigation measure cost will be Integrated in project activities: -2.1.4.3 (Conduct public consultation and develop adaptive water management plan) -2.1.4.5 (Physical construction of adaptive water infrastructure (NbS knock-down levee along the river 500 meter))	-Q2 to Q5 -Q2 to Q5

ANNEX 3

Budget Notes

Outcome/Output	Activity		Budget (US$)	Budget Notes
Component 1. Strengthened enabling environment to support Adaptation policy implementation in Sigi District				
Outcome 1.1. Improved institutional capacity of local stakeholders at district-level on WEF nexus-based climate change adaptation				
Output 1.1.1. Awareness and understanding of key stakeholders at district level on climate change adaptation based on Water-Energy-Food Nexus is in place	1.1.1.1	Establish comprehensive (baseline, mid, endline) understanding of current institutional awareness on WEF Nexus-based climate change adaptation	26,745	The total budget for establishing a comprehensive understanding of institutional awareness on WEF Nexus-based climate change adaptation is 26,745.00 USD, including 3 packages for a KAP survey and program design (4,000.00 USD), hiring 6 enumerators for 3 villages (900.00 USD), providing local transportation for 6 enumerators in 3 villages (120.00 USD), engaging 1 senior M&E consultant for 3 time periods (1,925.00 USD), and employing 1 administrative consultant for 24 months (19,800.00 USD)."
	1.1.1.2	Develop a detailed awareness programme on WEF Nexus-based Climate Change Adaptation	4,400	The total budget for developing a detailed awareness program on WEF Nexus-based Climate Change Adaptation is 4,400.00 USD, which includes 1 package for research and content development (667.00 USD), 1 package for designing and producing educational materials (1,000.00 USD), facilitator fees for 10 persons over 1 day (667.00 USD), 1 package of stationery for the awareness program (33.00 USD), 1 package for meeting arrangements with 100 participants (2,000.00 USD), and 1 package for creating flyers and posters (33.00 USD).
	1.1.1.3	Workshop on climate change adaptation - WEF approach	7,610	The total budget for the workshop on climate change adaptation using the WEF approach is 7,610.00 USD, covering 1 package for an FGD meeting (2,000.00 USD), 1 package for participant transportation (667.00 USD), facilitator fees for 10 persons over 1 time (667.00 USD), note-taker fees for 1 day (50.00 USD), 1 package of stationery (33.00 USD), and travel to palu for 6 persons for 1 trip (4.026 USD)
	1.1.1.4	Awareness Video/Photo/Poster competition among relevant district-level stakeholders and for public on WEF Nexus-based Climate Change Adaptation	6,032	The budget for the Awareness Video/Photo/Poster competition among district-level stakeholders and the public amounts to 6,032.00 USD, including 1 package of prizes (1,333.00 USD), 1 meeting package for 100 persons (2,000.00 USD), judging panel fees for 4 persons for 1 month (1,333.00 USD), 1 set of sound system and lighting (1,000.00 USD), 1 set of stage equipment (243.00 USD), 1 package of backdrop design (40.00 USD), 1 package of screen projector usage (50.00 USD), and 1 package of flyers and posters (33.00 USD), each conducted 1 time

Output 1.1.2. A district-level working group for climate change adaptation established under the district multistakeholder forum	1.1.2.1	Brainstorming on the idea of working group establishment (role, function, workplan of draft working group)	7,650	The budget for brainstorming on the idea of working group establishment, including roles, functions, and workplan drafting, amounts to 7,650.00 USD, comprising 1 package for Climate Change Working Group consultant fees (1,333.00 USD), 2 facilitators (200.00 USD), 1 note-taker for 1 day (50.00 USD), 1 package of stationery (33.00 USD), 50-person meeting package for brainstorming (1,000.00 USD), 1 package for participant transport (327.00 USD), and 6 persons' travel to Palu (4.707 USD), each conducted 1 time.
