Case Study: Experience of Project Implementation GEF SGP Indonesia – UNDP Phase-6 in Indonesia

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Case Study: Experience of Project Implementation
GEF SGP Indonesia – UNDP Phase-6 in Indonesia

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GLOSSARY OF TERMS

Host Organization	Host organization is an institution selected at each of the location serving as the extension of GEF SGP Secretariat to ensure good communication between GEF SGP secretariat withpartners; and to ensure program is well implemented
Partner Organization	Partner Organization is an institution selected in every location or at national level to implement activities in accordance with GEF SGP Phase 6 strategy and program documents.
Sarano Wali	Sarano Wali is name of customary institution (adat) for communities in Wali, Binong-ko Island. They are of Cia-Cia Tribe
Babinsa	Babinsa is acronym for Bintara Pembina Desa. Babinsa is military personnel (could be from army, navy or airforce) assigned to villages supporting the territorial function of the Indonesian military.
Nusantara Sehat	Nusantara Sehat is government program consist of prevention of disease, promotion of healthy life and addressing illness through assignment and deployment of relevant teams to medical facilities at under-developed areas, borders and areas with medical issues.
Vernakular	Vernakular or vernacular is a system established in a community to guide how communities live their life including but not limited to the use language, building of houses, temples (or any place for worships), agriculture, in consideration of their so-cial, economic, natural and other physical conditions; and inaccordance and to thrive their local wisdom.
Seed bomb	Seed bomb is a method of seeding plants. They do so by throwing mixture of seed and soil, usually this is done at the beginning of rainy season.
Ris	Ris is long string on which seed of seaweed is attached. The string is floated and an-chored, the seaweed is immersed in seawater. The length of Ris is subject to physical condition of the sea.
Stup	Stup is a wooden beehive. Stup is designed in such a way that the harvest will not harm the juvenile bees.
Mopuk	Mopuk is decayed tree trunk. In Semau Island a Gewang tree trunk that has decayed at the core is liked by bees to make their nest, it serves as a natural beehive.
Sprinkler	A sprinkler is a watering device using a circular movement that allows water to drip like rain. This is to ensure that the water is used at the right amount, not too much, and not too little.
Petrogenol	Brand of attractant for fruit flies.
Picohydro	Hydro (power based) electric power generator at small size (up to 5 kilowatt)

FOREWORD

We often hear management and governance in project implementation. Indicators are created to assess project management and governance. However, very little has been discussed on the project governance and management at community level. How do communities see project management/governance? What are the right model for project community in managing/governing project that address threats to their ecosystem?

This case study prepared by Candra Kusuma is to answer some of the questions. This study analyzes how communities build relation and interact with all stakeholders, seek supports and design the project activities and implement all the activities. Please enjoy reading it, I humbly advise that readers put off the theories on project management, sustainability, gender, etc. Let's embrace wisdoms from the stories of communities and their simple approaches.

Enjoy!

October 2021

Catharina Dwihastarini
National Coordinator
GEF SGP Indonesia

GEF-SGP INDONESIA PHASE-6 PROJECT

"Conserving and Enhancing Socio-Ecological Landscape and Seascape through Community Based Initiatives in Sulawesi, Bali and East Nusa Tenggara-Indonesia"

Background

Small Grants Program – (SGP) of the Global Environment Facility (GEF) - UNDP was established in 1992, during the Earth Summit, in Rio de Janeiro Brazil.This Program provides technical and financial support to civil society organizations focusing on poor and vulnerable communities aiming to conserve and restore the environment, and at the same time to improve communities' livelihood.

Indonesia has been part of the program since its inception in 1992. In the last 28 years GEF SGP Indonesia Country Program has provided support to grass root community movement in conserving biodiversity, reducing climate change impact, and stopping land degradation as well as reducing pollution in international waters.

In that period, GEF SGP Indonesia has supported 502 projects in total with financial support c.a. USD 9,0 million, to build capacities of the Program's constituents leading to significant impact in sustainable environmental management, communities' livelihood, and poverty alleviation.

