



# FUND PROJECT/PROGRAMME PROPOSAL TO THE ADAPTATION

## PART I: PROJECT/PROGRAMME

Project/Programme Category: **Small-sized Project/Programme**

Country/ies: **INDONESIA**

Title of Project/Programme: **Building Climate Resilient District in Indonesia: Case of Sigi District**

Type of Implementing Entity: **National Implementing Entity**

Implementing Entity: **Kemitraan (Partnership for Governance Reform)**

Executing Entity/ies: **Konsorsium Lingkungan Adaptif, Berketahanan, Inovatif, dan Partisipatif (KOLABORASI): Koaksi Indonesia, Lingkar Temu Kabupaten Lestari (LTKL), Earth Innovation Institute), 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)**

### Project / Programme Background and Context:

#### 1) General context: Climate Change and Adaptation

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. For example, the population exposed to an extreme river flood could grow by 1.4 million by 2035–2044<sup>1</sup>.

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. Figure 1 illustrates the vulnerability at village level.

---

<sup>1</sup>Climate Risk Profile: Indonesia (2021): The World Bank Group and Asian Development Bank



## 2.a. Strategic issues on water in Sigi District (AWS)

### i) Catchment water balance to sustain livelihood and energy production in the district

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. Research has shown that climate change impacts could increase the risks related to catchment water balance, further lead to conflict over water between different users in the catchment<sup>4</sup>.

Sigi 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 DAS Lariang and DAS Palu. The water cycle in these catchments is critical to sustain the district's irrigation areas such as: Gumbasa, Kekeloe, Maenusi, Wuno, Ngata Baru, Paneki, Gimpu, Tongoa, Pakuli, Proud, Saluri, Balase, Rogo, Sambo, Wera and Bomba. Understanding the catchments' water balance also allowed the district government to better plan a resilient raw water supply for the upcoming industrial and agricultural centers in Sigi, as part of the KAPET-PALAPAS National Strategic Area.

It is crucial to understand the current and future state of these catchment water balances in relation to its capacity to sustain the district's livelihood and energy production, amidst different climate change scenarios. Currently, the study on the impact of climate change at district level is not available and is expected to be made available through the implementation of this proposal.

### ii) River and borewell water quality

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 (2018) mentioned that maintaining good quality of water resources is considered as one of the district strategic development issues.

Regular surface water quality monitoring by the district government is done at 6 subsidiaries of Lariang river, i.e. Saluki river, Salua river, Gumbasa river, Sambo river, Sambo river, Lewara river and Miu river. Monitoring in 2018 shows that both the physical and chemical parameters of Lariang river are lower than the national standard quality for Class II Water, which means that generally the Lariang river water is not suitable for use as the source for the district's drinking water company supply. Mild contamination in Lariang river was recorded in the 2017 Water Contamination Index calculation by the district's environmental protection office. On the other hand, the 2018 groundwater quality monitoring at 9 sampling locations indicated that the district's groundwater is still suitable for use as the raw water supply for domestic purposes, with prior treatments required.

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

### iii) Access to safe Water, Sanitation and Hygiene (WASH)

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 (*Statistik Kesejahteraan Rakyat Kabupaten Sigi 2021*). While the total number shows that more than 70% of Sigi households already have access to clean water, SDG 6 targets and national development targets require the access 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 their proneness to water quality contamination and resiliency towards natural disaster should be assessed, as well as the spatial distribution of the high-risk population in terms of access to decent or safe clean water.

---

<sup>4</sup>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

Once collected and assessed, this information should feed back into the district's development targets and planning.

#### **iv) Water-related disaster (flood and landslide)**

##### **(1) Floods**

The flooding events in Sigi are triggered by high-intensity rain 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, led to higher threat of flash flood to low-lying areas along the river systems. Several rivers where flooding occurs frequently include the Miu river (Gumbasa subdistrict); the Salui river, the Kalangga river and the Palindo river (South Dolo subdistrict); Wewe River, Magila River, Sadaunta River and Salua River (Kulawi subdistrict); and Manggalapi River (Palolo subdistrict).

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 subdistrict, Southern Lindu subdistrict, South Kulawi subdistrict and Pipikoro subdistrict.

The high incidence of flooding in Sigi is caused by several factors, including:

- **Local weather and climate factors**, caused by uneven variations in the equatorial season pattern (two peaks of the rainy season) and the monsoon season pattern (one peak of the rainy season).
- **Madden Julian Oscillation (MJO) - Global Atmospheric Phenomenon**. The impact of global climate change triggers changes in the MJO pattern in tropical countries including Indonesia, which is an atmospheric wave that moves from west (Indian Ocean) to east by carrying wet air masses. The influx of wet air masses from the Indian Ocean increases rainfall in the areas traversed. The impact of the MJO is very strong in low latitude areas, near the equator (Windayati & Surinati, 2016).
- **Geological factors (rock and soil conditions)**. Distribution of fine-textured soil and clay fraction as a result of weathering/breakdown of rocks with high silica content in Sigi, as well as lithological conditions composed of rocks with low permeability values.
  - **Topographic factors (slope)**. Steep slopes (topography class of steep hills-steep mountains) with river channels that empties into the lowlands dominates the landscape of Sigi. The flood-prone lowlands are where major settlements and economic centers are developed.
  - **The factor of land cover changes**. Massive changes in land use from land cover in the form of forests to areas of plantation, cultivation and mining activities, especially in areas that are included in the catchment of rivers in Sigi. This land use change also includes catchments which have been converted into plantation areas and even settlements.

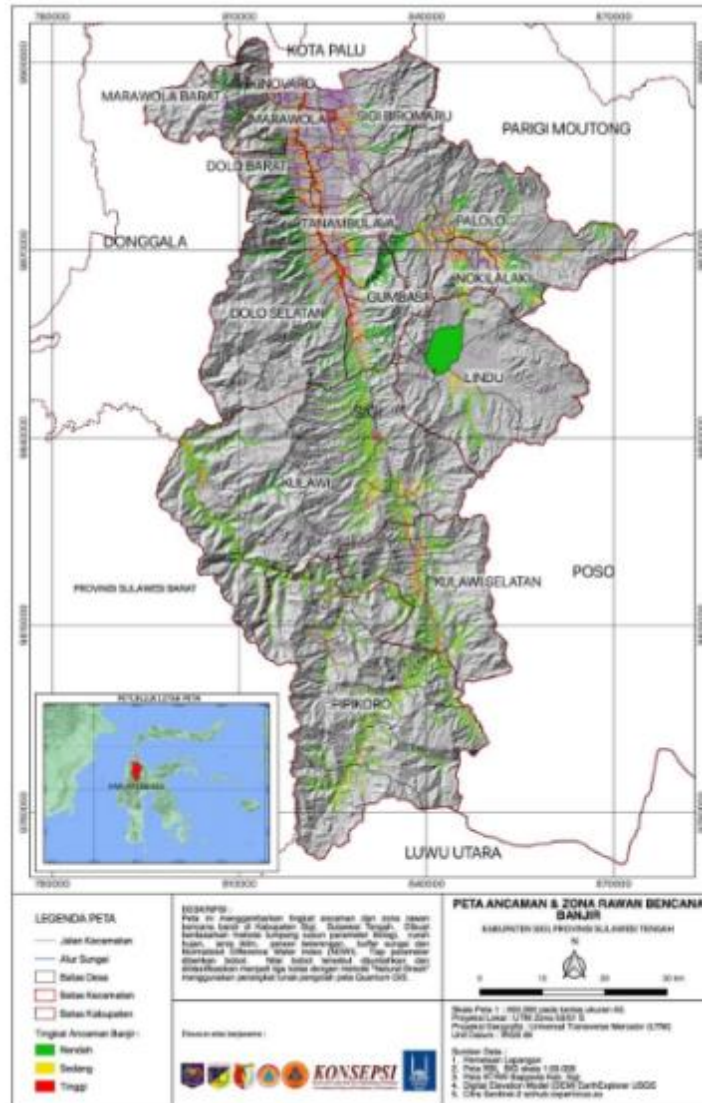


Figure 2. The distribution of flood and flash flood hazard index in Sigi (Source: Badan Nasional Penanggulangan Bencana, 2015)

## (2) Landslides

In general, Sigi has an Oldemen climate type which has 7-9 wet months in a year. Rain events can trigger landslides in areas with moderate to high slopes where rainwater has the potential to fill fracture zones and debris that accumulates in the upper slope area with high permeability, when water stored in soil and rock is saturated with water this condition will produce mud flow because the water mixes with clay and sand which can be a subsurface flow that passes through the slip plane (debris flow) which carries the soil and rock masses. This condition is characterized by the appearance of new springs with a cloudy brown color which indicates a mud flow is taking place which is ready to launch rock and soil masses into the lower ground.

The southern part of Sigi is characterized with high rainfall intensity, ranges from 1500 – 2300 mm/year, among others in Kulawi subdistrict, Southern Lindu subdistrict, South Kulawi subdistrict and Pipikoro subdistrict. Due to the current climate change conditions, the risk of higher rainfall intensity and flood events in a year will increase, this could trigger the occurrence of landslides and flash floods in several areas especially along the Palu Valley.

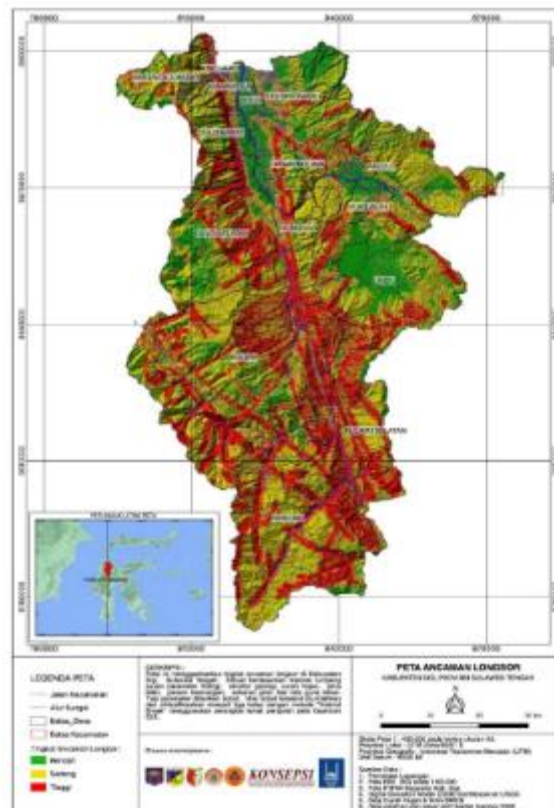


Figure 3. The distribution of landslide hazard index in Sigi (Source: Badan Nasional Penanggulangan Bencana, 2015)

The future (2030) projection of flooding risk change in Sigi, using current trend scenario, by WWF Water Risk Filter shows an increasing trend with risk change class of +0.8. This projection indicates that the areas currently identified by BNPB with high flood and flash flood hazard would be further exposed to higher risk of flooding events.

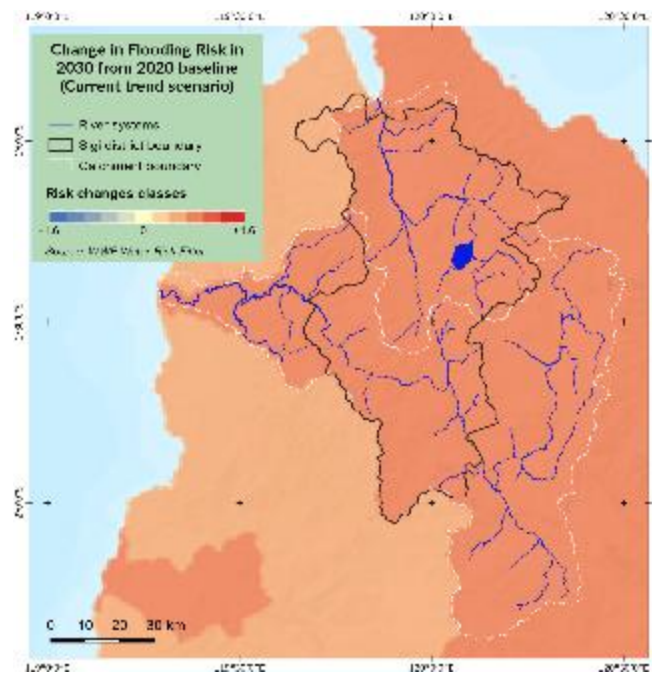


Figure 4. Change in flooding risk in 2030 from 2020 baseline using current trend scenario (Source: WWF Water Risk Filter, 2022)

Based on flood events compiled from news coverage of the main mass media, Kompas Daily, the floods in Sigi can be summarized as follows:

Tabel 2. Flood Event 1982-2019

Year	Location	Scope of impact
1982, February 17	Kaluku village, Dolo subdistrict	Destruction of Palu-Kulawi bridge and inundation of hundreds of hectares of rice field
1996, April 5	South Dolo subdistrict	66 houses heavily damaged due to mud flood
2002, May 15	South Dolo and Palolo subdistrict	Overflowing of Miu River
2010, May 22	Bangga Village, South Dolo subdistrict and Simoro Village, Gumbasa subdistrict	
2011, December 4	Kulawi subdistrict	Flash floods damaged two bridges, isolating Bolapapu Village. The flood damaged hundreds of houses, schools and office buildings.
2013, April 2	Palolo subdistrict	Flash flood on Manggalapi River. Rejeki Village took the biggest hit
2013, October 1	Kulawi subdistrict	Flash flood on Salua River. Salua Village took the biggest hit
2015, April 24	Kulawi subdistrict	Overflowing of Mewe River. Six villages were hit, i.e. O'o, Lawua, Tompi Bugis, Lempelero, Watukilo, and Palimakujawa
2019, December 8	Poi Village, South Dolo subdistrict	Mud flood hit Poi Village
2019, December 12	Bolapapu Village, Kulawi subdistrict	Flash floods resulted in the death of two residents, houses on the banks of the Magila river were heavily damaged.

## **b) Strategic Issues on Energy in Sigi District**

### **i) Access to Electricity**

Indonesia's fulfillment of energy needs has not been evenly distributed and still has many challenges. This condition also occurs in Central Sulawesi. In 2018, the population of Central Sulawesi was 3,010,440 people or 811,927 families. Seven hundred forty-six thousand four hundred thirty-four households have electricity, and Central Sulawesi's electrification ratio is 91.93%.

Furthermore, Sigi District's electrification ratio is 83%, with 43 villages in four sub-districts with limited access to the PLN's grid (State-Owned Electricity Company). The sub-districts are Lindu, Kulawi, South Kulawi, West Dolo, and Pipikoro, spreading across the mountainous part of Central Sulawesi, adding difficulty to PLN's grid expansion. It takes about half an hour to reach Kulawi and Pipikoro from the centre of the Sigi District or approximately 50 km. On average, PLN only manages 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 an immediate reality.

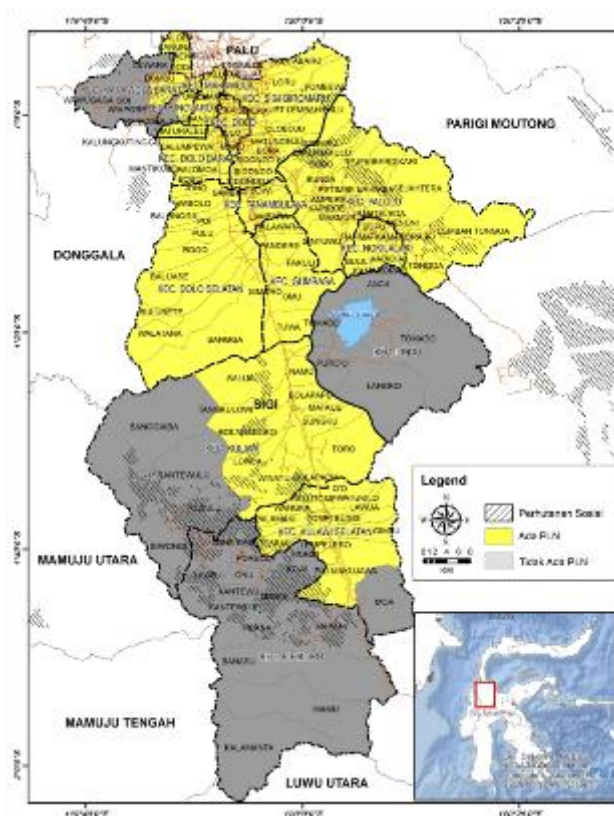


Figure 5. The availability of electricity access from PLN at Sigi District (Source: BPS, 2018)

For this reason, the Central Sulawesi Provincial Government prioritizes energy development in the RUED (Regional General Energy Plan) and RUKN (Regional Electricity General Plan). The rural electricity development plan prioritizes using non-fossil primary energy, namely water and solar, both off-grid and on-grid, by utilizing hybrid technology while still paying attention to technical, economic, and environmental safety aspects. Energy development is adjusted to its potential, where the availability of micro-scale water energy and solar energy is found in relatively large quantities.

Several villages in Kulawi and Pipikoro have developed Microhydro on a limited scale as a good example, but not all access to this energy is sufficient because the people in the villages need electricity for productivity and to increase the local economy. They need to run food processing or production machines to improve livelihoods as part of climate change adaptation.