	1.1.2.2	Drafting decision letter (SK) of Working Group	1,616	The budget for drafting the decision letter (SK) of the Working Group amounts to 1,616.00 USD, including 2 facilitators for 1 time (200.00 USD), 1 note-taker for 1 day (50.00 USD), 1 package of stationery for 1 time (33.00 USD), 50-person meeting package for 1 time (1,000.00 USD), and transport for 50 participants for 1 time (333.00 USD).
	1.1.2.3	Launching working group (discuss and agree on working group work plan)	1,616	The budget for launching working group (discuss and agree on working group work plan) amounts to 1,616 USD which covers 2 facilitators (200 USD), a note taker fee (50 USD), stationery costs for 1 package (33 USD), a meeting package for 50 participants (1,000 USD), transport for 50 participants (333 USD).
Output 1.1.3. Climate change vulnerability assessment using district level data and indicators and climate modeling based on water-energy-food (WEF) nexus approach	1.1.3.1	Climate change vulnerability assessment through secondary data and FGD	2,949	The total budget for conducting a climate change vulnerability assessment through secondary data and FGD is 2,949 USD. This includes a consultant fee for assessment and report writing (1,333 USD), facilitator fees for 2 facilitators (200 USD), note taker fee (50 USD), stationery (33 USD), meeting package for 50 participants (1,000 USD), and transportation for participants (333 USD).
	1.1.3.2	Develop climate change vulnerability assessment report	1,833	The total budget for developing a climate change vulnerability assessment report is 1,833 USD, which covers the design and layout of the module (1,333 USD) and printing of 50 copies (500 USD).
Output 1.1.4. Tailored technical capacity building on climate change adaptation for relevant stakeholders facilitated	1.1.4.1	Conducting need Assessment on Climate Change Adaptation Preparedness	3,476	The total budget for conducting the need assessment on Climate Change Adaptation Preparedness is 3,476 USD. This includes the consultant fee for the need assessment (1,333 USD), local transportation for 6 persons across 6 villages (523 USD), enumerator fees for 6 persons in 6 villages (1,320 USD), and merchandise for participants (300 USD
	1.1.4.2	Develop a detailed training program and set of modules of technical training, including women and vulnerable groups	12,265	The total budget allocated for developing a detailed training program and modules is 12,265 USD. This includes consultant fees for water-food-energy adaptation (1,333 USD), climate hazard and environmental risk (1,333 USD), gender specialist (5,600 USD), policy development (1,333 USD), socio-economic resilience (1,333 USD), and youth communication for climate action (1,333 USD).
	1.1.4.3	Workshop and technical training on climate change adaptation, including women and vulnerable groups	47,913	The total budget for workshops and technical training is 47,913 USD. This includes printing modules for 70 participants (1,400 USD), resource person fees for 3 persons over 2 sessions (1,800 USD), meeting packages (5,600 USD), transport for participants (2,800 USD), meeting kits (840 USD), stationery (200 USD), note taker fees (300 USD), moderator fees (600 USD), Travel to Palu for xx persons (5.920 USD) , banners (160 USD), module design and layout (1,333 USD), and consultant fees for an Environment Advisor (17,600 USD) and an Adaptation Expert Specialist (9,360 USD).
	1.1.4.4	Technical assistance and facilitation for background study for Climate Change Adaptation Action Plan	106,804	The total budget for providing technical assistance and facilitation for the background study is 106,804 USD. This includes consultant fees for Adaptation Action Plan (14,376 USD), WEF Nexus/Community Development Specialist (11,000 USD), Climate Adaptation Officer (11,000 USD), District

		(RAD-API)		Facilitator (9,533 USD), Village Facilitators for 3 persons (22,000 USD), Travel to Palu for 3 perseons (4.535 USD) , consultant fees for Administration (11,000 USD), Technical Assistant (14,000 USD), and Adaptation Expert Specialist (9,360 USD).