GEF SGP Indonesia evolves to adjust with the country's dynamics in the governance of natural resources, especially the role of communities in managing them. From the beginning GEF SGP Indonesia has decided to partner directly with community-based organizations and NGOs that support communities directly. At the early stage, the grants were provided to supports project implemented by community members and NGOs. In the past few years, the Program has participated in the strategic pilot initiatives which give more opportunities for community members to collaborate with others in regional and landscape-based approach initiative.

Indonesia is an archipelago country made of 17,504 islands (Central Agency for Statistic-BPS, 2013), 13,446 of them are small islands spread over in 34 provinces. Small islands in Indonesia have huge potential to thrive because of their strategic location, immense tropical ecosystem stretched out from ridge to reef (including coral reef, sea grass, mangrove and agriculture land), and valuable non-renewable resources: mining, energy, tourism, etc. On the other hand, the small islands are also vulnerable to degradation of their ecosystem and its functions. Enhancing small islands resilience requires complex management. Most the small islands are remote and facing limited access, limited infrastructure, isolated, under invested and get inadequate attention and support from the government. Small islands are also vulnerable to climate change impacts, and other human made threats. Information on small islands is also limited and makes development planning becomes more difficult.

UNDP as the Implementing Agency of GEF partners with GEF SGP Indonesia Secretariat has implemented full-scale program "Operational Phase 6 of the Small Grant Program GEF in Indonesia". The focus of this program is to address natural resource degradation in three small islands ecosystems: Nusa Penida, Wakatobi and Semau, and a forest landscape at Nantu Nature Reserve in Gorontalo Province.

GEF SGP Indonesia Phase-6 Project Objective

The Objective of GEF SGP Indonesia Phase-6 project is to enhance and conserve the socio-ecological resilience of Sulawesi, Bali and Eastern Nusa Tenggara seascape and landscape through community-based initiatives.

Project Component

There are two components of the projects, with the following outcomes and outputs:

Component 1:Resilient landscape for sustainable development and global environmental protection.

Outcome 1.1.
Structure and network for community-based institutional governance system is established in one forestry landscapes and three coastal landscape(Nusa Penida, Kepulauan Wakatobi, Semau Island, dan Gorontalo) to enable effective participatory decision making for landscape resilience.

Output:
1.1.1 Three coastal landscapes and one forestry landscape strategy will be developed through a participatory engagement of communities' stakeholders.

1.1.2 Agreements amongst parties in the landscapes to support the implementation of the landscape management strategies will be reached.

1.1.3 A policy platform will be developed, which was drafted by NGOs and communities and discussed in a participatory process with government and other stakeholders.

1.1.4 Knowledge and lesson from the project will be disseminated to organizations and institutions across landscapes and to SGP global network.

Landscape of Juriya Village, Gorontalo

Outcome 1.2.
Ecosystem services and biodiversities in the targeted landscapes will be improved through improvement of multifunction land use systems.

Output:
1.2.1 Grant to targeted communities, including grants for strategic projects to enhance successful innovation, reach the landscape outcome and support innovation for conservation of biodiversity and optimization of ecosystem services.

Outcome 1.3.
The sustainability of the production system in the targeted landscape is strengthened through integrated agroecology practices.

Output:
1.3.1 Grants for community projects, including a strategic project to improve successful innovation, will meet landscape outcomes on agro-ecosystem sustainable production.

Outcome 1.4.
Communities' livelihood at the targeted landscape is improved through the development of communities' small scale ecologically friendly enterprises and improvement of their access to market

Output:
1.4.1 Grant to the targeted communities are developed, including those for a strategic project to support successful innovation, to meet landscape outcome on promoting the development of sustainable livelihood, activities to promote global environmental benefits, product standardization, access to market and micro-financing opportunities.

Component 2:Integrated and community-based low emission system.