## **ii) Energy Sources in Sigi Impacted by Climate Change**

Renewable energy plants in isolated areas support the electricity needs of their communities. The natural resources available at the site can be used as a power plant. The isolated regions in Sigi Regency can utilize river flows as a source of electricity with a micro hydro power plant (PLTMH). This type of power plant is suitable for the availability of natural resources, that is, river flows, so that it can meet the electricity needs of rural communities.

The water debit and the elevation of the river flow significantly affect the capacity of the PLTMH. The calculation of river debit and height in the feasibility study at the beginning of the planning will determine the energy produced. Data from the Ministry of Energy and Mineral Resources states that the average capacity factor (CF) in PLTMH is 60%, ranging between 40-80%. This CF calculation is closely related to hydrological analysis. So, if there is a sudden hydrological change at one time, it will affect the energy output of the PLTMH.

Climate change is the cause of changes in the hydrology of river flows. The results of the study state that changes in river flow debit occur due to climate change. Through modeling simulations carried out by international researchers, changes in river debit in the world between 1971-2010

happened by the effects of climate change. Some locations become dry, and some areas increase water volume. However, what is of concern from the results of this study is that it is improbable that changes in river conditions will occur other than the impact of climate change. Climate change is essential in changing river conditions, affecting power plants that use river water, namely PLTMH.

Climate change affects river conditions through rainfall, with the uncertainty of rain every year making it difficult to predict the state of the power plants. In addition, if the rainfall is infrequent, the river conditions will become dry, so it cannot drive the turbine generator. Besides, if the rain is abundant, it will cause potential damage to the PLTMH system due to the exorbitant water debit. The uncertain natural conditions will do the PLTMH design wrong to meet the community's needs.

Limited or no access to electricity will undoubtedly impact the livelihoods of rural communities. Community productivity has decreased due to the decrease in people's productive time in activities at night, such as studying or discussing, reduced production of products whose processing uses electrical energy, and limited access to information from outside due to lack of access to communication networks. Communities in remote villages will continue to be closed and cannot have broad access due to the absence of electrical energy.

Not only that, people who live in watersheds will be affected directly by changes in the river. If the river becomes dry, the community will lack access to clean water and protein sources, and the access will be closed if the river has transportation access. Meanwhile, if the river discharge overflows, it will cause flooding, impacting people's homes, and transportation access will also be challenging.

### **c) Strategic issues on food security and agriculture in Sigi District**

#### **i) Decrease in agricultural productivity**

Based on the spatial data from the Ministry of Environment and Forestry<sup>5</sup>, the land use in Sigi District is dominated by forest cover as shown in Table 2. In 2019, 71% of the land was covered by forests, while only 17% (92,128 hectares) was used as agricultural land, which has been constantly increased compared to the agricultural land in 1990 which covered only 11% (60,597 hectares) of land. The high forest cover was caused by the designation of the land use for forest and non-forest use by the Ministry of Environment and Forestry. According to the Environment and Forestry Ministerial 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 District. 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).

---

<sup>5</sup><https://dbgis.menlhk.go.id/arcgis/rest/services/KLHK>

Table 3. Land cover change in Sigi District from 1996 to 2019

Land cover	Area (hectares)			
	1990	2000	2009	2019
Primary dryland forest	372,803	303,037	183,060	320,319
Secondary dryland forest	60,643	92,989	198,915	56,699
Primary swamp forest	78			
Shrubs	23,463	48,189	60,003	51,229
Plantation				537
Settlements	785	902	902	1,643
Bareland	214	1,358	1,468	1,830
No data	5			
Savana	5,968	5,968	5,968	1,435
Water	4,598	4,604	4,604	4,606
Secondary swamp forest	1,350			
Crops	13,326	20,249	21,030	22,698
Crops mixed with shrubs	38,362	35,247	36,593	49,254
Rice fields	8,908	17,962	17,962	20,177
Transmigration				79

Two main staple food crops produced in the district are rice and corn. The total production of corn and rice in 2020 was 56,173 tons and 64,949 tons, respectively, which was produced from the total 12,055 hectares and 14,427 hectares, respectively<sup>6</sup>. The productivity of each of the commodities was 4.6 tons/hectares and 4.5 tons/hectares respectively, which was lower than the national average productivity at 5.4 tons/hectares and 5.2 tons/hectares.

There are several factors that cause the low productivity of corn and rice in Sigi District, one of which is the lack of irrigation for agriculture. Currently, most of agriculture practices still rely on rainfall due to the major earthquake and soil liquefaction that occurred in 2018 that has damaged agriculture infrastructures and reduced the soil fertility. As a consequence, if the dry season is longer than predicted, the productivity of rice and corn would decrease, as happened in 2021.

The 2018 earthquake and soil liquefaction also caused landslides in hilly forested areas that reduced the capacity of the landscape to prevent flash floods in villages in the lowlands. Flash floods are one of the main threats not only to the local community houses but also to their agricultural and livestock activities. The 2019 flash floods in Bangga Village, Dolo Selatan Sub-District submerged parts of the village that forced 580 households to relocate to other villages.

Most of the villages in Sigi are considered to have a moderate vulnerability to climate change as shown in Figure 6. Villages that have high vulnerability are Puroo in Lindu sub-district, Panasibaja, Wiapore and Wugaga in Marawola Barat sub-district and Banasu, Lawe, Lonebasa in Pipikoro sub-district. Three villages that have the highest vulnerability are Bolobia in Kinovaro sub-district, Taipanggabe in Marawola Barat sub-district and Mamu in Pipikoro sub-district. The main livelihood of the people residing in these villages is farming. Some of the major products are cocoa and coffee.

The reduced humidity caused by rising temperatures would drastically increase the vulnerability of cacao trees and threaten the chocolate industry. As for coffee, there are numerous species of the coffee plant. The primary determinants of agricultural yield are temperature and rainfall patterns. By 2050, the area suitable for growing coffee could be reduced by up to 50% due to longer and more violent rain and drought cycles caused by rising temperatures.

<sup>6</sup>BPS, 2021, Kabupaten Sigi Dalam Angka 2021.

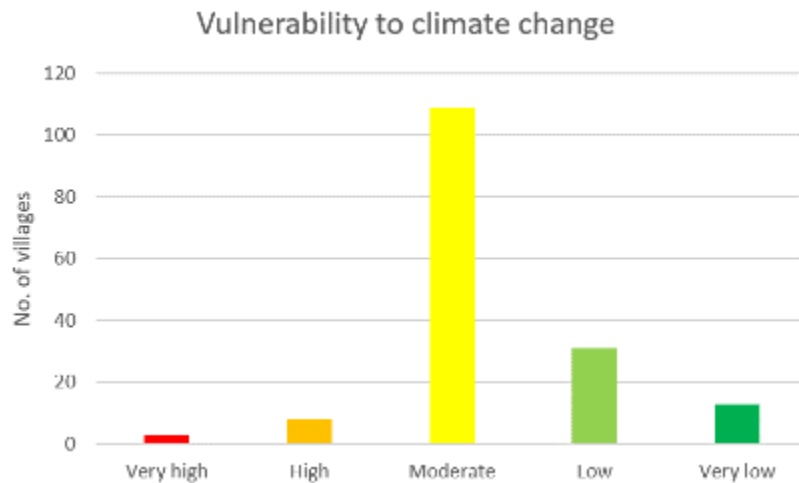


Figure 6. Number of villages in Sigi District grouped based on vulnerability level to climate change (Source: SIDIK)

### 3) Socio economic context

#### a) Population

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<sup>7</sup>. 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.

In 2020, the population density in Sigi is 50 people/km<sup>2</sup>, 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 wide land area. Since 2014, Sigi has implemented an online civil administration information system, however by 2017 the number of National Registry ID Card (KTP) ownership is only 75%, and only 40 out of 1000 people have a birth certificate<sup>8</sup>. This condition has worsened since 2018, where a large number of residents lost their civil registry documents due to the major earthquake and liquefaction<sup>9</sup>.

#### b) Poverty level

Main livelihood of households in Sigi districts is agriculture. In 2020, 52.132 (45%) of people of productive age work as farmers or farm workers, and 44.276 (38%) work 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 at Rp 370.788.

The poverty level in Sigi district fluctuates for the past five years, peaking in 2019 with 30.820 (12,91%) people living in poverty but decreased to 30.000 (12,45%) in 2020. Out of this number, 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 under poverty has healthcare insurance (BPJS) and up to 83% has home ownership<sup>10</sup>.

#### c) Education

The average years of schooling in Sigi district throughout 2016 - 2020 is 8,4 years, relatively low compared to the national policy on twelve years of compulsory education. However the expected years

<sup>7</sup>BPS, 2021, Kabupaten Sigi Dalam Angka 2021.

<sup>8</sup>Kabupaten Sigi, 2019, Rencana Kerja Perangkat Daerah Kabupaten Sigi 2019.

<sup>9</sup><https://sulteng.antaranews.com/berita/44616/banyak-warga-sigi-kehilangan-dokumen-kependudukan>

<sup>10</sup>BPS, 2021, Statistik Penduduk Miskin Kabupaten Sigi Tahun 2020

of schooling kept on increasing from 12,31 in 2016 to 12,87 in 2020, indicating that Sigi district provides access to formal education up to high school level.

In Sigi, nature and forest protection are considered as customs and traditions that were passed down between generations, especially for the indigenous people who live alongside the forest. There is a local wisdom called **Taolo**<sup>11</sup>, 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 who commit forest encroachment and environmental pollution<sup>12</sup>.

#### d) Health

Life expectancy in Sigi district had significantly improved from 68,69 in 2016 to 69,99 in 2020. Public health services had also improved, with health facilities and workers (doctors, nurses, midwives, and pharmacists) spread evenly across all 15 sub districts. In 2020, 98,72% of newborn babies were delivered by doctors and midwives. Child vaccination is accessible in every public health center, but because some children (12,46%) does not possess a Child Identity Card (KIA), some vaccinations were undocumented. This is considered a challenge as database and documentation is paramount in healthcare improvement.

#### e) Gender

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 gender ratio of 112.91, meaning that there were 113 men for every 100 women. The male and female population comparison in 2010 and 2020 for

Sub-District	2010 Population		2020 Population	
	Male	Female	Male	Female
Pipikoro	4,024	3,796	4,445	4,275
Kulawi Selatan	4,456	4,014	4,945	4,495
Kulawi	7,325	6,845	8,098	7,712
Lindu	900	790	2,774	2,476
Nokilalaki	2,870	2,760	3,176	3,084
Palolo	14,409	12,981	15,945	14,495
Gumbasa	6,065	5,615	6,725	6,285
Dolo Selatan	7,503	6,947	8,312	7,768
Dolo Barat	6,383	6,197	7,074	6,936
Tanambulava	4,050	3,820	4,492	4,278
Dolo	10,691	9,899	11,853	11,077
Sigi Biromaru	21,850	21,010	24,208	23,502
Marawola	10,547	10,443	11,680	11,680
Marawola Barat	3,222	3,158	3,568	3,532
Kinovaro	4,828	4,642	5,348	5,192

each sub-district is presented in Table 4.

Table 4. Population of Sigi District in 2010 and 2020 based on gender. Source: Kabupaten Sigi dalam Angka 2021

## 4) Current enabling condition in Sigi District

### a) Sigi Hijau

Sigi Hijau is a policy breakthrough initiated by Sigi District, and a manifestation of Sigi District's commitment to becoming a sustainable District. Through Sigi Hijau, the government of Sigi District has stated its commitment to pursue jurisdictional sustainability, achievable through a number of strategies that include climate change mitigation and adaptation. To achieve this, the government of Sigi has committed to formulating 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 supports exactly this: helping Sigi District develop its own regional action plans for climate change adaptation enhanced with capacity and climate

<sup>11</sup><https://jaring.id/antara-bukti-konservasi-dan-batas-di-atas-kertas/>

<sup>12</sup><https://sulteng.antaranews.com/berita/179460/upaya-komunitas-adat-lindu-jaga-kualitas-lingkungan>

vulnerability assessment and future climate projection modeling for developing more comprehensive, adaptive measures. The incorporation of Sigi Hijau into the district's development planning showcases the district's commitment further, and this will ensure effective implementation and access to funding.

In addition to the regional action plans, the government of Sigi has also committed to reducing climate change risks and impacts through an increase in renewable energy use and a reduction in deforestation and land degradation. The proposed project, which includes a pilot implementation in two selected villages, will target the water-energy-food nexus that aims to increase economic, social, and ecosystem resilience in the local community, as well as supports sustainable, forest-friendly and climate-adaptive agriculture for ensuring food and livelihood security.

#### **b) District-level multistakeholder forum**

Since the issuance of Green Sigi vision in 2019, the district government has established its roadmap towards prepping the implementation pillars including a multi-stakeholders forum. This was conducted despite their post-disaster condition. However, the liquefaction and tsunami recovery have actually slowed down their effort and almost all concentration of partners were directed to disaster recovery with little or almost no attention towards other matters. By June 2022, following their slow recovery, the district had revived their effort.

In parallel, through the LTKL secretariat, the district has conducted stakeholders mapping and assessment in Sigi and across Palu city to identify core groups for Green Sigi implementation and ensure inclusivity of the multi-stakeholders platform. It has been identified that there are key groups working on sustainability from architectural, disaster prevention, youth empowerment, literacy and community business development which can be involved.

It is targeted that by the end of 2022, the Green Sigi multi-stakeholders platform should be established. Until that timeline, the government has committed funds and resources to support the establishment process through the district planning agency. This showcases the commitment of Sigi district in facilitating collective actions for sustainability within their jurisdiction.

#### **c) Other commitments, policies, actions, programs related to climate change adaptation**

Usually, jurisdictions with significant forest and conservation areas issued more regulations related to sustainable land use than jurisdictions with smaller size forest or conservation land. However, the District of Sigi, with relatively smaller size forest and conservation land published regulations on five topics of sustainable land use. Sigi District has issued five topics of regulations in terms 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.

Although the forest and conservation land size of Sigi is smaller compared to other jurisdictions in Indonesia – the proportion of it against the total area of Sigi District is more than 70%. Thus, Sigi District relies heavily on their forest area for its ecosystem services, particularly on water and soil quality, resulting into a strong commitment to protection of the forest and conservation area, social forestry, and focusing on environmentally sound development and sustainable land use, including vulnerability to natural disasters condition, has encouraged and provide a strong awareness for the communities regarding more sustainable development.

The JA commitments in Sigi District are focused on forest conservation and protection, social forestry, agrarian reform, and increasing community and regional incomes. Sigi's vulnerability to natural disasters has encouraged it to focus on environmentally sound development and sustainable land use. Sigi will use its natural assets to increase its economic growth through such sectors as ecotourism, plantations, and agriculture. In 2019, the Sigi government issued the Green Sigi regulation, which

forms the basis for developing Sigi sustainably. In the same year, Sigi also issued a local regulation on RAD for sustainable development in Sigi District. Currently, there are also several initiatives on the management of Lore Lindu National Park that involve all the villages in the park.

## **5) Project Context**

Sigi district has developed its disaster risk assessment in 2020. However, the assessment is still considered to be general as it covers 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' (IPCC 2001)<sup>13</sup>.

As climate risks are increasing, Sigi district government should be aware of which risks can be mitigated and which risks are not possible to be mitigated and will need to be approached through adaptation framework. In terms of adaptation, there are several basic elements that will be the basis of developing a comprehensive adaptation strategy. These basic elements are water and air. In the case of water, we understand that water is the connector of all sectors. Nature and human activities need and have impacts on water, and also are impacted by water (i.e., flood and drought). Due to the climate change that has intensified climate variability occurrences in the region, the water cycle in many regions are changing drastically. These changes are having impacts on catchment water balance in many regions, which further impact on 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 occurrences of floods and long periods of droughts are increasing significantly, which further threaten the livelihood of the people, business continuity and economic continuity in the region.

Based on the context above, this proposal is focused on building climate resilient districts through adaptation on water-energy-food nexus, using Sigi district as the pilot. Below are brief descriptions of the project components.

### **a) Climate Change Vulnerability Assessment and Climate Modeling**

Effective planning and implementation of climate change adaptation at the jurisdictional level require an understanding of the current climate vulnerability levels across the jurisdictions and accurate projection of future changes and impacts. To be able to reach complete understanding, a climate change vulnerability assessment will be conducted, using an indicator-based approach that incorporates climate exposure, sensitivity and adaptive capacity indicators relevant to the local context and to different groups, differeng based on gender, age and other social identities. General indicators may include population size, population density residing in disaster-prone areas, income sources, poverty level as well as health- and education-related indicators. As this project will have a strong emphasis on adaptation on water-energy-food nexus, indicators related to the three sectors will be included in the assessment. These may include, but are not limited to, access to electricity, water sources, agricultural areas and main agricultural crops.

To ensure the longevity of the district's adaptivity to climate change, the climate change vulnerability assessment will be enhanced by climate modeling, aiming to simulate and predict short-, medium- and long-term changes in precipitation and surface temperature in the future that will impact the ecosystem and its services and subsequently humans, through loss of lives, income sources, building damage, and many others. Projection of future changes in these variables can advise appropriate measures that are highly adaptive in the long run.

---

<sup>13</sup>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>

## b) Capacity Assessment

One of the critical issues to plan for climate change adaptation is the issue of capacity of stakeholders at all levels. Understanding the gap of capacity will help Sigi District to formulate the most appropriate actions to be included in the climate adaptation action plan. Capacity assessment in this project will focus on the organizational capacity both at community and district level centered around the nexus adaptation.