Outcome 1.2. Management instruments to support effective implementation of climate change adaptation efforts at Sigi District developed and operationalized				
Output 1.2.1. Need assessment analysis of effective management instrument available	1.2.1.1	Initial assessment with interview and desk-analysis	2,233	The total budget for conducting an initial assessment through interviews and desk analysis is 2,233 USD, which includes a consultant fee for developing questionnaires, analyzing data, and report writing (1,333 USD), enumerator fees for 3 persons over 5 days (750 USD), and transportation for data collection (150 USD).
	1.2.1.2	Consultation with Focus group discussions on management instruments with multistakeholders platform	1,716	The total budget for conducting FGDs is 1,716 USD, which includes facilitator fees for 2 persons (200 USD), note taker fees (50 USD), stationery (33 USD), meeting kits for 50 participants (100 USD), meeting packages for 50 participants (1,000 USD), and participant transport costs (333 USD).
Output 1.2.2. Climate change adaptation management instrument developed	1.2.2.1	Design management instrument	10,284	The total budget for designing a management instrument is 10,284 USD, which includes consultant fees for designing and developing management instruments and curriculum (4,667 USD), facilitator fees for 2 persons (200 USD), note taker fees (50 USD), stationery (33 USD), meeting packages for 50 participants (1,000 USD), and travel to Palu for 5 persons (4.001 USD)
	1.2.2.2	Development of management instruments	1,716	The total budget for developing management instruments is 1,716 USD, covering facilitator fees for 2 persons (200 USD), note taker fees (50 USD), meeting kits for 50 participants (100 USD), stationery (33 USD), meeting packages (1,000 USD), and participant transport costs (333 USD).
	1.2.2.3	User trial test of management instruments	900	The total budget for user trial tests of management instruments is 900 USD, which includes enumerator fees for 3 persons over 5 days (750 USD) and transportation for data collection (150 USD).
	1.2.2.4	Dissemination & training of management instrument	1,783	The total budget for dissemination and training is 1,783 USD, covering printing and distribution of the final instrument (500 USD), facilitator fees (200 USD), note taker fees (50 USD), stationery (33 USD), and meeting packages for dissemination and training (1,000 USD).
	1.2.2.5	Climate awareness goes to schools (trainings)	8,160	The total budget for climate awareness training is 8,160 USD, including trainer fees (600 USD), transportation costs (360 USD), facilitator fees for 6 persons (3,600 USD), and meeting packages for 30 participants (3,600 USD).
Output 1.2.3. Target villages are facilitated to prepare PROKLIM registration	1.2.3.1	Workshop, training, and socialization PROKLIM at village level	10,301	The total budget for conducting PROKLIM workshops and training is 10,301 USD, which includes facilitator fees (400 USD), note taker fees (100 USD), training kits for 100 participants (400 USD), stationery (67 USD), meeting packages for 100 participants (4,000 USD), participant transport costs (1,333 USD), and travel tor Palu for 5 persons (4.001 USD)
	1.2.3.2	PROKLIM registry assistance with	10,581	The total budget for PROKLIM registry assistance is 10,581 USD, including consultant fees for PROKLIM registry (1,562

		enumerators		USD), enumerator fees for 20 persons (3,333 USD), transportation for PROKLIM registry (1,000 USD), travel to palu for 2 persons (986 USD), facilitator fees (400 USD), note taker fees (100 USD), and meeting packages for 80 participants (3,200 USD).
Outcome/Output	**Activity**		**Budget (US$)**	**Budget Notes**
Component 2. WEF nexus approach applied to improve the effectiveness of District's Climate Change Adaptation Action Plan				
Outcome 2.1. Participatory WEF nexus-based adaptation action plan developed & applied at village level				
Output 2.1.1. Village level climate change risks and vulnerability assessment developed	2.1.1.1	Focus grup discussions (preparedness and awareness on climate change risk and vulnerability assessment)	5,519	The total budget for conducting focus group discussions (FGDs) is 5,519 USD, which includes meeting packages for 15 participants across 6 villages (1,800 USD), participant transportation (600 USD), facilitator fees (600 USD), stationery (200 USD), travel to Palu for 2 persons (986 USD), and hiring a consultant for climate change risks assessment (1,333 USD).