Outcome 2.1.
Multi parties partnership is established to manage the development and implementation of low integrated and community-based emission system

Output:
2.1.1. Multi parties partnership will be established in targeted landscapes to implement management plan on an efficient energy system

Outcome 2.2
Increased adoption for (development, demonstration, and finance) of efficient and renewable energy technology, and increased number of options for mitigation plan at a community level.

Output:
2.2.1. Grant to targeted communities' projects, including strategic projects, will develop capacities of selected community organizations for developing strategic plans, operating the plans efficiently, and monitoring the utilization of renewable energy.

2.2.2 Knowledge and experience in the innovation will be disseminated across landscapes, countries and to SGP global networks for replication and improvement of the integrated and community-based low emission systems.

METHODOLOGY

The writing of this case study is mandated by GEF SGP Phase-6 Secretariat. The steps for the writing include:

- The first step is understanding the TOR for the case study development. There are several key variables in the TOR: (a) community-based governance of the area; (b) policy impact; (c) social-economic impacts; (d) gender aspect; (e) lessons learned; and (f) recommendation.

- Translating the variables into a list of questions with some guiding notes. The questions are open-ended and provide rooms for information sharing from all parties. In the list, both the partners (Mitra) and Host could share information in language and format of their preference (flexible format) so that it allows to capture more messages and information from the fields, based on their experiences in implementing/managing the projects. Lists of questions were sent to Host and partners in four locations of the GEF SGP Phase-6 Program. The questions were sent through email by the Secretariat of GEF SGP Phase-6. The Secretariat took charge of it because they have had regular communication and have known one another well. The populated tables were sent back to the Secretariat and author.

- Based on the table and supported by final year reports from the Host and Partners the author write the first draft of the case study

- The author consulted relevant parties, requested for confirmation and data to support the writing of the document. The Coordinator of GEF SGP Phase 6 and the Secretariat provided the support.

- Author also contacted leaders of the Host to further clarify or confirm unclear items.

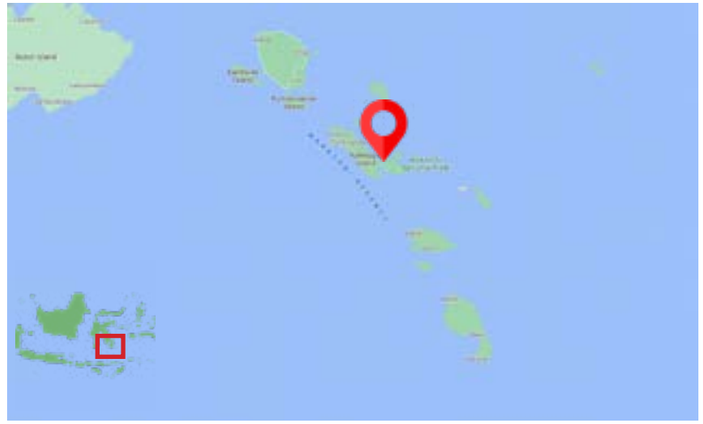
- During the writing process, author sought supporting references needed to support the development of the case studies

- The first Draft was submitted to GEF SGP Phase-6 Secretariat for providing theinitial built-up of the document (outlines and initial content) for their approval. Based on the approved draft of the outlines and initial contents the author further develop the case studies.

Boat Making Process in Wakatobi

WAKATOBI ISLANDS
SOUTHEAST SULAWESI PROVINCE

Kaledupa Atol



1. Wakatobi Islands Landscape Conditions

Wakatobi Islands is situated in South East Sulawesi, and is enacted as a district since 2003 (previously it was sub-district, under the District of Buton).Wakatobi is an abbreviation from the islands that constitute the District: Wangi-Wangi, Kaledupa, Tomia and Binongko.

Wakatobi was known as the Islands of Blacksmith, for the ability of the islanders in creating iron weapons and tools.The capital of the district is at Wangi-Wangi Island, Wakatobi District has 8 sub-districts, 67 villages and the total areas of 1,390,000 hectares or 1.390 square kilometers. A number of islands in the District are 39 islands, 3 reefs and 5 atolls. Wakatobi archipelago has various species of coral reefs, atoll, and fringing reefs. Atolls in Wakatobi were established through uniques processes, which as plate subduction that led to the emergence of new islands which includes some of the atolls such as Kaledupa Atoll, Kapota Atoll, and Tomia Atoll.