The capacity assessment will be closely linked with the main role and function of the organizations based on the national and local mandate for adaptation programming. At the district level, the capacity assessment will be focused on the capacity of relevant organizations that have direct influence to adaptation governance improvement. Organizations with indirect influence will be assessed based on the level of influence, power and interest to adaptation governance improvement.

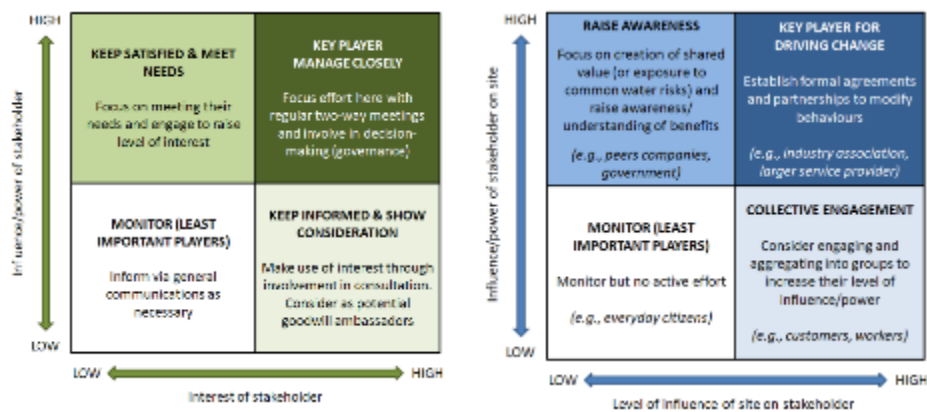


Figure 7. Level of interest and influence of site on stakeholder

At the community level, capacity assessment will be directed to existing community-based organizations that are relevant to adaptation and/or have been established by the local government in relation to the village resilience program (DESTANA) or other relevant government's programs. This is to ensure integration at the community level.

## c) Development of Regional Action Plans for Climate Change Adaptation

While measures have been targeted towards mitigating climate change, adaptation measures that fit the local context should be developed and implemented to ensure regional resilience towards the inevitable climate change impacts. Regional jurisdictions, including district-level jurisdictions, are mandated by the Ministry of Environment and Forestry to develop Regional Action Plans for Climate Change Adaptation (*Rencana Aksi Daerah Adaptasi Perubahan Iklim* or RAD-API). However, technical and resource constraints, as well as prioritization of other development agendas, have hindered such development in many Indonesian regions. Sigi District has planned on developing Regional Action Plans for Climate Change Adaptation (*Rencana Aksi Daerah Adaptasi Perubahan Iklim* or RAD-API), as outlined in the Sigi Hijau regulation. However, during the period in which this project concept note was developed, these action plans had not been developed due to the aforementioned factors. Without appropriate assessment and planning, Sigi District, as well as many other jurisdictions, will put themselves at risk of facing the inevitable impacts of climate change that are detrimental to its economic, social and environmental security.

This project aims to support one of district-level jurisdictions in Indonesia in developing Regional Action Plans for Climate Change Adaptation (*Rencana Aksi Daerah Adaptasi Perubahan Iklim*

or RAD-API) for climate change disaster adaptation, using a multi-pronged, technological and multistakeholder participatory approach for assessing climate vulnerability that serves as the basis for identifying climate vulnerable areas within the district and formulating the appropriate adaptation measures. Such climate adaptation measures will focus on the water-energy-food nexus that increases the district's resilience towards threats to its water, energy and food security posed by climate change, and such measures will be tailored to ensure that they will benefit the local economy. The anticipated measures may include, but are not limited to, supporting sustainable land use and agriculture, forest conservation, access to renewable energy and integrated watershed management, and are expected to be incorporated into other regional plans, such as the Regional Medium-Term Development and Planning Document (*Rencana Pembangunan Jangka Menengah Daerah* or RPJMD), the annual regional government work plan (*Rencana Kerja Pemerintah Daerah* or RKPD) and/or regional spatial planning document (*Rencana Tata Ruang Wilayah* or RTRW).

**d) Pilot implementation at villages level**

Many farmers in Indonesia have felt the decline in agricultural and plantation yields; this has also occurred in several primary commodities in Sigi District. In realizing an adaptive and climate-resilient district, collaborating with various stakeholders, government, and other institutions at all levels are required. The goal anticipated by the community is to increase welfare or livelihood. The water-energy-food nexus approach responds to various factors such as climate change, population growth, and exploitation of natural resources. The proposed water-energy-food nexus approach provides a broad, multi-pronged approach that increases the likelihood of involvement and participation of, and generation of benefits for, different groups of different social identities that exist in the villages, including gender and age groups.

At the local level, the WEF approaches can solve shared problems within a village level. One of the pilot villages in the Pipikoro sub-district, Lon ebasea, is a village with high coffee plantation production. The threat of climate change in the next few decades predicts that without adaptation, the productivity of this commodity will decrease by 50%. Unfortunately, the availability of reliable energy is not sufficient. The threat of flooding from extreme weather has also caused this village to be classified as a high-risk village, according to SIDIK KLHK.

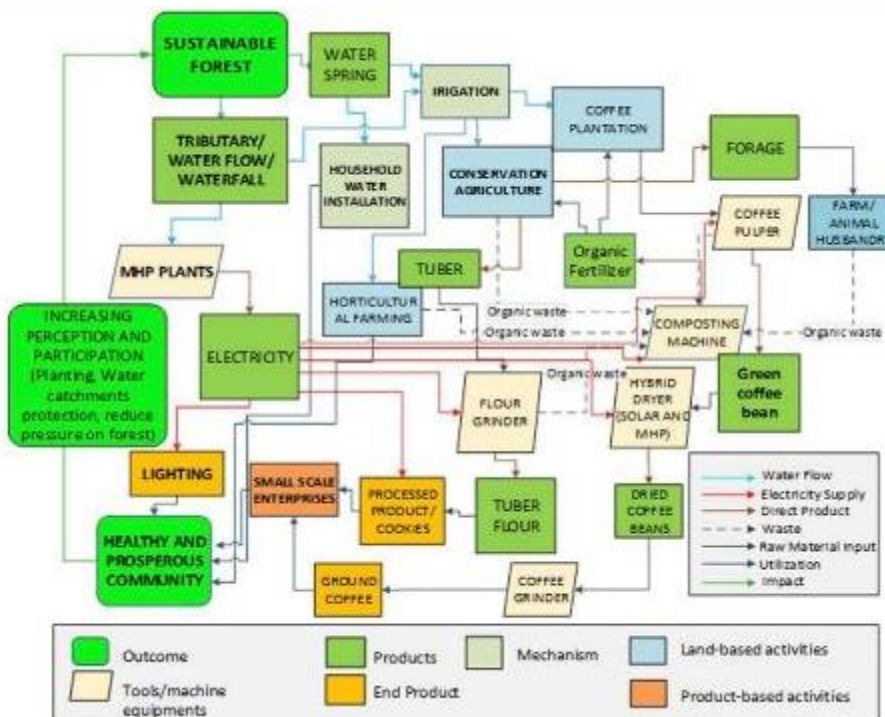


Figure 8. Modeling of Water-Energy-Food nexus applications in Indonesia<sup>14</sup>

WEF interventions are very relevant to addressing common problems, whereby encouraging forest conservation will benefit water conditions and agricultural irrigation. A good water catchment area will maintain energy potential (PLTMH), which is used to develop the economy through food processing (coffee plantation products, for example). This holistic approach (Figure 8) will give the community the capacity to be adaptive to future climate change impacts. Thorough assessment prior to WEF interventions can also help address specific needs of different social groups.

Nexus assessment at the pilot villages intervention: Steps towards Water-Energy-Food security and climate resilience

- 1) Define the objectives and scope of the assessment
  - Identifying the problem at stake, specifying different problems experienced by different groups of social identities, such as gender and age groups;
  - Selecting stakeholders who will participate in the assessment; and
  - Defining the spatial boundaries and temporal scale of the assessment.
- 2) Assess the WEF system and its challenges
  - The relevant components including actors, their assets/investments and their interests;
  - The interactions between them; and
  - The context of the WEF nexus including relevant natural resources, infrastructure, social resources of the communities and institutions (policies, laws, formal or informal arrangements).
- 3) Develop scenarios of future WEF systems in the third step
  - Develop plausible scenarios of WEF security in the region, accounting for the situation of different social groups in the mountains and their resilience. The scenarios are based on identified trends, expected investments and consider future demands for water, energy and food based on population growth, socio-economic changes and urbanization as well as climate change impacts and demands for ecosystem services from lowlands.
- 4) Create an enabling environment to facilitate transformative change
  - Implementing jointly identified solutions requires widespread support and buy-in from other relevant stakeholders.

#### e) Importance of project

The consortium considered the above series of project components as critical for Sigi District. If such a project is not implemented, people living in areas most vulnerable to the impacts of surface temperature increase and precipitation changes will suffer from a variety of risks at different magnitudes, ranging from loss of lives to building damages and loss of income sources. The decrease in agricultural productivity due to increased surface temperature and changes in precipitation pattern, for example, will decrease food availability and security at the household, local, and even regional and national levels, and negatively affect local communities whose livelihoods depend on the agriculture sector, such as farmers.

Without proper assessment of climate change vulnerability, areas in the District that are highly vulnerable to the impacts of climate change, as well as the appropriate measures needed to increase the resilience of these areas will not be properly identified, which could lead to ineffective interventions. The consortium also considered the importance of conducting climate modeling to project changes in risks of the District towards the increase in surface temperature and changes in precipitation to assess changes in vulnerability levels projected in the future, which will enhance interventions options that ensure long-term resilience. In addition, capacity

---

<sup>14</sup>Nugroho, H. Y. S. H., Indrawati, D. R., Wahyuningrum, N., Adi, R. N., Supangat, A. B., Indrajaya, Y., ... & Hani, A. (2022). Toward Water, Energy, and Food Security in Rural Indonesia: A Review. *Water*, 14(10), 1645. Accessed at <https://www.mdpi.com/2073-4441/14/10/1645/pdf>

assessment is needed to identify the current institutional capacity level of local stakeholders in implementing climate change adaptation measures and ways for adequate improvement.

These assessments are critical, as these will serve as the basis for the formalized Regional Action Plans for Climate Change Adaptation that will be mainstreamed into regional planning for long-term interventions. Without the development of formal Regional Action Plans, Sigi District will not have adequate data and justification for pursuing regional development strategies that are climate-adaptive, which could limit the district's capacity and access to funding needed for implementation of interventions and further expose the District to greater climate change impacts that it is currently facing.

Upon the development of effective, targeted action plans, the consortium considered the importance of showcasing how such action plans can be implemented on the ground. Implementation of small-scale, targeted projects specific to the needs of the focus vulnerable villages will help increase their resilience towards climate change, with consideration and understanding of how different gender, age and other special groups are affected and can be empowered. This pilot implementation will also serve as a demonstration for local stakeholders for replication in other areas facing similar challenges.

### **Project / Programme Objectives:**

The overall 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. This objective will be achieved by focusing on:

1. Development of supporting climate change adaptation policy with appropriate adaptation measures and good governance to strengthen Sigi District resilience with water-food-energy nexus approach
2. Showcasing an effective District's Action Plan for Climate Change Adaptation with on the ground implementation focusing on two vulnerable villages: Bolapapu Village in Kulawi sub-district and Lonebasa Village in Pipikoro sub-district.

## Project / Programme Components and Financing:

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US\$)
1. Development of supporting climate change adaptation policy with appropriate adaptation measures and good governance to strengthen Sigi District resilience with water-food-energy nexus approach	1.1.1. The establishment of a district-level working group for climate change adaptation	1.1. Improvement of institutional capacity local stakeholders in district-level climate change adaptation collaborative planning and interventions	591,422
	1.1.2. Carrying capacity assessment of local stakeholders for climate change adaptation planning and interventions		
	1.1.3. Institutional capacity building roadmap at district and community level developed		
	1.1.4. Increased capacity of local stakeholders in implementing climate change adaptation interventions		
	1.2.1. Climate change vulnerability assessment using district level data and indicators and climate modeling based on water-energy-food (WEF) nexus approach	1.2. Strengthened governance of cross-sectoral climate change adaptation policy with appropriate adaptation measures and systemic efforts	
	1.2.2. Key Recommendations based on district's climate change vulnerability assessment is mainstreamed and acknowledged in the district 2025-2030 Mid-Term Development Plan (RPJMD)		
	1.2.3. Co-Created District's Action Plan for Climate Change Adaptation (Rencana Aksi Daerah Adaptasi Perubahan Iklim Kabupaten Sigi - RAD-API)		
	1.2.4. Co-Created District Government Work Plan (RKPD) and District Agencies Work Plan (RKPD) based on RPJMD 2021-2024 aligned with interventions under the RAD-API		
	1.2.5. Co-Created District Government Work Plan (RKPD) and District Agencies Work Plan (RKPD) based on RPJMD 2025-2030 aligned with interventions under the RAD-API		
	1.3.1. Learning and Communication Tools targeted for replication co-created based on Monitoring, Evaluation & Learning (MEL) throughout the process	1.3. Establishment of knowledge sharing method for collaborative planning practice for climate change adaptation at district, provincial and national level	
1.3.2. Series of learning and communication activities to encourage replication at district, province and national level			
2. Showcasing an effective District's Action Plan for Climate Change Adaptation with on the ground implementation focusing on	2.1.1. Delivery of analysis and action plan from the district level down to the village-level	2.1. Increased knowledge and capacity of the local community by adopting the District's Action Plan for Climate Change Adaptation	329,194
	2.1.2. Carrying capacity assessment of local stakeholders for climate change adaptation planning and interventions		
	2.1.3. Increased capacity of village institution to prepare and		

two vulnerable villages: Bolapapu Village in Kulawi sub-district and Lonebasa Village in Pipikoro sub-district	implement derivative programs from District's Action Plan for Climate Change Adaptation at the village-level		
	2.2.1. Climate change vulnerability assessment at the village-level based on water-energy-food nexus approach	2.2. Increased economic, social, and ecosystem resilience in the local community through the water-energy-food nexus approach to become a successful model for replication in other areas of the Sigi District	
	2.2.2. Participatory identification of local livelihood productivity improvement as a basis for the village-level action plan for climate change adaptation		
	2.2.3. Co-creation of village-level climate change adaptation action plan based on the water-energy-food potentials		
	2.2.4. Increased community's capacity to access adaptive agricultural practice		
	2.2.5. Increased community's capacity in water management for agricultural needs and as energy source		
	2.2.6. Increased community's capacity to access inclusive and sustainable energy		
	2.2.7. Water-energy-food nexus to support business model of village-level climate adaptation action plan		
3. Project/Programme Execution Cost (9.5%)			
4. Total Project/Programme Cost			920,616
5. Project/Programme Cycle Management Fee charged by the Implementing Entity (8.5%)			78,252
<b>Amount of Financing Requested</b>			<b>998,868</b>



## PART II: PROJECT / PROGRAMME JUSTIFICATION

### A. Project Component

This project aims to improve Sigi District government resilience towards climate risk through the adaptation programming efforts. The project will support the Sigi district government by developing climate vulnerability and capacity assessment on water-energy-food security nexus, which will be the basis for the government to develop the Climate Change Adaptation Action Plan (RAD-API) as mandated by the national government.

The result of the Climate Vulnerability & Capacity Assessment will be further developed into Climate Risk Profile accompanied with policy recommendation on priority adaptation actions to be mainstreamed into the coming Local Mid-term Development Plan (RPJMD) that will be drafted in second semester 2023. The mainstreaming of these priority adaptation actions into RPJMD is crucial as it will be the basis for the RAD-API development and annual planning of the local government.

It is expected that the mainstreaming of priority adaptation actions into the government's action plan and its implementation will complement the existing mitigation effort by Sigi District government and will eventually increase the resiliency of Sigi District towards climate change risks, especially risks related to the water, energy and food security.

In order to convince the decision makers on the benefit of the adaptation actions, through the project, two pilot villages will be selected to showcase the demonstration of how climate action can improve the resiliency of the village both on livelihood and economic fronts.

### B. Economic, Social, and Environmental Benefits

Social benefits:

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.

Sigi is the target for the project based on its vision, "Green Sigi, Sigi Religi, and Sigi Masagena", which aims at balancing the environment and socio-economic development through a community-based economy. The principle tenet of combating absolute poverty ensures that both men and women have better opportunities to raise their income. In that case, investments need to be made for both sexes. Women have a higher propensity to reinvest in family welfare expenditures such as food, education, and health (IIESA, 2014). Therefore women should never be excluded from any policy consideration.

The high climate vulnerability requires a comprehensive strategic action plan as a prerequisite to climate-resilient jurisdiction. Recognition and familiarity are critical. People recognise symptoms, such as a change of seasons, but are indifferent to consider them as climate change impacts. This is contrary to the fact that a shift in the season calendar affects agricultural production (Permana et al., 2013), and health problem follows weather uncertainty. Communities need information, tools, and processes to actively plan for and manage the impacts of climate change on their habitats, landscapes, and the built environment. Incorporating a 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.

Community-driven climate resilience planning is the process in which residents of vulnerable and impacted communities define the complex climate challenges they face and the climate solutions most relevant to their unique assets and threats. The underlying premise is that the more inclusive the process, the more effective those solutions will be. A decisive gender-responsive intervention in a community-based economy will allow data collection and documentation of lessons which will inform jurisdictions on development priorities. The research shall link inclusive low carbon emission solutions to economic and climate change policies (Stern Review, 2010).