	2.1.1.2	Develop rapid assessment on climate change risks and vulnerability, including women and vulnerable groups	11,200	The total budget for developing a rapid assessment is 11,200 USD, which includes consultant fees for assessment across 6 villages (8,000 USD), meeting packages for 15 participants (1,800 USD), participant transportation (600 USD), facilitator fees (600 USD), and stationery (200 USD).
	2.1.1.3	Diseminate result of rapid assessment to all village stakeholders	4,133	The total budget for disseminating assessment results is 4,133 USD, which includes meeting packages for 15 participants in 3 villages (1,800 USD), participant transportation (600 USD), facilitator fees (200 USD), note taker fees (200 USD), and consultant fees for assessment (1,333 USD).
Output 2.1.2. WEF nexus-based adaptation options indentified by target group (vulnerable groups, farmers, village government staffs)	2.1.2.1	Develop pre-material on adaptation options	8,568	The total budget for developing pre-materials is 8,568 USD, including consultant fees for pre-material development (6,000 USD), local transportation for 6 people across 6 villages (262 USD), enumerator fees (1,320 USD), and travel to Palu fo 2 persons (986 USD).
	2.1.2.2	Facilitate FGDs on adaptation options	6,814	The total budget for facilitating FGDs is 6,814 USD, which includes meeting packages for 20 participants (2,400 USD), facilitator fees (600 USD), note taker fees (600 USD), moderator fees (600 USD), and travel to palu for 4 persons (2,614 USD)
	2.1.2.3	Develop IEC materials of identifed adaption options (WEF Nexus)	6,567	The total budget for developing IEC materials is 6,567 USD, which includes fees for IEC designers (667 USD), poster production (2,500 USD), calendar production (1,500 USD), and merchandise production (1,900 USD).
	2.1.2.4	Monitoring and evaluation of climate adaptation actions	11,713	The total budget for monitoring and evaluation is 11,713 USD, includingTravel for 4 persons 3 times (11.680 USD), and progress/final report preparation (33 USD).
Output 2.1.3. Village WEF nexus-based adaptation action plan developed	2.1.3.1	Develop action plan	16,000	The total budget for developing the climate action plan is 16,000 USD, which is allocated entirely for consultant fees for action plan development across 6 villages (16,000 USD).
	2.1.3.2	Support village to	22,000	The total budget is 22,000 USD, which includes consultant fees

		propose identified actions to be financed by village fund and by Adaptation Fund		for identifying financing schemes and adaptation options (8,000 USD) and technical assistant consultants for 12 months (14,000 USD).
	2.1.3.3	Workshop on village climate adaptation plan	4,033	The total budget for workshops is 4,033 USD, including meeting packages for 15 participants (1,800 USD), participant transportation (600 USD), facilitator fees (200 USD), note taker fees (100 USD), and consultant fees for action plan development (1,333 USD).
Output 2.1.4. Village-based adaptive water management and physical infrastructure development	2.1.4.1	Strengthen water adaptive management village task force	10,320	The total budget for strengthening the water adaptive management village task force is 10,320 USD, which includes water and climate consultants to facilitate task force establishment (4,800 USD), meals for FGDs (900 USD), participant transportation (900 USD), facilitator fees (600 USD), note taker fees (400 USD), venue rental (400 USD), and travel to Palu for 2 consultants 2 times (2.320 USD)
	2.1.4.2	WASH household-based e-Survey	21,910	The total budget for conducting the WASH household-based e-survey is 21,910 USD, which includes senior consultants for e-survey training and analysis (4,800 USD), e-survey assistants (1,200 USD), programmer fees (2,400 USD), meals for workshops and training (450 USD), participant transportation (900 USD), facilitator fees (600 USD), note taker fees (400 USD), operational costs for e-survey implementation (9,600 USD), venue rental (400 USD),), and travel to Palu for 2 consultants (1,093 USD)
	2.1.4.3	Conduct public consultation and develop adaptive water management plan	20,895	The total budget for conducting public consultation and developing an adaptive water management plan is 20,895 USD, including senior consultant fees (9,600 USD), meals for workshops (900 USD), participant transportation (900 USD), facilitator fees (600 USD), note taker fees (400 USD), venue rental (400 USD), , travel to Palu for 2 consultants 2 times (2.320 USD) and consultant fees for monitoring and evaluation (5,775 USD).