The topography of the islands is mostly flat, especially in the northern part of Wangi-Wangi, Northern and Southern Kaledupa, Western and Eastern Tomia and Southern Binongko. The altitude in these areas are between 3-20 meter above sea level. Most of mid islands are higher, peaking at 350 meters above sea level. In addition to isles, varied topography in each of the main islands there are small mountains: Mount Tindoi in Wangi-Wangi, Mount Pangilia in Kaledupa, Mount Patua in

Tomia and Mount Watiu'a in Binongko. Since 2002, the entire District of Wakatobi has been declared as National Park, 97% of the Wakatobi National Park is sea covering at least 40 reef isles, and 25 coral reefs. Since 2007 the Wakatobi National Park has been divided into various zones: core zone (no take no go areas, 1,300 hectares), marine utilization zone (36,450 hectares), tourism zone 6,180 hectares), zone for local users (804,000 hectares), zone for co-utilization (495,700 hectares) and zone for specific use 46,370 hectares. UNESCO recognizes the uniqueness of the ecosystem and biodiversities in Wakatobi and registers Wakatobi as Biosphere Reserve.

Reef structure in Wakatobi results in different characteristics in each of the islands. Kaledupa Island is known for its fertility and has supplied vegetables and tubes to other islands. Binongko is the least fertile as this consists mostly of rocks and sands. Tomia and Wangi-Wangi have similar characteristics, they are between Kaledupa and Tomia in terms of arable lands. In the past all islands had rich mangrove forests. Nowadays only Binongko Island and Kaledupa Islands still have mangrove forests consisting of old and tall mangroves.

2. Institutions Involved in the Project Implementation in Wakatobi Islands.

GEF SGP Phase-6 Project was implemented in four islands, hosted by two different organizations: Forkani (supporting and coordinating 6 partners), and Lawa Toudani (supporting and coordinating 3 partners). The details are as follows:

Table W1: Project Location, Host and Partners in Wakatobi Islands

Partners			Host/Coordinator	
Name	Office (Island)	Project (Island)	Name	Office (Island)
Nelayan Wangi-Wangi Community (Komanangi)	Wangi-Wangi	Wangi-Wangi	Lawa Toudani	Kaledupa
Toudani	Kaledupa	Kaledupa	Forum Kahedupa Toudani (Forkani)	Kaledupa
Panglima Djalima	Kaledupa	Kaledupa	Forkani	
Koperasi Usaha Nelayan Mantigola (KUN Mantigola)	Kaledupa	Kaledupa	Forkani	
Nelayan Mandiri Group (Yanar)	Kaledupa	Kaledupa	Forkani	
Poassa Nuhada	Tomia	Tomia	Forkani	
Kahianga Mambali	Tomia	Tomia	Lawa Toudani	
Forum Nelayan Binongko (Foneb)	Binongko	Binongko	Forkani	
Famokossa	Binongko	Binongko	Lawa Toudani	

Compared to other projects in GEF SGP Phase-6 Program, the project locations in Wakatobi Islands are unique, as they are implemented in four different islands, with two coordinators (Host). The two hosts reside on the same island (Kaledupa), and Partners are in each of the islands where the project is located. This may seem unimportant, but considering the weather, limited transportation, infrastructure for communication, this difference of location could pose challenges to project implementation and coordination.

Availability of cellular network while spotty helps the communication of the Host and Partners, and with the GEF SGP Phase-6 Secretariat. Furthermore, during the last year of the project implementation (2020), The Covid pandemic made in-person communication impossible, the cellular connection was instrumental.