Sigi is also selected for its leadership on the national level Lingkar Temu Kabupaten Lestari (LTKL), a district association under the Association of Districts Government in Indonesia (APKASI), focusing on accelerating the implementation of sustainable development. This collaboration will ensure that lessons go beyond districts and influence national-level narratives to development.

The availability of 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. Gender Responsive and Inclusive Climate Risk Profile will be developed to ensure that an effective gender mainstreaming approach is implemented throughout the project design, development and implementation, where the different needs of different gender groups are identified, sensitivities across the gender groups are considered and the interventions are tailored to meet the different needs. This profile will be made accessible to all stakeholders (i.e., braille version, infographic for those unable to read, etc.).

**Economic benefits:** The availability of Gender Responsive and Inclusive Climate Risk Profile and the recommendation of priority adaptation actions will help stakeholders (private sector, community) to anticipate the climate risk such as floods, landslides to secure their business continuity (i.e., production and distribution of goods and services, distribution of goods, crops, etc.). Business continuity also ensured livelihoods of the workers that made up the economic growth in the district, hence economic continuity.

**Environmental benefits:** 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. For example, the floating crops solutions can be implemented by a community of farmers who live in the flooded area.

## **C. Cost Effectiveness**

1. Project component 1: Development of supporting climate change adaptation policy with appropriate adaptation measures and good governance to strengthen Sigi District resilience with water-food-energy nexus approach; with project cost USD 604,147
  - a. Concrete benefit from adaptation
  - b. Avoided lost
  - c. Alternative interventions and compromise
2. Project component 2: Showcasing an effective District's Action Plan for Climate Change Adaptation with on the ground implementation focusing on two vulnerable village: Bolapapu Village in Kulawi Sub-District, and Lonebasa Village in Pipikoro Sub-District; with project cost USD 239,934
  - a. Concrete benefit from adaptation
  - b. Avoided lost
  - c. Alternative interventions and compromise

*(See Annex 1 for detailed Cost Effectiveness)*

## **D. Alignment with National and Sub-National Sustainable Development Strategies**

### **1. National Development Strategies**

#### **a. National Determined Contribution (NDC)**

The proposed project will support Indonesia's commitment towards climate change mitigation and adaptation, as formalized in the National Determined Contribution (NDC) and the NDC roadmap. Through its NDC, Indonesia acknowledges that climate change presents significant risks for Indonesia's natural resources that will impact its food, water and energy security, and that climate change mitigation and adaptation efforts are considered as an integrated concept that is important for building resilience in safeguarding food, water and energy resources.

The Government of Indonesia has also stated its commitment in its NDC to increase climate resilience, focusing on economic resilience, social and livelihood resilience, and ecosystem and landscape resilience. The nation-wide climate vulnerability assessment, conducted by the Directorate General of Climate Change of the Ministry of Environment and Forestry, will serve as the basis for conducting a district-wide climate vulnerability assessment enhanced with the incorporation of local-specific indicators and climate modeling for future impact projection. This assessment will contribute to the national agenda for supporting sub-national jurisdictions in their own formulation and implementation of adaptation plans.

The project will also support the incorporation of district-level adaptation plans into its regional development plans. While this project will support the overall planning and implementation of climate change adaptation strategies in the district, the focus on the water-energy-food nexus will help address targeted national concerns. Upon the development of district-level adaptation plans and strategies, the project will conduct a pilot project in two villages targeting an increase in climate-adaptive food and agricultural production systems, access to energy and water security.

The involvement of local stakeholders through collaboration with a multistakeholder forum, as well as an assessment of local stakeholders' capacity for planning for and implementing climate change adaptation on the ground, will ensure strong participation and capacity increase that will increase the effectiveness and longevity of climate adaptation strategy implementation. Overall, the support that the project will provide to the District government will extend to the development of adaptation plans that increase the economic, social and environmental resilience.

#### **b. National Medium-Term Development Planning (*Rencana Pembangunan Jangka Menengah Nasional* or RPJMN)**

The National Medium-Term Development Planning document (*Rencana Pembangunan Jangka Menengah Nasional* or RPJMN) 2020-2024 specifically outlines seven national development agendas, which includes building the environment and increasing disaster and climate change resilience. The climate change adaptation aspect of this agenda includes increased disaster and climate change resilience. In the RPJMN 2020-2024 narration<sup>15</sup>, the Government of Indonesia states its target to increase the synergy of regional spatial use and 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. The national government also targets strengthened climate change mitigation, disaster management, and resilience, achieved through a number of strategies, including building a culture of disaster awareness and of preparedness from local governments and the people, adapting communities to climate change in disaster-prone areas, and expanding multi-sector partnerships in climate change mitigation and disaster risk reduction.

The proposed project reflects clear alignment with the national development planning agenda, targeting an increase in disaster and climate change resilience at the district and village level. The climate vulnerability assessment can feed into the district's spatial planning, formalized into *Rencana Tata Ruang Wilayah* or RTRW, and strengthen land use strategies that support economic, social and ecosystem resilience towards the impacts of climate change. The capacity assessment and building will also help increase climate disaster awareness and preparedness from district governments and local stakeholders necessary to carry out climate change adaptation planning and interventions.

---

<sup>15</sup>Narasi RPJMN 2020-2024, <https://old.bappenas.go.id/files/rpjmn/Narasi-RPJMN-2020-2024-versi-Bahasa-Inggris.pdf>

### **c. National Action Plans for Climate Change Adaptation (*Rencana Aksi Nasional Adaptasi Perubahan Iklim* or RAN API)**

In 2014, the Ministry of National Development Planning (*Kementerian Perencanaan Pembangunan Nasional/Badan Perencanaan Pembangunan Nasional* or BAPPENAS) has developed a National Action Plans for Climate Change Adaptation (*Rencana Aksi Nasional Adaptasi Perubahan Iklim* or RAN-API). The national level action plan document sets a direction for climate change adaptation plans to minimize the negative impacts of climate change through adaptation strategies, policies, good governance, technology and behaviors, take advantage of the positive impacts presented by climate change and increase resilience and/or reduce the level of vulnerability of the social, economic and environmental systems. The targeted sectors of the action plans, among many others, include increased economic resilience through improved food and energy security.

Regional-level action plans act as building blocks of the national-level action plans and provide local, and Sigi District's climate change adaptation plans will be developed to align with the national-level strategies. The consortium, through this project, will support the district in the development of the action plans, as well as conducting pilot projects that support resilient agriculture and energy independence in two selected vulnerable villages.

### **d. Presidential Regulation no. 98/2021 on Economic Value of Carbon**

The Presidential Regulation on 98/2021, which stipulates the implementation of carbon economic value, further strengthens Indonesia's commitment to achieving its NDC by emphasizing on its efforts in climate change mitigation and adaptation. To achieve its climate change adaptation targets, the Government of Indonesia aims to increase its climate change adaptation capacity, reduce climate change vulnerability and risks, utilize opportunities presented by climate change and reduce potential loss from climate change impacts, achievable through planning, implementation, monitoring and evaluation of climate change adaptation actions. The regulation also stipulates the implementation of climate change adaptation measures 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, and regional action plan and strategy development in Sigi District. The climate vulnerability assessment and climate modeling proposed in this project will provide data and information on current and future vulnerable areas that can be used as baseline information for determining climate adaptation targets and strategies, while the capacity building element of this project aims to ensure the sustainability of the project 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 food, water and energy in pilot areas.

### **e. Strategic Plan of the Directorate General of Climate Change of the Ministry of Environment and Forestry (*Renstra PPI*)**

As outlined in the Strategic Plan of the Directorate General of Climate Change of the Ministry of Environment and Forestry for the period of 2020-2024, the Ministry is committed to increasing nationwide climate resilience through good governance on climate mitigation and adaptation, aiming to increase the total climate-adaptive area. This targeted increase is achievable through accurate data, information and assessment on regional climate vulnerability and risk and formulation of regional-level strategies.

The proposed project will support the Directorate General's efforts through the assessment of local, data-driven climate vulnerability and capacity, which can be used for developing district-level strategies and action plans to increase its food, water and energy security in the face of climate change. Proposed implementation elements of this project aim to serve as a model of how adaptation strategies are implemented at the village level, where food, water and energy security is secured, while aiming to increase economic, social, ecosystem and livelihood resilience in focus 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.

## **2. Sub-National and Regional Development Strategies**

### **a. Regional Medium-Term Development Plan (*Rencana Pembangunan Jangka Menengah Daerah* or RPJMD) 2021-2026**

The development of this project concept took into consideration the national and subnational development planning and strategies. Sigi District's current Medium-Term Development Planning Document (*Rencana Pembangunan Jangka Menengah Daerah* or RPJMD), which covers the District's strategic issues and development strategies for the period of 2021-2026, states the vision of the District 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 it needs to strengthen its disaster resilience, including baseline assessment on vulnerable areas and stakeholder capacity and supporting it in the development of strategies and action plans that both reduce the risk of disasters and increase the communities' resilience.

### **b. Green Sigi (*Sigi Hijau*) Vision**

Sigi Hijau is a policy breakthrough initiated by Sigi District, and a manifestation of Sigi District's commitment to becoming a sustainable District. Through Sigi Hijau, the government of Sigi District has stated its commitment to pursue jurisdictional sustainability, achievable through a number of strategies that include climate change mitigation and adaptation. To achieve this, the government of Sigi has committed to formulating 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 supports exactly this: helping Sigi District develop its own regional action plans for climate change adaptation enhanced with capacity and climate vulnerability assessment and future climate projection modeling for developing more comprehensive, adaptive measures. The incorporation of Sigi Hijau into the district's development planning showcases the district's commitment further, and this will ensure effective implementation and access to funding.

In addition to the regional action plans, the government of Sigi has also committed to reducing climate change risks and impacts through an increase in renewable energy use and a reduction in deforestation and land degradation. The proposed project, which includes a pilot implementation in two selected villages, will target the water-energy-food nexus that aims to increase economic, social, and ecosystem resilience in the local community, as well as supports sustainable, forest-friendly and climate-adaptive agriculture for ensuring food and livelihood security.

## **E. Compliance with National Technical Standard**

This program is following Presidential Regulation (PERPRES) Number 22 of 2017 concerning RUEN (National Energy General Plan), which later became guidelines for RUED (Regional General Energy Plan) at the provincial level through the Central Government Provincial Regulations Sulawesi Number 10 of 2019. The potential for developing renewable energy in Sigi District is also following the direction of Central Sulawesi Governor Regulation Number 25 of 2019 concerning the General Plan of Regional Electricity for 2019-2038, where the priority of rural electricity comes from mini hydro or solar energy.

Consortium Kolaborasi will run the development of the PLTMH -less than 1 MW- (mini hydro) plan through participatory cooperation to improve the community's economy in this program by fulfilling various legal aspects required. It is necessary to fulfill the Statement of Ability to Manage and Monitor the Environment (SPPL) following Minister of Environment and Forestry Regulation number 4 of 2021 to ensure that energy use does not conflict with ecological functions. Then, if planning to develop energy installations in forest areas, a borrow-to-use permit is required through the Ministry of Environment and Forestry.

In addition, the Directorate General of New, Renewable Energy and Energy Conservation (EBTKE) has

compiled Guidelines for Environmental Management in the mini hydropower sector. This guide contains explanations and general instructions for implementing mini hydropower environmental management. The developer must carry out this document at the technical planning, pre-construction, construction, operation, maintenance, and post-operation stages.

The production and processing of agricultural products must adhere to the standards established at the national level in order to increase food security by enhancing the lives of farmers in the community. The Sigi District is home to some of the province's agricultural products, including rice, corn, coffee, and cocoa. The Indonesian National Standard (*Standar Nasional Indonesia/SNI*) already regulates a standard for these four goods. There are currently guidelines for the use of different types of seeds, fertilizers, pesticides, and herbicides along with the guideline in the processing process to generate products that are ready to be sold. It is envisaged that by adhering to this SNI, Sigi District's agricultural productivity—which currently remains below the national average—can be enhanced.

## **F. Identification of Overlapping Projects**

There is no existing effort to support Sigi District specifically on collective actions planning for climate adaptation resiliency and its implementation scenario. There are on-going efforts however to develop a sustainable business model and supply-chain within the jurisdiction to boost regional competitiveness while allowing the district to also protect their important ecosystem. For example, GIZ through different programs are supporting them in developing wider marketing, nationally or internationally for local commodities including coffee and cacao in collaboration with Ministry of Agriculture (*Kementan*) and the local agriculture technology research agency (*Balai Pengkajian Teknologi Pertanian/BPTP*).

## **G. Learning and Knowledge Management**

The project aims to produce several key products targeted to capture process, results and lessons learned from the project – namely (i) summary of process translated into 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 effective learning tools for adults in government settings based on the consortium's previous experience.

Following previous successful learning methods, the dissemination of such tools will be conducted through (i) workshops with opportunities for district participants to participate online and (ii) targeted coaching clinics for interested districts to participate offline under their own 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 or the Sustainable Districts Association which is a caucus under the National Association of District Government in Indonesia (APKASI) since 2017. This provides a larger opportunity for replication and learning across the eight other district members of LTKL as well as other active members of APKASI throughout Indonesia.

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 better integrate results and learning from the projects as policy recommendations from subnational experience and achieve greater replication potential across the country.

From a communication perspective, we plan to collaborate with the Communication and Information Agency as well as 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. This can be treated as a climate adaptation information portal of Sigi District. The content will be mirrored in social media accounts of the district government and consortium members.

## **H. Consultative Process**

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

As the district government is also a partner for our consortium, we have also gotten direct feedback from the Regional Development Planning Agency (BAPPEDA), Regional Disaster Agency (BPBD), Regional Environmental Agency (DLH) and Village Planning and Empowerment Agency (PemDes). Consultation processes were also carried out with key stakeholders at the civil society organizations in the process including Nemubuku, Forum Sudut Pandang, Ibu Foundation, Marcy 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 Designer, Taman Baca Todea, Nobalu, Banua Risigi and KPL Jameana.

Prior to the commencement of the project, we will conduct a preliminary assessment to further refine our approaches and interventions to fit in with the current local contexts. We acknowledge that climate change impacts may be experienced differently by different gender, age and other social groups, and therefore the preliminary assessment will look into climate change impacts on these different groups as well as sensitivities that exist among these groups to tailor our interventions to maximize effectivity and accurately address different needs of these different groups. This will involve a series of consultation through various means deemed appropriate and effective with the local context with representatives from these groups. The participation of the diverse groups will be maintained and ensured throughout the rest of the project, including project design, development and implementation.

## **I. Justification for Funding Requested**

The funding of this project will fill the gap in developing climate adaptation programs in Sigi District. The Regional Action Plan for Climate Change Adaptation (RAD API) does not yet exist for the Sigi District. Therefore, a vulnerability assessment to climate change as well as an assessment of the capacity of community groups and also the local government are required to help the local government of Sigi District deal with climate change. Following that, the RAD API document will be developed while local stakeholders' capacities are also being built up. In order to support the village-level climate adaptation action plan, a pilot implementation of the water-energy-food nexus concept will also be carried out.

**Component 1.** Development of supporting climate change adaptation policy with appropriate adaptation measures and good governance to strengthen Sigi District resilience with water-food-energy nexus approach

**With funding for component 1,** the resilience of Sigi District could be strengthened by understanding the district's vulnerability and increased capacity of the local stakeholders. Using an indicator-based methodology that includes relevant indicators to the local context, a vulnerability assessment to climate change will be carried out. Climate modeling will be added to the climate change sensitivity assessment to assure the district's long-term ability to adapt. Capacity assessment and development will also be carried out to improve the capacity of the local stakeholders.

**Component 2.** Showcasing an effective District's Action Plan for Climate Change Adaptation with on the ground implementation focusing on two vulnerable villages: Bolapapu Village in Kulawi sub-district and Lonebasa Village in Pipikoro sub-district

People who reside in remote, underdeveloped communities with little in the way of public infrastructure are a particularly vulnerable demographic to climate change. The Kulawi Subdistrict's Bolapapu Village and the Pipikoro Subdistrict's Lonebasa Village are two examples of sites that meet these criteria. Due to extreme weather, floods have become more intense in Bolapapu Village in recent years, which has led to a number of losses, including crop failure. However, since PLN has not provided electricity to Lonebasa Village, which can only be reached on two-wheeled vehicles, the availability of sustainable electricity sources is crucial to sustaining the people's way of life. The local communities currently have access to micro-hydro power plants (PLTMH) as a source of electricity that could be potentially used to boost livelihoods.

Bolapapu Village has a population of 2,464 people, comprising 1,232 males and 1,232 females or gender ratio of 100, whereas Lonebasa Village has a population of 864 people that comprises 468 males and 396 females or gender ratio of 118. While the consortium acknowledges the possible differences of how

climate change impacts the different gender groups and their different capacities to adapt, further analyses are needed and will be done in the preliminary assessment to fully understand the local situation.

**With funding for Component 2**, the Water-Energy-Food (WEF) approach intervention will be implemented in the two villages as a pilot. The WEF's initiatives are particularly pertinent to tackling widespread issues, taking advantage of the connectivity of the three sectors to address issues at a much larger scale. One example of the WEF-based projects, which can be implemented in Bolapapu and Lonebasa villages, is supporting sustainable, climate-adaptive agriculture in the villages by promoting forest conservation that can improve irrigation for agriculture and water quality and harnessing renewable energy potential from micro-hydro (PLTMH) that can be used for food processing, which will be generated through effective preservation of healthy water catchments in that area. In the village of Bolapapu, effective water management may also help lower the risk of flooding, while supporting irrigation for agriculture activities.