	2.1.4.4	Evidence-based planning and budgeting for village WASH program	4,360	The total budget for evidence-based planning and budgeting for village WASH programs is 4,360 USD, which includes meals for workshops (900 USD), participant transportation (900 USD), facilitator fees (600 USD), note taker fees (400 USD), venue rental (400 USD), travel to Palu for 2 consultants (1.160 USD)
	2.1.4.5	Physical construction of adaptive water infrastructure (NbS knock-down levee along the river 500 meter)	29,031	The total budget for constructing NbS knock-down levees is 29,031 USD, including civil engineer consultant fees (2,667 USD), landscape architect consultant fees (2,667 USD), community labor (933 USD), construction materials (6,667 USD), material mobilization (533 USD), meeting packages (1,200 USD), participant transportation (400 USD), facilitator fees (133 USD), note taker fees (100 USD), resource person fees (167 USD), travel to Palu for 2 consultants (2.320 USD), consultant fees for monitoring and evaluation (3.850 USD), and audit costs (7,394 USD).
	2.1.4.6	Physical construction of adaptive water infrastructure (ponds)	14,170	The total budget for constructing adaptive water infrastructure (ponds) is 14,170 USD, including community labor (933 USD), construction materials (6,667 USD), material mobilization (400 USD), travel to Palu for 2 consultants 2 times (2.320 USD), and consultant fees for monitoring and evaluation (3,850 USD).
	2.1.4.7	Physical construction of adaptive water	10,453	The total budget for constructing a mini nature-based water treatment plant and distribution pipe is 10,453 USD, including

		infrastructure (mini nature-based water treatment plant & distribution pipe)		community labor (933 USD), construction materials (6,667 USD), material mobilization (533 USD), and travel to Palu for 2 consultants 2 times (2.320 USD)
	2.1.4.8	Physical construction of adaptive water infrastructure (household water and sanitation facility)	13,921	The total budget for constructing household water and sanitation facilities is 13,921 USD, including community labor (933 USD), construction materials (6,667 USD), material mobilization (667 USD), meeting packages (2,200 USD), participant transportation (667 USD), banner production (27 USD), facilitator fees (167 USD), note taker fees (100 USD), resource person fees (173 USD), and travel to Palu for 2 consultants 2 times (2.320 USD)
Output 2.1.5. Village-based adaptive agriculture management and physical infrastructure development	2.1.5.1	Strengthen adaptive Agriculture management village task force (Kelompok Tani)	11,372	The total budget allocated for strengthening adaptive agriculture management village task force is 11,372 USD, which includes trainer fees for 3 trainers across 6 villages over 5 sessions (9,000 USD), procurement of training materials for 6 villages (372 USD), venue rental for 5 days in 6 villages (1,000 USD), participant transportation for 10 people in 6 villages (400 USD), and meal provisions for 10 participants in 6 villages (600 USD).
	2.1.5.2	Survey and identify of flood prone on agriculture areas (physical) and cultural heritage (social)	20,894	The total budget for conducting the survey and identifying flood-prone agricultural areas and cultural heritage is 20,894 USD, covering field surveyor fees for 3 persons over 12 days (8,400 USD), consultant fees for village-based adaptive agriculture management (10,667 USD), car rental for 10 days (1,000 USD), drafting and finalization fees (333 USD), and travel to Palu for 1 person (494 USD)
	2.1.5.3	Develop activity plan for adaptive agriculture management & physical infrastructure	1,227	The total budget for developing an activity plan is 1,227 USD, which includes venue rental for 1 day (33 USD), transportation for 30 participants (200 USD), meals for 30 participants (300 USD), facilitator fees (100 USD), note taker fees for 2 persons (100 USD), and travel to Palu for 1 person (494 USD)
	2.1.5.4	Build demonstration plot nursery to produce seedlings for the establishment of plantations	31,927	The budget for building demonstration plot nurseries is 31,927 USD, consisting of consultant fees for nursery development plans (1,000 USD), nursery development for coffee (3,000 seeds) (9,027 USD), nursery development for cocoa (3,000 seeds) (9,927 USD), and nursery development for coconut (2,000 seeds) (11,973 USD).