Table W2: Funding, Project Duration, and Project Activities in Wakatobi Islands

No	Institution	(USD)*	Co-Financing	In Kind Contribution (USD) **	Project Duration (Month) ***	Activities
1	FORKANI (Coordinator)	50,000		50,138	24	• Support to partners; • Monitoring and evaluation; • Coordination and consultation with stakeholders
2	Lawa Toudani (Coordinator)	50,000		40,845	24	• Support to partners; • Monitoring and evaluation; • Coordination and consultation with stakeholders.
3	Komanangi	15,000		15,944	12	• Fishery Protection Area; • Spring protection • Local food and ecologically friendly farming
4	Toudani	15,000		16,060	16	• Riverbank conservation; • Spring protection and preservation • Wood efficient stove • Local food and ecologically friendly farming.

No	Institution	GEF SGP Contribu-tion	Co-Financing	In Kind Contribution (USD) **	Project Duration (Month) ***	Activities
5	Panglima	25,000		19,090	21	• Cotton weaving and natural dye. • Spring protection • Wood efficient stove; • Coconut shell craftmanship; • Local food and ecologically friendly farming
6	KUN Mantigola	15,000		17,952	12	• Fishery Protection Area; • Home cash crop farming • Wood efficient stove; • Local fish based food.
7	Yanmar	15,000		20,130.42	18	• Fishery Protection Area; • Mangrove protection • Wood efficient stove; • Eco friendly fishing gear; • Local foodl
8	Poassa Nuhada	15,000		17,860.22	18	• Fish Bank; • Spring protection • Wood efficient stove; • Local food and ecologically friendly farming.
9	Kahianga Mambali	14,514		16,942	12	• Agro-forestry; • Spring protection • Wood efficient stove; • Community based coffee farming.
10	Foneb	15,000		15,097	15	• Fishery Protection Area • Spring protection • Wood efficient stove; • Local food and ecologically friendly farming.
11	Famokossa	15,000		16,008	13	• Fishery Protection Area • Spring protection • Wood efficient stove; • Local food and ecologically friendly farming.
	Total	**234,514**		**245,066.64**		

Source: Compiled from database of GEF SGP Phase-6 Secretariat.

**Currency Rate assumption 1 USD = Rp 14.000.*
***For "In-kind contribution" is not populated because Partners and communities are not used to calculate it. In reality, there are numerous contribution from communities: supplies, time, transportation to the meetings, space/venues for various activities in the projects.*
****Project duration is counted in total, all Partners and Host requested a no-cost extension due to Covid.*

Project and activities planned by the Partners are similar: (1) Establishment of Fishery Protection Areas, also known as Fish Bank; (2) Watershed protection including spring and riverbank protection; (3) wood efficient stove; (4) local food. There are some unique in certain Partners such as weaving cotton cloth using natural dye (by Panglima in Kaledupa Island), and coffee plantation (by Kahianga Mambali in Tomia Island).

3. Landscape Governance in Wakatobi Islands Project

Local governance for landscape in the GEF SGP Phase-6 project location especially is aimed for improving fishery and marine resources management, water source utilization for household use and some for farming (agriculture and livestock). Only one activity conducted by Toudani in Kaledupa Island focuses on watershed management.

For improvement of marine resource management, there are seven establishments and/or revitalization of fish protection area or fish bank: in Wangi-Wangi Island (1), in Kaledupa Island (2), and in Binongko Island (2), and revitalization of one fish protection area in Tomia Island. Mangrove protection was conducted in Kaledupa Island (Please see Table W3. Establishment and Revitalization of Fish Protection Area and Mangrove Protection in Wakatobi Island Project).