## J. Sustainability

One of the critical aspects leading to successful implementation of regional and/or national action plans in any theme is a shared understanding of common goals and value-proposition for stakeholders to work collectively in achieving such common goals. In itself, research indicates that the climate crisis is acknowledged as a complex problem which requires a cross-cutting integrated systems approach to address. However, most climate adaptation strategies and plans are still formulated and implemented through sectoral lenses and implemented in silos.

This project aims to enhance sustainability of its outcomes by offering a cross-sectoral approach in designing strategy and plan to enhance climate resiliency in Sigi District. This is done specifically by highlighting impacts of the climate crisis on critical aspects for the district including water, energy and agriculture sector – consistent with the Water-Energy-Food (WEF) approach, in which agriculture and land are proxies of food. The WEF nexus provides a holistic, socio-ecological systems perspective which recognize value of all sectors in equal terms<sup>16</sup>.

*“...Climate determines water availability, potential agricultural production and energy availability, particularly in areas dependent on hydropower. Climate variability and change is the main cause of the fluctuations in water availability as well as access to energy and food resources, triggering trade-offs across the whole WEF nexus...”*

By targeting WEF, it is expected that ‘co-ownership’ and willingness of stakeholders to work collaboratively in addressing the issues can be enhanced. The final result is a cross-sectoral sustainable climate adaptation strategy and plan. The consortium has put high importance in the district and village planning process in Sigi District to ensure sustainability of project outcomes beyond the project. By investing in a co-creation process with capacity development approach in conducting assessment, drafting, integrating and implementing agreed strategy under RAD-API, it also enhances potential sustainability of this project outcome.

---

<sup>16</sup>Climate Change Adaptation through the Water-Energy-Food Nexus in Southern Africa, [Sylvester Mpandeli](#),<sup>1,2</sup> [Dhesigen Naidoo](#),<sup>1</sup> [Tafadzwanashe Mabhaudhi](#),<sup>3</sup> [Charles Nhemachena](#),<sup>4</sup> [Luxon Nhamo](#),<sup>4,\*</sup> [Stanley Liphadzi](#),<sup>1</sup> [Sithabile Hlahla](#),<sup>3</sup> and [Albert T. Modi](#)<sup>3</sup>

## K. Environmental and Social Impact and Risk

Provide an overview of the environmental and social impacts and risks identified as being relevant to the project / programme.

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
<i>Compliance with the Law</i>	<i>Further compliance assessment is not required</i>	The project is consistent with relevant policies and regulations of the government of Indonesia and further support the government's program, which would include: <ul style="list-style-type: none"> <li>- Minister of Environment and Forestry Regulation no. 33/2016 on guidelines for the preparation of climate change adaptation actions</li> <li>- Law 32/2009 on Environmental Protection and Management</li> <li>- Minister of Energy and Mineral Resources Regulation no. 39/2017 on the implementation of physical activities using new and renewable energy and energy conservation.</li> </ul>
<i>Access and Equity</i>	<i>Compliance assessment during the implementation may be required</i>	The project is targeted to provide equitable distribution of access to the community, which provide the local community with a number of benefits, including including raising awareness to climate change vulnerabilities and raising local resilience. Potential gender-based and vulnerable groups involvement in the project may require further assessment.
<i>Marginalized and Vulnerable Groups</i>	<i>Compliance assessment during the implementation may be required</i>	Considering the social benefit of the project, assessment is strongly needed. A comprehensive assessment would ensure that the project involves marginalized and vulnerable groups, which potentially lead to a greater impact.
<i>Human Rights</i>	<i>Further compliance assessment is not required</i>	Indonesia is highly regards the significance of upholding human rights principles. The fundamental rights of the participants will be upheld throughout this project.
<i>Gender Equality and Women's Empowerment</i>	<i>Compliance assessment during the implementation may be required</i>	Considering the social benefit of the project, assessment is strongly needed. The project seeks to advance gender equity and women's empowerment.
<i>Core Labour Rights</i>	<i>Further compliance assessment is not required</i>	Primary employee policy in this project is consistent with the adaptation principle policy
<i>Indigenous Peoples</i>	<i>Compliance assessment during the implementation may be required</i>	Issues and requirements specific to the indigenous groups present in the target communities will be captured during the assessment. In the event that any conflict could arise, the project shall adjust to mitigate and eliminate conflicts
<i>Involuntary Resettlement</i>	<i>Further compliance assessment is not required</i>	The project will strengthen local society adaptation

<i>Protection of Natural Habitats</i>	<i>Further compliance assessment is not required</i>	The project focuses on sustainable development with water-energy-food approach. However, the project shall adjust to mitigate and manage any activities, which would affect the natural habitats
<i>Conservation of Biological Diversity</i>	<i>Further compliance assessment is not required</i>	The project focuses on sustainable development with water-energy-food approach. However, the project shall adjust to mitigate and manage any activities, which would affect the biological diversity
<i>Climate Change</i>	<i>Further compliance assessment is not required</i>	The project is consistent with relevant climate assessment available on Central Sulawesi and further support the existing related program
<i>Pollution Prevention and Resource Efficiency</i>	<i>Further compliance assessment is not required</i>	Primary policy in this project is consistent with the adaptation principle policy
<i>Public Health</i>	<i>Compliance assessment during the implementation may be required</i>	Since the project requires active participation of the society, further compliance assessment during the implementation may be required
<i>Physical and Cultural Heritage</i>	<i>Further compliance assessment is not required</i>	The project location is situated in the vilages. If there is any cultural and physical heritage, further compliance assessment during the implementation may be required
<i>Lands and Soil Conservation</i>	<i>Further compliance assessment is not required</i>	Potential location for the project shall be evaluated prior to the project implementation

## PART III: IMPLEMENTATION ARRANGEMENTS

### A. Arrangements for Project Implementation

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).

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 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).

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.

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 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.

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.

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.

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 platforms.

## B. Financial Risk and Project Management Risk

Describe the measures for financial and project / programme risk management.

Categories	Potential Risk	Level	Mitigation Strategy
Institutional	Different knowledge in the team and changes in personnel	Moderate	<ol style="list-style-type: none"> <li>1. Internalization of organizational culture through SOPs</li> <li>2. Institutional documentation is stored in project reports and accessible storage, such as Google Drive as cloud-based storage and sharing management</li> </ol>
	The targeted program's outcome and output are not met by the end of the grant cycle	Significant	<ol style="list-style-type: none"> <li>1. A monitoring and evaluation mechanism is established and utilized regularly by the team</li> <li>2. Monthly meetings and reports are conducted to identify bottlenecks and solutions in the program implementation</li> </ol>
	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
	Changes in organizational planning or strategy due to the long ongoing COVID-19 pandemic	Moderate	<ol style="list-style-type: none"> <li>1. Communicate actively with partners during the Covid-19 pandemic situation to find a broader perspective in making the best decisions in activities</li> <li>2. 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</li> <li>3. 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</li> <li>4. All our teams are required to have national health insurance (BPJS/JKN-KIS)</li> <li>5. Hold regular check-in to listen to staff needs for motivation and mental health awareness</li> </ol>
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	Using the currency exchange rate according to: <ol style="list-style-type: none"> <li>1. The trend before proposal submission</li> <li>2. The exchange rate according to the time of disbursement</li> <li>3. Readjustment of budget after the disbursement</li> </ol>
	Delays in disbursement will hinder the process of implementation and its impact on the outputs' achievement	Significant	Funding and financing countermeasures
	Disbursement schemes that require initial	Significant	This disbursement scheme needs to be known in advance so that countermeasures

	financing		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	Needed to ensure the involvement of representatives from the vulnerable groups in every activity possible, mainly on-the-ground activities
	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	Join the regional and local Disaster Risk Reduction Forum of Central Sulawesi as the caucus for climate change adaptation accelerator
Environmental	<p>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:</p> <ol style="list-style-type: none"> <li>1.) Liability for personal injury and property damage;</li> <li>2.) Liability for the remediation of environmental impacts;</li> <li>3.) First party loss arising from an environmental impact. (e.g. owned property damage and restoration, business interruption, etc.)</li> <li>4.) Civil fines and penalties as well as compensation for impaired natural resources.</li> </ol>	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	Updating the latest relevant leadership and renew the endorsement from the government based on the existing letter given for the project

## C. Environmental and Social Risk Management

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

<b>Environmental and social principles</b>	<b>Impact and Risks</b>	<b>Mitigation Strategy</b>
<i>Compliance with the Law</i>	-	-
<i>Access and Equity</i>	-	-
<i>Marginalized and Vulnerable Groups</i>	-	-
<i>Human Rights</i>	-	-
<i>Gender Equality and Women's Empowerment</i>	-	-
<i>Core Labour Rights</i>	-	-
<i>Indigenous Peoples</i>	-	-
<i>Involuntary Resettlement</i>	-	-
<i>Protection of Natural Habitats</i>	-	-
<i>Conservation of Biological Diversity</i>	-	-
<i>Climate Change</i>	-	-
<i>Pollution Prevention and Resource Efficiency</i>	-	-
<i>Public Health</i>	-	-
<i>Physical and Cultural Heritage</i>	-	-
<i>Lands and Soil Conservation</i>	-	-

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.

Risks related to Covid infection can be kept minimal by having limited in-person activities. Upon conditions in which in-person activities need to be conducted, adherence to precautions and health protocols will be enforced.

## D. Monitoring and Evaluation

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:

1. Compliance (compliance); whether the project implementation follows existing standards and procedures
2. Examination (auditing); whether the resources and services intended for certain parties (target audience/beneficiaries) are accountable
3. Reports (accounting); generating information or proof of evidence to measure the social changes based on the financial traceability
4. Explanation (narrative); generating storytelling to justify that the project implementation is consistent with the planning and below or beyond the target.

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), 2) Quarterly/Progress Reports, 3) Annual Reports, and 4) Final Report.

### 1. 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.

### 2. Quarterly Reports

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

3. 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.

4. 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.

**E. Result Framework**

(See Annex 3 for detailed project result framework, including milestones, targets and indicators)

**F. Alignment with Adaptation Fund Result Framework**

Project Objective(s) <sup>17</sup>	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
1. Development of supporting climate change adaptation policy with appropriate adaptation measures and good governance to strengthen Sigi District resilience with water-food-energy nexus approach	The capacity of approximately 50 people from relevant stakeholder groups (government, organizations, local communities, universities) for conducting climate change adaptation planning and implementation activities assessed and improved	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Four types of targeted stakeholder groups with increased capacity to minimize exposure to climate variability risks	171,775
	Two knowledge products on District-wide climate change vulnerability and adaptive capacity, and recommended adaptation options encourage district-wide climate change adaptation planning and implementation	Outcome 7: Improved policies and regulations that promote and enforce resilience measures	7. Climate change priorities are integrated into regional development strategy	25,662
	One Regional Action Plans on Climate Change Adaptation ( <i>Rencana Aksi Daerah Adaptasi Perubahan Iklim</i> or RAD-API) developed with collaboration with district government and multistakeholder working group	Outcome 7: Improved policies and regulations that promote and enforce resilience measures	7. Climate change priorities are integrated into regional development strategy	143,021
	Regional Action Plans on Climate Change Adaptation ( <i>Rencana Aksi Daerah Adaptasi Perubahan Iklim</i> or RAD-API) mainstreamed into 3 district-level work and/or development planning documents	Outcome 7: Improved policies and regulations that promote and enforce resilience measures	7. Climate change priorities are integrated into regional development strategy	90,411
	Series of learning and communication activities targeting 50 people at the district, province and national level conducted to encourage replication and upscaling	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Fifty (50) people (targeted population) aware of predicted adverse impacts of climate change, and of appropriate responses	69,917
2. Showcasing an effective District's Action Plan for Climate Change Adaptation with on the	The capacity of approximately 16 people from village institutions in pilot villages for conducting climate change adaptation planning and implementation activities assessed and improved	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Two village level institutions with increased capacity to minimize exposure to climate variability risks	

<sup>17</sup>The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology, but the overall principle should still apply

ground implementation focusing on two vulnerable villages: Bolapapu Village in Kulawi sub-district and Lonebasa Village in Pipikoro sub-district				261,102 (lump sum of project implementation costs in two pilot villages)
	Four knowledge products on village-wide climate vulnerability and adaptation options encourage village-wide climate change adaptation planning and implementation	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Fifty (50) people (targeted population) aware of predicted adverse impacts of climate change, and of appropriate responses	
	20% of families in pilot villages have their household income increased from climate-adaptive agriculture	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 20% of households and communities having more secure (increased) access to livelihood assets  6.2. 20% of targeted population with sustained climate-resilient livelihoods	
	20% of families' capacity in water management increased	Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	5. Ecosystem services and natural assets for good water management maintained or improved under climate change and variability-induced stress	
	20% of families gain access to local sustainable energy sources	Outcome 4: Increased adaptive capacity within relevant development and natural resource sectors	4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	

Project Outcome(s)	Project Outcome Indicator(s)	Fund Output	Fund Output Indicator	Grant Amount (USD)
1.1. Improvement of institutional capacity local stakeholders in district-level climate change adaptation collaborative planning and interventions	The capacity of approximately 50 people from relevant stakeholder groups (government, organizations, local communities) for conducting climate change adaptation planning and implementation activities assessed and improved	Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1.1. Three types of climate change risk reduction actions or strategies (focusing on water-energy-food nexus) introduced at local level	171,775
1.2. Strengthened governance of cross-sectoral climate change adaptation policy with appropriate adaptation measures and systemic efforts	Two knowledge products on District-wide climate vulnerability and adaptive capacity, and recommended adaptation options encourage district-wide climate change adaptation planning and implementation	Output 1: Risk and vulnerability assessments conducted and updated at a national level	1.1. One district-level vulnerability and capacity assessment project that conduct and update risk and vulnerability assessments	25,662
	One District Action Plan for Climate Change Adaptation (RAD API) developed and incorporated with recommended adaptation options	Output 7: Improved integration of climate-resilience strategies into country development plans	7.1. One regional action plan introduced or adjusted to address climate change risks	143,021
	Three district government's annual work and/or development plans incorporate the district's climate change adaptation strategies	Output 7: Improved integration of climate-resilience strategies into country development plans	7.2. Three targeted working and/or development strategies with incorporated climate change priorities enforced	90,411

1.3. Establishment of knowledge sharing method for collaborative planning practice for climate change adaptation at district, provincial and national level	Series of learning and communication activities targeting 50 people at the district, province and national level, conducted to encourage replication and upscaling	Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1. Fifty (50) people (targeted population) aware of predicted adverse impacts of climate change, and of appropriate responses	69,917
2.1. Increased knowledge and capacity of the local community by adopting the District's Action Plan for Climate Change Adaptation	The capacity of approximately 16 people from village institutions in pilot villages for conducting climate change adaptation planning and implementation activities assessed and improved	Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1.1. Three types of climate change risk reduction actions or strategies (focusing on water-energy-food nexus) introduced at local level	261,102 (lump sum of project implementation costs in two pilot villages)
2.2. Increased economic, social, and ecosystem resilience in the local community through the water-energy-food nexus approach to become a successful model for replication in other areas of the Sigi District	Four knowledge products on village-wide climate vulnerability and adaptation options encourage village-wide climate change adaptation planning and implementation	Output 1: Risk and vulnerability assessments conducted and updated at a national level	1.1. One village-level vulnerability and capacity assessment project that conduct and update risk and vulnerability assessments	
	20% of families in pilot villages have their household income increased from climate-adaptive agriculture	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.2. Climate-adaptive income sources from agriculture for households generated under climate change scenario	
	20% of families' capacity in water management increased	Output 5: Vulnerable physical, natural, and social assets strengthened in response to climate change impacts, including variability	5.1. Natural resource assets for ensuring sustainable water supply and management created, maintained or improved to withstand conditions resulting from climate variability and change	
	20% of families gain access to local sustainable energy sources	Output 4: Vulnerable physical, natural, and social assets strengthened in response to climate change impacts, including variability	4.1.1. Infrastructure to generate sustainable energy developed or modified to respond to new conditions resulting from climate variability	

## G. Budget

(See Annex 3 for detailed project Budget)

## H. Disbursement Schedule

(See Annex 4 for detailed project Disbursement Schedule)

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

### A. Record of endorsement on behalf of the government<sup>18</sup>

*Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:*

<b>Mohamad Irwan Lapatta, S.Sos,M.Si</b> <i>Head of Sigi District</i>	Date: July 13, 2022
<b>Dr. Samuel Yansen Pongi, SE.,M.Si</b> <i>Deputy Head of Sigi District</i>	Date: July 7, 2022
<b>Drs. Sutopo Sapto Condro, MT</b> <i>Head of Sigi District's Development Planning and Research Agency</i>	Date: July 1, 2022
<b>Afit Lamakarate, ST.,M.Si</b> <i>Head of Sigi District's Environmental Agency</i>	Date: June 27, 2022
<b>Johansyah Halman, ST</b> <i>Secretary of Sigi District's Disaster Management Agency (Implementing Department)</i>	Date: July 6, 2022

<sup>18</sup> 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.