	2.1.5.5	Improvement/construction of agriculture irrigation/drainage system with implemented safety protocols	17,400	The total budget allocated for irrigation and drainage system improvements is 17,400 USD, including planning and design for 3 sites (5,000 USD), community labor costs (1,400 USD), construction materials (10,000 USD), and mobilization of materials (1,000 USD).
	2.1.5.6	Biogeographic assessment for natural food plain development and restoration	20,000	The budget for conducting a biogeographic assessment is 20,000 USD, covering environmental assessments for 3 sites (4,000 USD), materials for permeable barriers (10,000 USD), and planting and vegetation restoration efforts (6,000 USD).
	2.1.5.7	Retention well construction in flood prone areas of plantations while safeguarding local wisdom/value	15,400	The total budget for constructing retention wells is 15,400 USD, which includes feasibility study costs (3,000 USD), community labor fees (1,400 USD), construction materials (10,000 USD), and material mobilization (1,000 USD).
Output 2.1.6. Village-based adaptive renewable energy management	2.1.6.1	Development module of efficiency and energy management	1,667	The total budget for developing an efficiency and energy management module is 1,667 USD, which covers the consultant fee for developing the module in one package for a one-time

				engagement (1,667 USD).
	2.1.6.2	Solar PV installment for climate impact information	6,667	The total budget allocated for the installation of solar PV systems for climate impact information is 6,667 USD, which includes the complete installation package for one time (6,667 USD).
	2.1.6.3	Climate IoT tools and software development for supporting sustainable agriculture	15,000	The total budget for Climate IoT tools and software development is 15,000 USD, comprising the installation of climate-weather tools for sustainable agriculture (8,333 USD) and the development of digital infrastructure to support climate IoT tools (6,667 USD).
	2.1.6.4	Improving internet access for climate resilience information	4,986	The total budget for improving internet access is 4,986 USD, which includes the installation of rural internet access infrastructure (2,400 USD), providing internet access for climate monitoring models over 24 months (1,600 USD), and travel to Palu for 2 persons (986 USD)
	2.1.6.5	Capacity building to build the technical skills related to the installation and use of solar PV systems and climate IoT tools	4,793	The total budget allocated for capacity building is 4,793 USD, including the trainer fee for the rural community (1,333 USD), meals for 25 participants across two sessions (500 USD), transport for participants (333 USD), facilitator fee (200 USD), venue rental (67 USD), Travel to Palu fot 3 persons 2 times (2,360 USD)
	2.1.6.6	Conducting FGD for Community-driven climate resilience information sharing	3,460	The total budget for conducting focus group discussions (FGD) is 3,460 USD, which includes meals for 25 participants over two sessions (500 USD), facilitator fee (200 USD), venue rental (67 USD), transport for participants (333 USD), Travel to Palu fot 3 persons 2 times (2,360 USD)
	2.1.6.7	Conducting for Workshop Community awareness on energy efficiency and management	4,793	The total budget for conducting workshops is 4,793 USD, which consists of consultant fees for developing the energy efficiency and management module (1,333 USD), meals for 25 participants across two sessions (500 USD), facilitator fees (200 USD), venue rental (67 USD), transport for participants (333 USD), Travel to Palu fot 3 persons 2 times (2,360 USD)
Outcome 2.2. Increased economic, social, livelihood, resilience in the local community				
Output 2.2.1. Supply chain mapping of leading commodities and commodities development plan is available	2.2.1.1	Conduct supply chain analysis on leading commodities	7,180	The total budget for conducting a supply chain analysis on leading commodities is 7,180 USD, which includes consultant fees for supply chain analysis (4,000 USD), surveyor fees for 3 people (700 USD), external review (667 USD), drafting and finalization (667 USD), and travel to Palu for 2 persons (1,146 USD)
	2.2.1.2	Conduct market demand and distribution analysis on leading commodities and derivative products	2,194	The total budget for conducting market demand and distribution analysis is 2,194 USD, covering surveyor fees for 3 persons (700 USD), external review (667 USD), drafting and finalization (667 USD), and local transport for 4 persons over 3 days (160 USD).