Tabel W3: Establishment and Revitalization of Fish Protection Area and Mangrove Protection in Wakatobi Island Project

Partner	Island	Agreement	Process	Team
Komanangi	Wangi-Wangi, at Sara Liya Customary Community area	Improve the effectiveness of existing fishery protection area located at Sara Liya Customory Community area near Sumanga Island with total area of 19.24 hectares. This fishery protection area has been established since 2017 and already enacted legally by a Decree of the Head of Wakatobi District, management plan and agreement amongst community members, yet there are still violation of the agreement (fishers still fish at no take areas).	Discussion and consultation through various focus group discussion at village level, attended by government of the villages, community council (Badan Perwakilan Desa, or BPD), representative of Customary Community Leadership, Wakatobi National Park, District office for Marine Affairs and Fishery, and other relevant stakeholders. Written agreement is reached. Communities comply to the agreement to not fish in no take areas, especially around and during the spawning period.	Surveillance team was established to enforce compliance for not fishing in no take areas. The team consists of village government, Wakatobi National Park, Partner (Komanangi), police and community/fishers. One person from Liya Mawi Village is assigned to the enforcement team using Village Development Fund.
KUN Mantigola	Kaledupa, at Kaledupa Reef.	Improve management effectiveness of the existing fishery protection area through collaboration with Yanmar. Fishery protection area in question has 1,484 hectares located in Potoroh, covering two villages Desa Mantigola Village and Horuo Village. Communities agree to convert local utilization zone for Fishery Protection Area. Communities establish the management team and install marine buoy to mark the no take areas.	Focus group discussion and counsel meetings involving government of Matingola Village and Horuo Village, BPD, Customary Community Leadership, Bajo (sea gypsy) fishers group (Bajo Bangkit), fisher group “Mantigola Makmur”, community members, sub disctric government and Wakatobi National Park Communities have the agreement in writing signed by the key leaders and witnessed by Wakatobi National Park Authority. Community also sign agreement of cooperation with the National Park Authority.	Surveillance team is established for enforcement the no take area in the Fishery Protection Area involving Wakatobi National park and Fishers Forum in Mantigola and Horuo. Fishery Protection Area in Potoroh is chosen for the implementation site of the cooperation between Costumary Community Sara Barata and National Park Authority, especially Section II of the Wakatobi National Park Authority.
Yanmar	Kaledupa, at Kaledupa Reef.	Through collaboration with KUN Mantigola, the Partner established Fishery Protection Area in Kaledupa Reef (1,484 hectares). This initiative is driven by the over-fishing, destructive fishing (blasting fishing), coral reef destruction. Fishery Protection Area is to provide safe space for spawning and aggregation of fishes.	Focus group discussion and counsel meetings involving the partners (Yanmar and KUN Mantigola), government of Matingola Village and Horuo Village, community members of Mantigola and Horuo, sub disctric government and Wakatobi National Park Agreement is reached and put in writing signe by all parties.	Surveillance team is established consisting of multi stakeholders, including from communities and fisher groups.
Yanmar	Kaledupa, at Horuo Village	Mangrove protection area in Horuo Laut, 1 hectare	Wakatobi NP plant 5,000 mangrove trees, Yanmar support the dissemination of the information and build awareness of communities on the importance of mangrove ecosystem to small islands (habitat to certain species, tidal barrier, and source of firewood).	Team consisting of Wakatobi NP, Forum Kemitraan Nelayan Mantigola-Horuo, Kelompok Yanmar, Village government, communities of Mantigola Village and Horuo Village.