**B. Implementing Entity certification** *Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address*

<p>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 (.....list here.....) and subject to the approval by the Adaptation Fund Board, <u>commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund</u> and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.</p>

<p><i>Name &amp; Signature</i></p> <p>Implementing Entity Coordinator</p>	
<p>Date: <i>(Month, Day, Year)</i></p>	<p>Tel. and email:</p>
<p>Project Contact Person:</p>	
<p>Tel. And Email:</p>	

## Annexes:

### Annex 1. Cost Effectiveness

Project Component	Output	Benefit of Project Component	Avoided Lost	Alternative Intervention
1. Development of supporting climate change adaptation policy with appropriate adaptation measures and good governance to strengthen Sigi District resilience with water-food-energy nexus approach	<p>1.1. Improvement of institutional capacity local stakeholders in district-level climate change adaptation collaborative planning and interventions</p> <p>1.2. Strengthened governance of cross-sectoral climate change adaptation policy with appropriate adaptation measures and systemic efforts</p> <p>1.3 Establishment of knowledge sharing method for collaborative planning practice for climate change adaptation at district, provincial and national level</p>	<p>Adaptation policy may support climate risk proofing of infrastructure (transport, energy) to ensure that development benefits are not degraded over the expected lifetime of the investment<sup>19</sup>.</p> <p>The economic benefits of adaptation are sustained or increased agricultural production, higher household incomes, enhanced environmental services, protection of the asset base, and less vulnerability to extreme weather events<sup>20</sup>.</p>	Climate change will cause increasingly severe economic and social impacts. These impacts relate, for example, to changes in labour and agricultural productivity, health effects, loss of capital assets, displacement of people and changes to ecosystems.	Instead of designing projects to change the practices of marginalised populations, learning processes within organisations and with marginalised populations must be placed at the centre of adaptation objectives.
2. Showcasing an effective District's Action Plan for Climate Change Adaptation with on the ground implementation focusing on two vulnerable villages: Bolapapu Village in Kulawi sub-district and Lonebasa Village in Pipikoro sub-district	<p>2.1 Increased knowledge and capacity of the local community by adopting the District's Action Plan for Climate Change Adaptation</p> <p>2.2 Increased economic, social, and ecosystem resilience in the local community through the water-energy-food nexus approach to become a successful model for replication in other areas of the Sigi District</p>	<p>Community-based adaptation (CBA) provides information and concrete examples on potential impacts of climate change and mitigative measures which are location specific and community managed. CBA also provides information needs which can be shared and replicated in an appropriate format and manner acceptable by communities<sup>21</sup>.</p> <p>CBA recognises the inherent adaptive capacity which exists within vulnerable populations and seeks to build on this. Adaptive capacity is central to building resilience because it involves the processes and capacities which enable continued response to a changing and uncertain climate over time<sup>22</sup>.</p>	Livelihood lost for the rural communities, especially those who have high reliance on the natural resources. These communities inherently vulnerable to climate change. Rising temperatures will have negative impacts on labor productivity and human health.	Effective adaptation to change requires the efficient use of land, water, energy, and other vital resources, and coordinated efforts to minimize trade-offs and maximize synergies.

<sup>19</sup>[https://assets.publishing.service.gov.uk/media/57a08adee5274a31e0000806/DEWPoint\\_A0406\\_Jan2011\\_Co\\_Benefits\\_of\\_adaptation\\_v1-1.pdf](https://assets.publishing.service.gov.uk/media/57a08adee5274a31e0000806/DEWPoint_A0406_Jan2011_Co_Benefits_of_adaptation_v1-1.pdf)

<sup>20</sup>[https://www.unclearn.org/wp-content/uploads/library/ifad\\_adaptation\\_farmers.pdf](https://www.unclearn.org/wp-content/uploads/library/ifad_adaptation_farmers.pdf)

<sup>21</sup><https://www.adaptation-undp.org/community-based-adaptation>

<sup>22</sup>[https://careclimatechange.org/wp-content/uploads/2014/08/CBA\\_Brief\\_ALP\\_English.pdf](https://careclimatechange.org/wp-content/uploads/2014/08/CBA_Brief_ALP_English.pdf)

## Annex 2. Results Framework

Outcome/Output	Indicator	Baseline	Target	Source of Verification	Risk and Assumption
<b>Component 1. Development of supporting climate change adaptation policy with appropriate adaptation measures and good governance to strengthen Sigi District resilience with water-food-energy nexus approach</b>					
<b>Outcome 1.1. Improvement of institutional capacity local stakeholders in district-level climate change adaptation collaborative planning and interventions</b>	<b>A jurisdiction becomes climate resilient, with strong institutional capacity prepared for planning and implementing climate change adaptation interventions</b>	<b>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</b>	<b>Sigi District becomes a climate resilient jurisdiction with strong institutional capacity prepared for planning and implementing climate change adaptation interventions</b>	<b>Assessment reports, activity reports, decision letters, documentation</b>	-
Output 1.1.1. The establishment of a district-level working group for climate change adaptation	One district-level working group for climate change adaptation established for spearheading climate change adaptation efforts in the district	0	One district-level working group for climate change adaptation established and operating	Activity report, documentation, Team development decision letter (SK pembentukan tim)	-
Output 1.1.2. Carrying capacity assessment of local stakeholders for climate change adaptation planning and interventions	Institutional Capacity Assessment on climate adaptation planning and intervention with focus on water-energy-food nexus) used as the basis for capacity building	0	One assessment report on institutional capacity on climate adaptation planning and intervention	Assessment report, documentation	-
Output 1.1.3. Institutional capacity building roadmap at district and community level developed	Institutional capacity strengthening roadmap developed for district level and serves as a basis for institutional capacity building	0	One institutional capacity strengthening roadmap document	Copy of document	-
Output 1.1.4. Increased capacity of local stakeholders in implementing climate change adaptation interventions	The capacity of people from relevant stakeholder groups (government, organisations, local communities, universities) for conducting climate change adaptation planning and implementation activities assessed and improved	Unknown; to be assessed in the project	Capacity improvement of approximately 50 people from relevant stakeholder groups (government, organisations, local communities, universities) for conducting climate change adaptation planning and implementation activities improved	Activity report, documentation,	-
<b>Outcome 1.2. Strengthened governance of cross-sectoral climate change adaptation policy with appropriate adaptation measures and systemic efforts</b>	<b>A jurisdiction becomes climate resilient, with strong enabling condition in place for planning and implementing climate change adaptation interventions</b>	<b>The relevant climate adaptation interventions have not been identified, and the enabling condition for pursuing accurately identified climate adaptation interventions is inadequate</b>	<b>Sigi District becomes a climate resilient jurisdiction with strong enabling condition in place for planning and implementing climate change adaptation interventions</b>	<b>Assessment reports, activity reports, documentation</b>	-

Output 1.2.1. Climate change vulnerability assessment using district level data and indicators and climate modeling based on water-energy-food (WEF) nexus approach	A district-wide climate change vulnerability assessment incorporating district-level data and indicators and climate modeling used to encourage district-wide climate change adaptation planning and implementation	0	One district-wide climate change vulnerability assessment report	Copy of assessment report	-
Output 1.2.2. Key recommendations based on district's climate change vulnerability assessment is mainstreamed and acknowledged in the district 2025-2030 Mid-Term Development Plan (RPJMD)	Policy briefs and recommendations on climate change adaptation priority actions developed	0	One policy brief document, detailing recommendations on climate change adaptation priority actions	Copy of document	-
Output 1.2.3. Co-Created District's Action Plan for Climate Change Adaptation (Rencana Aksi Daerah Adaptasi Perubahan Iklim Kabupaten Sigi - RAD-API)	One Regional Action Plans on Climate Change Adaptation ( <i>Rencana Aksi Daerah Adaptasi Perubahan Iklim</i> or RAN-API) developed with collaboration with district government and multistakeholder working group	0	One Regional Action Plans on Climate Change Adaptation ( <i>Rencana Aksi Daerah Adaptasi Perubahan Iklim</i> or RAN-API)	Copy of document	-
Output 1.2.4. Co-Created District Government Work Plan (RKPD) and District Agencies Work Plan (RKPD) based on RPJMD 2021-2024 aligned with interventions under the RAD-API	Action plan activities related to climate change adaptation included in District Government Work Plan (RKPD) and District Agencies Work Plan (RKPD) based on RPJMD 2021-2024	0	One District Government Work Plan (RKPD) and District Agencies Work Plan (RKPD) based on RPJMD 2021-2024 aligned with interventions under the RAD-API	Activity report, documentation	-
Output 1.2.5. Co-Created District Government Work Plan (RKPD) and District Agencies Work Plan (RKPD) based on RPJMD 2025-2030 aligned with interventions under the RAD-API	Action plan activities related to climate change adaptation included in District Government Work Plan (RKPD) and District Agencies Work Plan (RKPD) based on RPJMD 2025-2030	0	One District Government Work Plan (RKPD) and District Agencies Work Plan (RKPD) based on RPJMD 2025-2030 aligned with interventions under the RAD-API	Activity report, documentation	Political commitment and willingness for pursuing climate adaptive district remains strong
<b>Outcome 1.3. Establishment of knowledge sharing method for collaborative planning practice for climate change adaptation at district, provincial and national level</b>	<b>Knowledge-sharing methods developed and used across regions as a medium for exchanging learnings of successful measures</b>	<b>There is a lack of knowledge-sharing media for learning exchanges across regions, hindering replication and upscaling of successful efforts</b>	<b>Learnings from the planning and implementation processes of climate change adaptation measures in Sigi District are used for replication at the district, provincial and national levels</b>	<b>Activity reports, documentation</b>	-
Output 1.3.1. Learning and Communication Tools targeted for replication co-created based on Monitoring, Evaluation & Learning (MEL) throughout the process	Learning and Communication Tools targeted for replication co-created based on Monitoring, Evaluation & Learning (MEL) throughout the process	0	One set of Learning and Communication Tools targeted for replication co-created based on Monitoring, Evaluation & Learning (MEL) throughout the process	Copy of document	-
Output 1.3.2. Series of learning and communication activities to encourage replication at the district, provincial and national levels	Learning and communication activities	0	Two National events with 3 regional events at provincial and district level	Activity report, documentation	-

**Component 2. Showcasing an effective District's Action Plan for Climate Change Adaptation with on the ground implementation focusing on two vulnerable villages: Bolapapu Village in Kulawi sub-district and Lonebasa Village in Pipikoro sub-district**

<b>Outcome 2.1. Increased knowledge and capacity of the local community by adopting the District's Action Plan for Climate Change Adaptation</b>	<b>Local communities are empowered to plan and implement effective climate change adaptation measures</b>	<b>Local communities possess inadequate knowledge and capacity for planning and implementing local climate change adaptation measures</b>	<b>Local communities in Bolapapu and Lonebasa villages understand and are empowered to plan and implement effective climate change adaptation measures at the village level</b>	<b>Assessment reports, activity reports, documentation</b>	-
Output 2.1.1. Delivery of analysis and action plan from the district level down to the village-level	Activities based on the action plan included in village development plan	0	One document plan that include climate change adaptation action plan	Activity report, Documentation	Rejection from local communities. Such risk will be mitigated through co-creation of village-level climate change adaptation plans and interventions.
Output 2.1.2. Carrying capacity assessment of local stakeholders for climate change adaptation planning and interventions	Institutional Capacity Assessment on climate adaptation planning and intervention with focus on water-energy-food nexus) used as the basis for capacity building	0	Two assessment reports on institutional capacity on climate adaptation planning and intervention for Bolapapu and Lonebasa villages	Assessment reports, documentation	-
Output 2.1.3. Increased capacity of village institution to prepare and implement derivative programs from District's Action Plan for Climate Change Adaptation at the village-level	The number of people increased capacity from village institutions in Bolapapu and Lonebasa Villages for conducting climate change adaptation planning and implementation activities assessed and improved	Unknown; to be assessed in the project	Capacity improvement of approximately 50 people from village institutions in Bolapapu and Lonebasa Villages for conducting climate change adaptation planning and implementation activities improved	Activity report, Documentation	-
<b>Outcome 2.2. Increased economic, social, and ecosystem resilience in the local community through the water-energy-food nexus approach to become a successful model for replication in other areas of the Sigi District</b>	<b>The water-energy-food nexus approach is applied for increasing climate resilience at the village level</b>	<b>Strategies using the water-energy-food nexus approach is not applied for increasing climate resilience at the village level</b>	<b>Strategies using the water-energy-food nexus approach are applied for increasing climate resilience at the village level</b>	<b>Assessment reports, activity reports, documentation</b>	-
Output 2.2.1. Climate change vulnerability assessment at the village-level based on water-energy-food nexus approach	Two village-level climate change vulnerability assessment reports for Bolapapu and Lonebasa villages incorporating village-level data and indicators and climate modeling used to encourage village-wide climate change adaptation planning and implementation	0	Two village-level climate change vulnerability assessment reports	Copies of assessment report	-
Output 2.2.2. Participatory identification of local livelihood productivity improvement as a basis for the village-level action plan for climate change adaptation	Current local livelihood productivity identified and analyzed to serve as the basis for improvement measures that are climate-adaptive	0	Two reports detailing identified livelihood productivity improvement measures and recommendations for	Activity report, Documentation	-

			Bolapapu and Lonebasa villages		
Output 2.2.3. Co-creation of village-level climate change adaptation action plan based on the water-energy-food potentials	Recommendations for priority climate change adaptation action plans developed for pilot implementation in Bolapapu and Lonebasa villages	0	Two recommendation reports for climate change adaptation action plans for Bolapapu and Lonebasa villages	Copies of reports	-
Output 2.2.4. Increased community's capacity to access adaptive agricultural practices	The number of families in pilot villages have their household income increased from climate-adaptive agriculture	0	20% of households and communities having more secure (increased) access to adaptive agricultural practices  20% of targeted population with sustained agriculture-based climate-resilient livelihoods	Activity report, Documentation	Uncertainty in local communities' willingness to apply new practices.
Output 2.2.5. Increased community's capacity in water management for agricultural needs and as energy source	Number of families' capacity in water management increased	0	20% of families' capacity in water management increased		Uncertainty in local communities' willingness to apply new practices.
Output 2.2.6. Increased community's capacity to access inclusive and sustainable energy	Number of families gain access to local sustainable energy sources	Unknown; to be assessed in the project	20% of families gaining access to local sustainable energy sources		Uncertainty in local communities' willingness to apply new practices.
Output 2.2.7. Water-energy-food nexus to support business model of village-level climate adaptation action plan	Sustainable, climate-adaptive businesses implemented at Bolapapu and Lonebasa villages using the WEF approach	Unknown; to be assessed in the project	Establishment of climate-adaptive businesses in Bolapapu and Lonebasa villages		Reliance of business success on stakeholders' commitment.

### Annex 3. Project Budget

Program Components	Expected Outputs	Activities	Cost Components										Total
			Lead Delivery Partner	Staff time	Consultant services	Travel & Per diem	Procurement of goods	Office running cost	Workshop & Meeting	Publication	Project Execution cost (9.5%)	Others	
<b>Strengthening Sigi district resilience, particularly its water, food and energy security, towards climate change impacts through appropriate and localized climate change adaptation plan and intervention</b>	District-level working group for climate change adaptation established	Establishment of District Working Group for Climate Change Adaptation	LTKL	14.150	6.750	3.100	0	0	20.434	0	4.221	0	51.059
	Assessment of local stakeholder capacity for carrying out climate change adaptation planning and interventions developed	Institutional Capacity Assessment on climate adaptation planning and intervention with focus on water-energy-food nexus)	AWS-EII-Koaksi	18.834	34.800	16.583	0	0	400	1.000	6.804	0	78.420
	Institutional capacity building roadmap at district and community level developed	Institutional Capacity Strengthening Roadmap development for district and community level	LTKL-AWS-EII-Koaksi	10.850	17.400	15.033	0	0	0	1.500	4.254	0	49.038
	Increased capacity of local stakeholders in implementing climate change adaptation interventions	Capacity building/Training series for District officials and wider stakeholders (NGOs, Private, Universities, etc)	AWS-EII-Koaksi	10.500	12.400	14.672	50	0	1.600	1.250	3.845	0	44.317
	Climate change vulnerability assessment developed, using district level data and indicators, and enhanced with climate modeling	Climate Risk Vulnerability Assessment	AWS-EII-Koaksi	23.935	44.400	14.672	500	0	0	1.000	8.028	0	92.535
	Recommendation on Climate change adaptation action plans fully developed, agreed upon by relevant stakeholders, and formalized into Regional Action Plan for Climate Change Adaptation	Policy brief and recommendation development on climate change adaptation priority actions	LTKL-AWS-EII-Koaksi	13.684	17.200	13.122	50	0	800	1.250	4.380	0	50.486