	2.2.1.3	Develop sustainable commodities development plan	1,811	The total budget for developing a sustainable commodities development plan is 1,811 USD, which includes an external review fee (667 USD), venue rental (200 USD), participant transportation for 15 people (100 USD), meals for 15 participants (150 USD), facilitator fee (100 USD), note taker fee for 2 persons (100 USD), and travel to Palu for 1 person (494 USD)
Output 2.2.2. Options to improve leading commodities value through its derivative products are	2.2.2.1	Identification of preferable derivative products to be further developed to increase	3,984	The total budget for identifying preferable derivative products is 3,984 USD, covering consultant fees for sustainable commodities (2,667 USD), external review (667 USD), venue rental (200 USD), transport for 15 participants (100 USD),

identified and implemented by farmers		income of farmers		meals for 15 participants (150 USD), facilitator fee (100 USD), and note taker fee (100 USD).
	2.2.2.2	Conduct identifed derivative products distribution analysis to ensure product reaching the right market at the right time (including identinfying buyers)	1,808	The total budget for conducting an analysis of derivative product distribution is 1,808 USD, which includes an external review fee (667 USD), participant transportation for 15 people (100 USD), meals for 26 participants (347 USD), facilitator fee (100 USD), note taker fee (100 USD), and travel to Palu for 1 person (494 USD)
Output 2.2.3. Technical capacity of and tools/machinery for farmers to produce value-added products is strengthened and in place	2.2.3.1	Training of trainers for farmers on value-added commodities production	9,196	The total budget for training of trainers is 9,196 USD, including consultant fees for technical capacity development (5,333 USD), trainer fees (467 USD), venue rental (200 USD), seminar kits for 50 participants (100 USD), stationery (27 USD), screen projector rental (44 USD), meeting package for 25 participants (333 USD), printing and distribution of materials (250 USD), participant transportation for 25 people (167 USD),and travel to Palu for 3 persons (2,275 USD)
	2.2.3.2	Developing appropriate Processing Tools/Machinery/Technology for the farmers (to be granted to Village enterprise/BUMDes)	36,666	The total budget for developing processing tools/machinery is 36,666 USD, covering the purchase of a Suton cocoa/coffee sorting machine (19,667 USD), fermentation ovens (3,000 USD), fermentation boxes (3,000 USD), pod breaker/pulper machine (2,333 USD), cocoa/coffee roasting machine (1,333 USD), solar domes for 2 villages (4,000 USD), and a huller machine (3,333 USD).
	2.2.3.3	Training for village enterprises to develop business model e.g. market, distribution, and Return of Investment (RoI)	3,345	The total budget for training village enterprises is 3,345 USD, which includes trainer fees (267 USD), training equipment and supplies (167 USD), meeting package for 25 participants (500 USD), printing and distribution of materials (250 USD), participant transportation for 25 people (167 USD), Travel to Palu for 3 Persons (1,994 USD)
	2.2.3.4	Workshop on empowering women and vulnerable groups' resilience (economic, social, livelihood)	983	The total budget for conducting the workshop is 983 USD, covering facilitator fees (233 USD), note taker fees (50 USD), stationery (33 USD), meeting package for 25 participants (500 USD), and participant transportation for 25 people (167 USD).