Institution	Island	Agreement	Process	Team
Poassa Nuhada	Tomia Island at Kulati Village.	Revitalizing existing Fishery Protection Areas (32.9 hectares) in Kulati Village, East Tomia Sub District.This Fishery protection areas was previously established by Coremap Project in collaboration with TNC, WWF, and Komunitas Nelayan Tomia (or Komunto) in 2013. The management of the Fishery Protection areas has not been effective for quite a while. The revitalization is by improving the management plan (creating seasonal closure).	Focus group discussion and council meeting with Kulati Village government, Poassa Nuhada group, Youth Organization (Karang Taruna), and communities/fishers.	Team for surveillance and monitoring of fish bank consist of Poassa Nuhada group, village government and Karang Taruna was established. Constructing floating guard post. The floating post is also for fishing to support the surveillance operation.
Foneb	Binongko, in the Customary Community Sarano Wali, covering Wali Village, Jaya Makmur Village, Lagongga Village, Kampo-kampo Village	Estabising fishery protection area (locally known as Kaombo) in Sarano Wali Customary Area (17 hectares). Kaombo to support food security of The Customary Community Sarano Wali Village Management plan in the Kaombo was developed, mainly regulating the open-close season for fishing. The Kaombo has more fish and also place for spawning and aggregating of the fisheries. Marking buoys for Kaombo were erected	Sarano Wali, Wali Village government, Binongko Sub District government, community organizations/institutions, police and Wakatobi National Park. Agreement was reached, and no written record, but recognized verbally.	Monitoring and surveillance implemented joinly with Customary Community Sarano Wali, Wakatobi NP section III, extension office of Office for Fishery of Wakatobi District, dan Foneb.
Famokossa	Binongko, at Palahidu Barat Village.	Establishing Fishery Protection Area (10 hectares) in Palahidu Barat Village. The Fishery Protection Area is managed by seasonal closure with mostly closed season (as no take area) throughout the year, and only open once a year during the festival henga-hengapaa), enforcement of no take area. Enforcement and surveillance is conducted by communities and Surveillance group Sampua Maola.	Focus group discussion and council meeting involving village government, Wakatobi National Park Authority, Famokossa fishers group, Binongko Sub District government, boat owners, community leaders, fishers. Agreement was reached and was written and signed by all parties.	Surveillance team was established consisting of members from fisher groups. Number of the surveillance team members is 11. The team's name is Sampua Maola. In addition to the team, fishers also apprehend outside fishers who fish in the no take area, or those who fish with destructive gears, and report the finding to the local authority.

Table W4: Protection of Water Source (Springs) and Watershed in Wakatobi Island

Partners	Island	Agreement	Process	Team
Komanangi	Wangi-wangi, at Liya Mawi ViWlage.	Protection of Uwe Tamba'a Spring with planting of 2,000 trees (jackfruit and mango). As the trees were cut before, the water quality declined and rather salty (due to intrusion of sea water).	Focus group discussion and council meeting involving Liya Mawi Village government, Sara Liya, land owners, farmer groups, and communities Agreement was reached and recognized verbally	Land owners and members of the Posa'asa will protect and nurture the trees.
Toudani	Kaledupa, at Horuo Village.	Vegetation protection in and around the spring and riverbank in Horuo Village, total area is 3.5 hectares. Agreement to not cut any trees at radius of 3 meter from the spring, and at riverbanks. This regulation is already recognized by communities as part of the customary regulation/local wisdom. Replanting of trees in around spring and riverbank.	Focus group discussion and council meetings involving Horuo Village government, Customary Community Bharata of Kaledupa, land owners, woman groups, youth organization, representatives from schools, and other stakeholders. Written agreement was reached.	Team was established for replanting. Land owners are responsible for nurturing and protection of the trees, in return the land owners also own the trees.
Panglima	Kaledupa, at Pajam Village	Protection of Te'e Wufu Spring at Pajam Village by replanting 1,000 trees. This is to address declining volume of water due to lack of vegetation around the spring.	Focus group discussion and council meetings involving Horuo Village government, Customary Community Bharata of Kaledupa, land owners, woman groups, youth organization, representatives from schools, and other stakeholders. Agreement was reached and recognized verbally.	Team was established for replanting. Land owners are responsible for nurturing and protection of the trees, in return the land owners also own the trees. If a tree is found cut, it need to be replaced/replanted.
Kahianga Mambali	Tomia, at Kahianga Village.	Protection of Te'e Tobakka Spring and Te'e Wali Spring (total area is 1 hectare). This huge spring area is part of 400 hectares of the protected forest. Replanting of 1,100 trees (mango, jackfruit, tamarind, banyan tree, Indian almond or terminalia cattappa, etc) The springs are used by 500 households in two villages: Kahianga Village and Wawotimu Village	Focus group discussion and council meeting involving Kahianga Village government and Wawotimu Village government, customary institutions, local organizations, community leaders, and water company (owned by district government).	Team was established for replanting. Land owners are responsible for nurturing and protection of the trees, in return the land owners also own the trees.
Foneb	Binongko, at Sarano Wali Customary Village	Protection of Te'e Tombu-Tombu Spring area covering 7 hectares in Lagongga Village. Replanting of local 1,000 trees.	Focus Group Discussion and council meeting involving Lagongga Village government, BPD, religious and customary leaders, community leaders, woman group, youth organization, Sub District government, police, Babinsa, extensionist on social forestry, members of community tourism group, Nusantara Sehat program reps, and District owned water company. Written agreement was reached.	Team was established for replanting. Land owners are responsible for nurturing and protection of the trees, in return the land owners also own the trees. If a tree is found cut, it need to be replaced/replanted. Fruits resulted from the plants are for all community members.