Recommendations for Climate Change Adaptation plan and intervention are mainstreamed in the development of RPJMD drafting process.	Integration of project recommendation into RPJMD Formulation processes	LTKL-AWS-EII-Koaksi	17.300	2.400	22.422	0	0	800	1.000	4.173	0	48.095
	Priority recommendations integration process into District Government Work Plan (RKPD) and District Agencies Work Plan (Renja) based on RPJMD 2021-2026	LTKL-EII	6.900	2.400	10.022	0	0	0	0	1.836	0	21.158
	Priority recommendations integration process into District Government Work Plan (RKPD) and District Agencies Work Plan (Renja) based on RPJMD 2025-2030	LTKL-EII	6.900	2.400	10.022	0	0	0	0	1.836	0	21.158
Communication and Learning Products to aim for province and country-wide replication	Monitoring, Evaluation & Learning (MEL) throughout the process to be summarized and developed into learning and communication tools	LTKL-Koaksi	12.000	9.000	10.850	0	0	4.293	0	3.434	0	39.577
	Development of learning and communication tools including but not limited to (i) decision-tree infographic, (ii) work sheet(s) and (iii) case-study examples.	LTKL-Koaksi	10.500	9.000	0	0	0	954	2.982	2.226	0	25.662
	Series of learning and communication activities to encourage replication at district, province and national level.	LTKL-Koaksi	18.000	9.000	13.800	0	0	23.051	0	6.066	0	69.917

<b>Improved climate change resilience of the local community, project implementation at 2 villages</b>	Climate risk adaptation demonstrated in 2 pilot villages	1. Community awareness on the importance of Gender responsive and inclusive climate change adaptation on water-energy-food nexus raised 2. Community capacity on identifying risk, appropriate solutions, planning, implementation and managing knowledge is increased 3. Village adaptation action plan developed 4. (optional) implementation of Village adaptation plan demonstrated (can be software or hardware activity identified in the village plan)	AWS-EII-Koaksi	43.969	90.750	61.254	25.250	3.000	9.000	5.226	22.653	0	261.102
<b>Project Management</b>	Quarterly Narrative report developed	Quarterly Narrative report development	LTKL-AWS-EII-Koaksi	14.844	960	0	0	0	0	0	1.501	0	17.305
	Quarterly Financial Report Developed	Quarterly Financial report development	LTKL-AWS-EII-Koaksi	7.244	960	0	0	0	0	0	779	0	8.983
	Project Audit report provided	Project audit conducted	Appointed KAP	25.000	0	0	0	0	0	0	2.375	0	27.375
	Project Management Dashboard developed	Project Management Dashboard development and operationalization	LTKL-AWS-EII-Koaksi	6.900	7.400	0	0	0	0	0	1.359	0	14.429
											79.769		920.616
										<b>8,5%</b>			78.252
										<b>Total</b>			<b>998.868</b>





MINISTRY OF ENVIRONMENT AND FORESTRY  
DIRECTORATE GENERAL OF CLIMATE CHANGE

Manggala Wanabakti Building Block VII 12<sup>th</sup> Floor, Jalan Gatot Subroto – Senayan, Jakarta 10270  
Phone +62 21 5730144 Fax. : +62 21 5720194

Website : <http://ditjenppi.menlhk.go.id>

email : [tusetditppi@gmail.com](mailto:tusetditppi@gmail.com);

Our Ref. : *S. 282/PP1/ARI/PP1.0/8/2022*  
Attachments :  
Subject : Letter of endorsement

Jakarta, 5 August 2022

To:  
The Adaptation Fund Board  
c/o Global Environment Facility  
Mail stop: N 7-700  
1818 H Street NW  
Washington DC 20433, USA

Dear Board Member,

Directorate General of Climate Change Ministry of Environment and Forestry as the National Designated Authority of Adaptation Fund in Indonesia through *Kemitraan* – Partnership for Governance Reform as the National Implementing Entity, have received and appraised 37 incoming concept notes.

After a thorough assessment process of the incoming concept notes, we come to the decision that the following 10 (ten) concept notes from 10 (ten) different organizations have met and are in accordance with the national priorities in the implementation of adaptation programs and activities to increase adaptive capacity and to reduce the impact and risks of climate change in vulnerable regions in Indonesia:

1. Yapeka; *Ecosystem-based Adaptation to Support Climate Resilience in Coastal and Small Islands of Rote Ndao and Sabu Raijua Districts in the Savu Sea*
2. TLKM; *Sustainable Landscape Governance; Towards Climate Resilience of Community in Tempe Lake Ecosystem*
3. KAPASITAS; *Adaptation to climate change through integrated forest management and sericulture business to achieve ecosystem resilience to food security for the Lake Tempe Catchment Area Community*
4. Garis Biru; *Strengthening the Adaptive Capacity of Coastal Village Communities in Supporting Food Security as a Response to Climate Change Through Stakeholder Elaboration Actions in West Sulawesi Province*
5. Sajogyo Institute; *Collaboration for the Conservation of Cimandiri Watershed Landscapes through the Potential of Silvopasture and Community Agroforestry*
6. KOAKSI; *Building Climate Resilient District in Indonesia: Case of Sigi District*
7. KEMITRAAN; *Village Based Coastal Adaptation and Resilience in Lombok Province of West Nusa Tenggara*
8. HUMA; *Change Climate and Adaptation in the Buffer Area of the New National Capital*
9. Mitra Aksi; *Increasing the resilience of smallholders from climate impacts through Smart Agriculture based on Livelihood Diversification in Indonesia*
10. KUAT (KARSA); *Strengthening Community Adaptation toward Climate Change through ProKlim in Ecoregion Neck of Sulawesi Island*

With this consideration, and in my capacity as the National Designated Authority of Adaptation Fund in Indonesia, I recommend the above proposals be granted support from the Adaptation Fund Board. All those programs will be executed by each of the submitting entities under the supervision of *Kemitraan* – Partnership for Governance Reform.

Sincerely Yours,



**Laksmi Dhewanthi**  
Director General of Climate Change  
Ministry of Environment and Forestry  
as Indonesia Designated Authority of Adaptation Fund

Copy to:  
*Kemitraan* (Partnership Governance Reform in Indonesia)



# BUPATI SIGI

Sigi, 13 July 2022

Number : 658/128/SETDA

Re. : Support for Proposal 'Building Climate Resilient District in Indonesia : Case of Sigi District, Indonesia' submitted to Adaptation Fund

**The Adaptation Fund Board Secretariat  
1818 H Street NW  
MSN N7-700  
Washington, D.C., 20433 – USA**

Dear Sir/Madam,

On behalf of the district of Sigi in Central Sulawesi Province, Indonesia, I am writing to express support for the proposal entitled 'Building Climate Resilient District in Indonesia : Case of Sigi District, Indonesia' submitted to Adaptation Fund by consortium of partners including Koaksi Indonesia Foundation, Earth Innovation Institute, Alliance for Water Stewardship Indonesia as well as our sustainable districts association, Lingkar Temu Kabupaten Lestari or LTKL. We consider the program's focus on enhancing our resiliency towards climate crisis through innovative adaptation measures is critical for the health of the planet and aligned with priorities of our district under the Green Sigi vision and mission.

As our district is facing high climate risk with almost all area of Sigi district is vulnerable to disaster, particularly flood and landslide, we have worked at a jurisdictional scale to achieve sustainable land use for long-term ecosystem services and livelihood security since 2017 under the umbrella of Green Sigi Vision. The major programmatic highlights of this collaboration with the consortium hopefully can support us in the following focus (i) Regional Action Plan for Climate Adaptation (RAD-API), (ii) Integration of RAD-API into planning documents of Sigi District and (iii) Innovation on sustainable agriculture and business model at village level particularly with Micro Small Medium Scale Enterprises (MSMEs) inclusion as case-study for RAD-API.

We also recognized that the consortium represents credible organizations with expertise and priorities on low carbon and climate resilient development model, regional competitiveness and community development, including smallholders and MSMEs on Food-Water and Energy Nexus. Smallholders and MSMEs are stewards of the land, soil, and forests thus will be fully incorporated in our efforts to promote regenerative farming, protect biodiversity and ensure a reduced deforestation supply chain pledge by our district. We look forward to ongoing collaboration with the consortium to implement the results along with our Green Sigi multistakeholders platform should the proposal be approved. As founder and leading member of LTKL, we also believe that other district members of LTKL can also replicate the results and implement development scenario which balances economic, social, and environmental aspects through multi-stakeholder collaboration within each district and among the district members.

Hope the above can be of consideration. Should there be a need for further information, please do not hesitate to contact the District of Sigi through **MOHAMAD AFIT**, +62 813 5448 8664 | email : [kadis\\_dlh@sigikab.go.id](mailto:kadis_dlh@sigikab.go.id)

Yours sincerely,



Mohamad Irwan  
Head of Sigi District



**Project Formulation Grant (PFG)**

Submission Date: **August 8, 2022**

Adaptation Fund Project ID:

Country/ies: **Indonesia**

Title of Project/Programme: **Building Climate Resilient District in Indonesia: Case of Sigi District.**

Type of IE (NIE/MIE): **NIE**

Implementing Entity: **Kemitraan – The Partnership for Governance Reform**

Executing Entity/ies: **Konsorsium Lingkungan Adaptif, Berketahanan, Inovatif, dan Partisipatif – CONSORTIUM ON ADAPTIVE, RESILIENT, INNOVATIVE AND PARTICIPATIVE ENVIRONMENT (KOLABORASI): Koaksi Indonesia, Lingkar Temu Kabupaten Lestari (LTKL), Earth Innovation Institute), Alliance for Water Stewardship Indonesia in partnership with the District of Sigi, Central Sulawesi**

**A. Project Preparation Timeframe**

Start date of PFG	<b>1 September 2022</b>
Completion date of PFG	<b>30 November 2022</b>

**B. Proposed Project Preparation Activities (\$)**


Describe the PFG activities and justifications:

List of Proposed Project Preparation Activities	Output of the PFG Activities	USD Amount
Data collection for baseline and analysis for each component	Collected data required to set up the basis for argument formulation and programme justification in the proposal	\$ 13.793
Travel meetings required for data collection and consultation	Confirmation of assumptions and situation on the ground before programme document finalized	\$ 12.931
Expert hiring for proposal writing	Assist Kemitraan in writing and use of collected baseline data to justify programme and enhance the proposal	\$ 19.655
Focus Group Discussion with Multistakeholders	To receive feedback and input on the Goal, Objective, Outcome and Output of the proposal which to be submitted to AF, so as to ensure it is in line with the	\$ 3.621

	national programmes and strategies of climate change adaptation	
Total Project Formulation Grant		\$ 50.000

### C. Implementing Entity

This request has been prepared in accordance with the Adaptation Fund Board's procedures and meets the Adaptation Fund's criteria for project identification and formulation

Implementing Entity Coordinator, IE Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Laode M. Syarif, KEMITRAAN		08 August 2022	Dewi Rizki	+6221-22780580	dewi.rizki@kemitraan.or.id



ADAPTATION FUND

Project/Programme Category	<b>Small-sized Project/Programme</b>
Country/ies	<b>INDONESIA</b>
Title of Project/Programme	<b>Building Climate Resilient District in Indonesia: Case of Sigi District</b>
Type of Implementing Entity	<b>National Implementing Entity</b>
Implementing Entity	<b>Kemitraan (Partnership)</b>
Executing Entity/ies	<b>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.</b>

## **Gender Assessment and Gender Transformative and Inclusive Project Action Plan**

Gender assessment is crucial to be conducted early in the project design to ensure that an understanding of gender roles and power relation is built into the project. This understanding will help to ensure how the project can: (i) address gender inequalities; (ii) address differential needs of women and men; (iii) ensure equal access to resources, services, and capacity development; (iv) ensure equal participation of women and men in management arrangement as beneficiaries, partners, and key stakeholders; and (v) ensure equal participation in decision-making processes.

**Based on the gender assessment, a clear gender transformative and inclusive project action plan can be developed. This is to avoid separation of gender action plan and the project action plan itself.** The understanding of gender roles and the power relation should inform how the project should be designed, formulated, implemented, and monitored.

Given the patriarchal cultural values that shape the social construction in Central Sulawesi<sup>1</sup>, including Sigi district, gender assessment using intersectionality approach is expected to highlight all inequalities between women and men in many aspects, such as race, age, economic status, social status, and religion. Based on the identified inequalities, thorough, careful, and mindful activities in every step of the project implementation can be crafted in a gender responsive and inclusive manner that will address the inequalities at hands.

Gender assessment must be conducted at district and community level that relevant to the project. In case of community level, the pilot villages are the target for gender assessment. Through the assessment, gender roles, power relations and inequalities must be identified and used as the baseline to be monitored and compared to the post project situation (endline). This way the project can clearly show how it has successfully help [or fail] to address the inequalities.

---

<sup>1</sup> Aisyah, N. . (2021). Quality of Life and Women Empowerment in Central Sulawesi. *Journal of Asian Multicultural Research for Social Sciences Study*, 2(1), 36-44. <https://doi.org/10.47616/jamrsss.v2i1.91>

When conducting gender assessment, there are several principles to be upheld. The first is to avoid stereotypes or assumptions. This is not just because stereotypes are politically incorrect or offensive. The problem with stereotypes is not that they are untrue, but that they are incomplete. They make one story become the only story. When doing a gender assessment or analysis, one should be prepared to be surprised or proven wrong. We should not rely on preconceived ideas.

The second is to be willing to see different forms of power, particularly of women. A gender assessment should be able to reveal the complexities of power dynamics in an environment and reveals the common flaws in simplistic and binary assumptions. The third is to approach gender analysis with an open mind. Open-mindedness is especially important for anyone seeking to understand gender in a foreign context. As an outsider, researchers should be aware of their own positionality and biases and the ways in which ideas about power, masculinities, and femininities are inherently part of the way they see the world and understand other environments.

Gender assessment shall be at least focused on several key steps. These key steps will help to ensure a comprehensive gender assessment<sup>2</sup>. The first step is **understanding the context**. A gender analysis also depends on context. Although different countries, states, cities and villages have similarities and influence each other, it is important to avoid assuming that different contexts will have the same gender dynamics. Expectations about femininity and masculinity vary based on different environments, time periods, and social groups. This is why scholars often refer to “masculinities” in its plural form to capture an array of different forms of masculinity in a context. While it is useful to make comparisons across contexts, it is also essential to recognize where contexts diverge in gendered expectations. For example, hegemonic masculinity, as explained by David Duriesmith, is the form of masculinity that is most privileged and enjoys the most benefits and power in society. Usually, hegemonic masculinity has some consistent traits, such as being able to provide for and protect one’s family. However, what this provision looks like and what type of protection a man is expected to provide will vary across contexts. A gender analysis also examines patterns over time and recognizes that ideas about gender are changing and co-dependent. This first step is critical to how gender assessment will be conducted at Sigi district level and the pilot village level. The context, even though in one district, might be different from one village to another village and between district level and village level.

The second step is **Asking Questions**. Gender analysis involves asking questions about the different experiences of an environment for men, women, boys, girls, and sexual and gender minorities (SGMs). These questions focus on experiences, expectations, and relationships. Some examples of questions related to CVE policies are, how does this policy affect men differently than women? How does the policy affect boys and girls differently? As part of a gender analysis, one should think beyond intended effects of the policy and consider cascading effects that, for example, cross into the private sphere, have economic impacts, or affect the security of individuals differently.

The third step is **understanding power dynamics**. Gender, according to Carol Cohn, is a way of “structuring power,” and so it is important to understand who has access to different forms of power as a result of their gender identity. It is useful to take a broader view of power and to recognize power differentials not only between men and women, but also between women, between men, between boys, and between girls, not only in term of sex but in multi

---

<sup>2</sup> <https://reliefweb.int/report/world/how-do-gender-analysis-practical-guidance-un-community>

aspects (age, religion, economy status, social status, religion and race, etc.). This lead us to the fourth step, **understanding intersectionality identities**.

Gender analyses also recognize intersectional identities. Gender is one way to structure power, but one's access to power, in all of its forms, differs based not only on one's gender, but also on one's religion, class, education, race, ethnicity, age, and many other factors. A gender analysis does not treat women as a monolithic group, but asks questions about different experiences of women, men, boys, girls, and SGMs. A person can experience several inequalities due to his or her position. For example, a woman, who is poor, with limited education, comes from low class and considered to be young is actually positioned in the intersectionality of inequalities. This situation is very important to be understood and not to based gender assessment on singular inequalities, such as inequalities between men and women in term of economic class. Many inequalities are at works for each individual. Intersectionality approach helps to provide comprehensive understanding in conducting the gender assessment.

The fifth step is to **challenging existing knowledge and conventions**. A gender analysis requires gender researchers to look for new or innovative sources of information. This is because, as J. Ann Tickner notes, "much of our knowledge about the world has been based on knowledge about men." One way to incorporate different data would be to speak to women in a society who might be ignored because they are not in positions of public power. Researchers might also have to be creative to get information about women and to hear from women.

**Gender assessment must be conducted before the project design started. This is to make sure all the result of gender assessment can be mainstreamed in the project design. Accordingly, gender assessment should done as part of the full proposal development. At the current stage [concept note development], gender responsive and inclusion mainstreaming can be done by indicating how each output of the project are to be sensitized by gender and inclusion safeguard.** This gender and inclusion safeguard will help to ensure the process of delivering each outpt of the project are gender responsive and socially inclusive. The table below shows how gender and inclusion safeguards are mainstreamed for each output.

### **Specific Gender Dynamics of Disaster Risk and Resilience**

This proposal focuses on increasing resilience through climate risk adaptation, as such undertaking a gender analysis is fundamental in shaping the whole programme design and management cycle. In terms of climate risk, women and men are differentially adapt and be affected by climate change – especially in rural areas such as the targeted partner villages in Sigi District. Women are often disproportionately vulnerable to the effects of climate change and climate change can exacerbate gender disparities. Despite growing recognition of the different vulnerabilities, women also still have less economic, political, and legal clout compared to men – hence less able to cope to the adverse effect of climate. However, many examples have showcase how women has unique experiences and skills to become powerful agents of chance towards more climate resilient community. A global study also highlights how women play an active role in disaster preparedness, response, and recovery efforts. Globally, gender – sensitive climate change adaptation and mitigation programs shows positive, measurable results. Increasing women's participation in decision making can also enable collective climate and human development efforts.