Outcome/Output	**Activity**		**Budget (US$)**	**Budget Notes**
Component 3. Center of excellence of climate change adaptation at district level				
Outcome 3.1. Learning and Communication Tools targeted for replication developed based on Monitoring, Evaluation & Learning (MEL) throughout the process				

Output 3.1.1. IEC materials and tools design based on local context developed	3.1.1.1	Identify local context on adaptation efforts for designing IEC materials and tools	2,986	The total budget for identifying the local context on adaptation efforts is 2,986 USD, which includes the consultant fee for local adaptation context identification (2,000 USD), and travel to Palu for 2 persons (986 USD).
	3.1.1.2	Developing IEC materials and tools design based on local context and lessons learned from the project	5,585	The total budget for developing IEC materials and tools design is 5,585 USD, covering the consultant fee for developing the IEC materials (3,333 USD) and KML expert services for 17 days (2,252 USD).
	3.1.1.3	Public consultation on the IEC materials and tools	8,545	The total budget for conducting public consultation sessions is 8,545 USD, which includes the cost of meals for 50 participants over 2 sessions (3,333 USD), facilitator fees (200 USD), venue rental for 2 sessions (67 USD), transportation for 25 participants (333 USD), and travel to Palu for 3 persons (2.360 USD) , and KML expert services for 17 days (2,252 USD).
	3.1.1.4	Finalization of IEC materials and tools design based on local context	6,431	The total budget for the finalization of IEC materials and tools design is 6,431 USD, including the consultant fee for finalizing IEC materials (4,179 USD) and KML expert services for 17 days (2,252 USD).
	3.1.1.5	Development of project lessons learned	20,008	The total budget for developing lessons learned from the project is 20,008 USD, which includes consultant fees for knowledge management and community best practices over 22 months (11,000 USD) and KML expert services for 68 days (9,008 USD).
	3.1.1.6	Develop communication strategy	3,333	The total budget for developing the communication strategy is 3,333 USD, which includes the communication specialist fee for creating a climate awareness strategy (3,333 USD).
	3.1.1.7	Create short documentary about community based climate adaptation	12,000	The total budget for creating a short documentary is 12,000 USD, which covers the production house fee for creating the short movie (10,000 USD), and travel to Palu for 3 persons (2,000 USD)
	3.1.1.8	Dissemenation of communication product (short documentary)	23,943	The total budget for the dissemination of communication products is 23,943 USD, which includes meeting package costs (3,000 USD), design and production of educational materials (1,000 USD), meeting package for detailed awareness programs (1,333 USD), flyers and posters (33 USD), travel to Palu for 7 persons (4.509 USD) , media outreach (6,674 USD), and audit costs (7,394 USD).
Outcome 3.2. Disseminated knowledge lesson learned and best practices for further replication by District				
Output 3.2.1 Center of excellence digital platform to disseminate knowledge, lessons learned and best practices developed and launched	3.2.1.1	Design centre of excellence digital platform	14,145	The total budget for designing the digital platform is 14,145 USD, which includes consultant fees for developing the digital platform (10,000 USD), meeting packages (800 USD), facilitator fees (267 USD), travel to Palu for 2 persons (826 USD), and KML expert services for 17 days (2,252 USD).
	3.2.1.2	User trial test of the	4,454	The total budget for conducting the user trial test is 4,454 USD,

		centre of excellence digital platform		covering meeting packages (2,400 USD), facilitator fees (400 USD), .and travel to Palu for 2 persons(1.654 USD),
	3.2.1.3	Sub national policy dialogue for identification learning and sharing climate adapatation action plan (district and province)	2,027	The total budget for the sub-national policy dialogue is 2,027 USD, covering venue rental (1,000 USD), resource person fees (333 USD), facilitator fees (100 USD), note taker fees (100 USDand travel to Palu for 1 person (494 USD)
	3.2.1.4	Launcing of Sigi District Climate Change Adaptation Centre of Excellence (back-to-back with Closing Ceremony of the Projects)	2,759	The total budget for the launching event is 2,759 USD, which includes meeting package costs for 70 participants (1,400 USD), facilitator fees (200 USD), resource person fees (333 USD), and travel to palu for 2 persons (826 USD)

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