Specifically, the abovementioned gender analysis should be conducted aligned with the five dimensions of climate resilience to determine the roles of women and men in and outside of

the project context, including the constraints they face and what opportunities is available to build more resilient communities.

The five dimensions of climate resilience include (i) social dimension – such as health, education, food security and social networks that helps deal with climate shocks and stresses, (ii) ecological dimension – such as diversity and state of natural environment to adapt to a changing climate and provide critical ecosystem services, (iii) economic dimension – such as availability of financial assets and other endowments, (iv) physical dimension – such as transportation, energy infrastructure, communication networks, health facilities and individual key ownership including land and housing whose operations may be impacted by extreme weather conditions or disasters, (v) institutional dimension – managing climate resiliency through multistakeholders convening particularly to harmonized different perceptions and objectives.

Project/Programme Components	Expected Concrete Outputs	Gender responsive and inclusion safeguards checklist	Climate Risk Gender Dimension
<p>1. Development of supporting climate change adaptation policy with appropriate adaptation measures and good governance to strengthen Sigi District resilience with water-food-energy nexus approach</p>	<p>1.1.1. The establishment of a district-level working group for climate change adaptation</p>	<ol style="list-style-type: none"> <li>1. How and who to inform about the establishment of working group?</li> <li>2. How and who to decide the selection of the member or the working group?</li> <li>3. Who is in and who is out?</li> <li>4. What are the proportion of women and men in such working group?</li> <li>5. Do the members of working group has gender knowledge</li> </ol>	<p><b>Institutional</b></p> <ul style="list-style-type: none"> <li>• Women in Key-Decision Making Positions</li> <li>• Mapping gender &amp; climate resilience issues in the ecosystem, including value-chain, producer groups and business owners</li> <li>• Financing Resilience</li> <li>• Business Ownership for critical sector (including agribusiness and energy)</li> </ul>
	<p>1.1.2. Carrying capacity assessment of local stakeholders for climate change adaptation planning and interventions</p>	<ul style="list-style-type: none"> <li>• Who is doing the assessment?</li> <li>• Does the assessor has gender expertise to conduct a gender responsive and inclusive capacity assessment?</li> <li>• Are the women and vulnerable group part of the local stakeholder to be assessed?</li> </ul>	
	<p>1.1.3. Institutional capacity building roadmap at district and community level developed</p>	<ul style="list-style-type: none"> <li>• Does this roadmap developed in consultation with all stakeholder, especially women and vulnerable group?</li> </ul>	
	<p>1.1.4. Increased capacity of local stakeholders in implementing climate</p>	<ul style="list-style-type: none"> <li>• Are the women and vulnerable group part of the local</li> </ul>	

	change adaptation interventions	<p>stakeholder to be strengthened?</p> <ul style="list-style-type: none"> <li>Does the capacity building program designed for the vulnerable group (i.e., people with disabilities)</li> </ul>	
	1.2.1. Climate change vulnerability assessment using district level data and indicators and climate modeling based on water-energy-food (WEF) nexus approach	Is segregated data available for this assessment?	
	1.2.2. Key Recommendations based on district's climate change vulnerability assessment is mainstreamed and acknowledged in the district 2025-2030 Mid-Term Development Plan (RPJMD)	Are these recommendations already represent the differential needs of men and women and the vulnerable group?	
	1.2.3. Co-Created District's Action Plan for Climate Change Adaptation (Rencana Aksi Daerah Adaptasi Perubahan Iklim Kabupaten Sigi - RAD-API)	Will the Co-creation effort involve women and vulnerable group? How will it involve them?	
	1.2.4. Co-Created District Government Work Plan (RKPD) and District Agencies Work Plan (RKPD) based on RPJMD 2021-2024 aligned with interventions under the RAD-API	Will the Co-creation effort involve women and vulnerable group? How will it involve them?	
	1.2.5. Co-Created District Government Work Plan (RKPD) and District Agencies Work Plan (RKPD) based on RPJMD 2025-2030 aligned with interventions under the RAD-API	Will the Co-creation effort involve women and vulnerable group? How will it involve them?	
	1.3.1. Learning and Communication Tools targeted for replication co-created based on Monitoring, Evaluation & Learning (MEL) throughout the process	<ul style="list-style-type: none"> <li>Will the process in developing the tools be involving the women and vulnerable group?</li> <li>Will this learning tools be accessible for women and vulnerable group?</li> </ul>	
	1.3.2. Series of learning and communication activities to encourage replication at district, province and national level	Are the women and vulnerable group be part of the local stakeholder to be strengthened?	
2. Showcasing an effective District's Action Plan for Climate Change	2.1.1. Delivery of analysis and action plan from the	Will the delivery of analysis be organized for specific group (women and	<b>Social</b>

Adaptation with on the ground implementation focusing on two vulnerable villages: Bolapapu Village in Kulawi sub-district and Lonebasa Village in Pipikoro sub-district	district level down to the village-level	vulnerable group] or will be organized for village community in general?	<ul style="list-style-type: none"> <li>Drivers of climate change vulnerability and how do gendered barriers exacerbate them</li> <li>How is climate change impacting gender dynamic within households and communities</li> <li>What are women's roles within producer groups, cooperatives and local councils</li> <li>Are there gender-differentiated climate-resilience building opportunities</li> </ul> <p><b>Ecological</b></p> <ul style="list-style-type: none"> <li>What are the most important climate-related impacts and risks facing the region and/or ecological zone and what changes can be observed by men and women</li> <li>Role of men and women to manage natural resources and their direct &amp; indirect importance for their respective livelihoods</li> <li>Are there gender-differentiated climate-resilience building opportunities</li> </ul> <p><b>Economic</b></p> <ul style="list-style-type: none"> <li>What are the most important sources of income in households and</li> </ul>
	2.1.2. Carrying capacity assessment of local stakeholders for climate change adaptation planning and interventions	<ul style="list-style-type: none"> <li>Are the women and vulnerable group part of the local stakeholder to be strengthened?</li> <li>Does the capacity building program designed for the vulnerable group (i.e., people with disabilities)</li> </ul>	
	2.1.3. Increased capacity of village institution to prepare and implement derivative programs from District's Action Plan for Climate Change Adaptation at the village-level	<ul style="list-style-type: none"> <li>Are the women and vulnerable group part of the local stakeholder to be strengthened?</li> <li>Does the capacity building program designed for the vulnerable group (i.e., people with disabilities)</li> </ul>	
	2.2.1. Climate change vulnerability assessment at the village-level based on water-energy-food nexus approach	Is segregated data available for this assessment	
	2.2.2. Participatory identification of local livelihood productivity improvement as a basis for the village-level action plan for climate change adaptation	Will this participatory identification be conducted for different community group [women and vulnerable group]	
	2.2.3. Co-creation of village-level climate change adaptation action plan based on the water-energy-food potentials	Will the Co-creation effort involve women and vulnerable group? How will it involve them?	
	2.2.4. Increased community's capacity to access adaptive agricultural practice	<ul style="list-style-type: none"> <li>Are the women and vulnerable group part of the local stakeholder to be strengthened?</li> <li>Does the capacity building program designed for the vulnerable group (i.e., people with disabilities)</li> </ul>	
	2.2.5. Increased community's capacity in water management for agricultural needs and as energy source	<ul style="list-style-type: none"> <li>Are the women and vulnerable group part of the local stakeholder to be strengthened?</li> <li>Does the capacity building program designed for the vulnerable group (i.e.,</li> </ul>	

		people with disabilities)	respective communities
	2.2.6. Increased community's capacity to access inclusive and sustainable energy	<ul style="list-style-type: none"> <li>• Are the women and vulnerable group part of the local stakeholder to be strengthened?</li> <li>• Does the capacity building program designed for the vulnerable group (i.e., people with disabilities)</li> </ul>	<ul style="list-style-type: none"> <li>• How can economic activities changed because of climate change</li> <li>• Are households financially prepared for climate shocks</li> <li>• What are women's role and potential</li> </ul>
	2.2.7. Water-energy-food nexus to support business model of village-level climate adaptation action plan	Does the business model include women and vulnerable group as key partners and/or customer?	<ul style="list-style-type: none"> <li>• In climate adaptive and transformative activities</li> <li>• What are the climate-related impacts and risks for social and productive infrastructure</li> <li>• How does women's access for ownership of key assets (land, home, etc.) impact community resilience</li> </ul>



## ADAPTATION FUND

Project/Programme Category	<b>Small-sized Project/Programme</b>
Country/ies	<b>INDONESIA</b>
Title of Project/Programme	<b>Building Climate Resilient District in Indonesia: Case of Sigi District</b>
Type of Implementing Entity	<b>National Implementing Entity</b>
Implementing Entity	<b>Kemitraan (Partnership)</b>
Executing Entity/ies	<b>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.</b>

## Environmental and Social Management Plan

Checklist of environmental and social principles	Details	Potential environmental and social risks and impacts	Mitigation measures	Timeline (in semester)
<i>Compliance with the Law</i>	<p><b>Further compliance assessment may be required:</b> The design and implementation of the project is consistent with relevant policies and regulations of the government of Indonesia and further support the government's program, which would include:</p> <ul style="list-style-type: none"> <li>- Minister of Environment and Forestry Regulation no. 33/2016 on guidelines for the preparation of climate change adaptation actions</li> <li>- Law 32/2009 on Environmental Protection and Management</li> </ul>	<ul style="list-style-type: none"> <li>- Insufficient compliance to rules, regulations, and standards, specifically for village-level implementation under project component 2. This can have a negative effect once the project is completed.</li> </ul>	<p>Throughout the design and implementation phases, compliance with the rules, regulations and laws at the national, provincial and district levels will be maintained through, for example, development and submission of environmental documents. This will be strengthened with continuous consultation with relevant government officials. The village-level implementation under project component 2 will also adhere to existing village-level regulations and incorporate consultation with village-level officials of</p>	Semester 1-3

	<ul style="list-style-type: none"> <li>- Minister of Energy and Mineral Resources Regulation no. 39/2017 on the implementation of physical activities using new and renewable energy and energy conservation.</li> </ul>		the selected areas.	
<i>Access and Equity</i>	<p><b>Compliance assessment during the implementation may be required:</b> The project is targeted to provide equitable distribution of access to the community, which provides the local community with a number of benefits, including raising awareness to climate change vulnerabilities and raising local resilience with the water-energy-food approach. Potential gender-based and vulnerable groups involvement in the project may require further assessment.</p>	<ul style="list-style-type: none"> <li>- Unequal access to the project benefits and involvement in project activities, such as FGDs, workshops, public consultations, etc. This might reduce the impact of this project with the exclusion of some community groups.</li> <li>- Conflicts arising due to, for example, project location and selection of representatives from community groups</li> </ul>	<p>The program will be designed to ensure equality throughout the project. The preliminary assessment will incorporate community group identification and mapping, and engagement with these community groups will be conducted. This will help identify and address the differing needs and challenges faced by different groups, ensuring equitable access to benefits. Involvement and participation of the community groups will be ensured prior to and throughout the project through ways deemed appropriate given the local situation.</p>	Semester 2-3
<i>Marginalized and Vulnerable Groups</i>	<p><b>Compliance assessment during the implementation may be required:</b> Considering the social benefit of the project, assessment is strongly needed to ensure that the project involves marginalized and vulnerable groups.</p>	<ul style="list-style-type: none"> <li>- Marginalized and vulnerable groups like indigenous groups, women, the elderly, people living with disabilities, and people living with HIV/AIDS are not properly engaged.</li> </ul>	<p>The Gender Responsive and Inclusive Climate Risk Profile will be developed to help all stakeholders, including marginalized and vulnerable groups, to be able to understand climate risks related to water-energy-food security and to have the capacity to reduce the risks. A comprehensive community group identification and mapping would ensure that the project involves all community groups,</p>	Semester 1-2

			<p>including marginalized and vulnerable groups, which potentially lead to a greater impact.</p> <p>A participatory approach will be implemented in the project to ensure an active participation of all the community groups.</p>	
<i>Human Rights</i>	<p><b>Further compliance assessment is not required:</b> Indonesia highly regards the significance of upholding human rights principles. The fundamental human rights of the participants will be upheld and not violated throughout this project.</p>	-	-	-
<i>Gender Equality and Women's Empowerment</i>	<p><b>Compliance assessment during the implementation may be required:</b> Considering the social benefit of the project, assessment is strongly needed. The project seeks to advance gender equity and women's empowerment.</p>	<p>- Women are unfairly involved and underrepresented in project activities, and receive unfair benefits from the project</p>	<p>The Gender Responsive and Inclusive Climate Risk Profile will be developed to help all stakeholders, including gender groups, to be able to understand climate risk related to water-energy-food security and to have the capacity to reduce the risks. This profile will ensure that an effective gender mainstreaming approach is implemented throughout the project design, development and implementation, where the different needs of different gender groups are identified, sensitivities across the gender groups are considered and the interventions are tailored to meet the different needs. Approaches to engage with the different gender groups will be customized to increase gender equality, which may include separate</p>	Semester 1

			<p>engagement activities to accommodate each group's preferred location and formats as well as availability.</p> <p>The project will ensure a minimum of 30% participation of women prior to and throughout the project.</p>	
<i>Core Labour Rights</i>	<p><b>Further compliance assessment is not required:</b> Primary employee policy in this project is consistent with the adaptation principle policy.</p>	-	-	-
<i>Indigenous Peoples</i>	<p><b>Compliance assessment during the implementation may be required:</b> Issues and requirements specific to the indigenous groups present in the target communities will be captured during the assessment. In the event that any conflict could arise, the project shall adjust to mitigate and eliminate conflicts.</p>	- The project unintentionally violates the rights of Indigenous Peoples residing in project areas	<p>A community group identification and mapping in the preliminary assessment will be done to identify any indigenous groups in the project areas. Upon identification, the interventions will be designed in a way that will avoid any violation of the rights of Indigenous Peoples.</p>	Semester 1
<i>Involuntary Resettlement</i>	<p><b>Further compliance assessment is not required:</b> The project will strengthen local society adaptation.</p>	-	-	-
<i>Protection of Natural Habitats</i>	<p><b>Further compliance assessment is not required:</b> The project focuses on sustainable development with the water-energy-food approach.</p>	- The implementation of project component 2 in the two villages include infrastructure changes that could cause disruption to natural habitats	<p>Assessments of specific environmental impacts will be conducted and consulted with relevant stakeholders, which will become the basis for developing environmental documents, such as the UKL-UPL document. Environmental permits will be obtained prior to the construction.</p>	Semester 2

<i>Conservation of Biological Diversity</i>	<b>Further compliance assessment is not required:</b> The project focuses on sustainable development with the water-energy-food approach. However, the project shall adjust to mitigate and manage any activities, which would affect the biological diversity.	-	The project will not threaten the biological diversity in the project areas. In the activities under component 2, the interventions will be done in the village that will not disturb biological diversity.	-
<i>Climate Change</i>	<b>Further compliance assessment is not required:</b> The project will not significantly contribute to the increase in greenhouse gas emissions and is consistent with relevant climate assessment available on Central Sulawesi and further supports the existing related program.	-	-	-
<i>Pollution Prevention and Resource Efficiency</i>	<b>Further compliance assessment is not required:</b> Primary policy in this project is consistent with the adaptation principle policy.	- The implementation of project component 2 in the two villages include infrastructure changes that could cause water and air pollution	Assessments of specific environmental impacts will be conducted and consulted with relevant stakeholders, which will become the basis for developing environmental documents, such as the UKL-UPL document. Environmental permits will be obtained prior to the construction.	Semester 2
<i>Public Health</i>	<b>Compliance assessment during the implementation may be required:</b> The project does not foresee any significant health risks exposed to intended beneficiaries, nor will it affect the health of others. However, since the project requires active participation of stakeholders, and the	- The implementation of project activities jeopardizes the health of participating stakeholders	The project activities will be conducted in ways that ensure the health and safety of stakeholders are prioritized. Health protocols will be enforced.  At the time of the concept note writing, the world is still dealing with the COVID-19 pandemic. If the pandemic remains ongoing during the	Semester 1-3

	COVID-19 pandemic is still ongoing at the time of the concept note writing, further compliance assessment during the implementation may be required		project implementation, or similar health issues arise, the implementation of the project will adhere to the requirements of relevant health protocols.	
<i>Physical and Cultural Heritage</i>	<b>Further compliance assessment is not required</b>	- The project damages physical and cultural resources and sites in the two villages that are the targets for project component 2.	A preliminary assessment will be done to identify any physical and/or cultural resources and sites that exist in the two villages. Upon identification, the interventions will be designed in a way that will avoid any alteration, damage or removal of such resources and sites.	Semester 1
<i>Lands and Soil Conservation</i>	<b>Further compliance assessment is not required:</b> No risks are identified for activities under component 1, while the activities under component 2 might have an impact on soil conservation.	- The pilot implementation (project component 2) in the two villages will decrease soil quality of project sites	The identification of potential locations for project component 2 will include a soil survey and a land suitability analysis to better understand the soil condition and design appropriate interventions that consider land suitability and do not reduce soil quality.	Semester 1