Partners	Island	Agreement	Process	Team
Famokossa	Binongko, at Palahidu Barata Village.	Protection of Te'e Kuala Spring, covering 1 hectare at Palahidu Barat Village. Replanting of 1,000 trees.	Focus group discussion and council meetings involving Palahidu Barat Village government, customary community leaders, land owners, and other stakeholders. Written agreement was reached	Fruitsof the replanted trees are for all members of community. The agreement is open ended, including on the consumption/ harvest of the fruits.

On the other hand for the terrestrial ecosystem, the landscape governance is mainly aimed at improving the management of watersheds, water sources (springs). There are 6 activities for the protection of water sources that took place in Wangi-Wangi Island (1), Tomia Island (1), Kaledupa Island (2), and Binongko Island (2). In Kaledupa Island the protection of water sources is combined with watershed management and restoration of the upstream and riverbank areas.

Both at marine and terrestrial landscape, the project governance relied on the village level agreements. Most are in writing (especially those on marine and fishery resources), but there are few only verbal agreements. The agreements were reached after deliberation, discussion and consensus-building amongst members of the communities.

Involved in the discussion of the governance system: village government, local representatives (BPD), customary leaders, religious leaders, farmer/ fisher groups, tourism group. In addition other institutions like police, military, district government-owned water company, and a representative from the Wakatobi National Park. In Binongko, boat owners are also involved in the discussions, since they often anchor their boats in the no-take areas especially during bad weather. On other occasions, NGOs (local, national or international) are often invited to join if they also work in the same area in similar a theme.

For terrestrial landscape governance discussion, parties involved are village governments, BPDs, customary leaders, religious/community leaders, farmer/fisher groups, woman group and youth groups, and landowners. In certain areas schools are involved and represented by teachers, students and boy/girl scouts. Some of the springs are located in privately owned lands.

In all ishery protection areas, a team for surveillance is always established, involving relevant parties. Fishers/communities are the backbones of the surveillance team. In Liya (Komanangi Project in Wangi-Wangi) and in Palahidu Barat Village (Famokossa in Binongko Island), the government of the villages are involved and allocate village government budget to pay the salary of the member of the surveillance team.

Box 1
Learning on Marine Management from the Ancestors in Wakatobi Islands.

There are 14 customary communities in Wakatobi Island. However, when it comes to marine resource management, nothing is more influential than Bajo Tribe. Bajo is a sea gypsy communities spread across archipelago, including in some neighboring countries. Some of Bajo Tribe members have settled in Wakatobi Islands.

Patanda et al. (2018) quoted Hasrawaty (2016) mentioned that islanders of Wakatobi have local wisdoms such as Tuba dikakatuang and Parika teachings. Tuba dikakatuang literally means "beloved reef". Its mean message is agreement to conserve nature. Parika on the other hand is a tradition in the Bajo Tribe in selecting their leaders. Leaders are selected based on their competence on selecting gears, time to fish, size of gears (i.e. mesh size of net).

Patanda et al. also quoted Arafah (2010) mentioned that local wisdoms play important role socially and ecologically. Customary regulations or local wisdoms teach fishers on (1) sea ritual, the ritual/ceremony need to be revitalized as it teaches fishers to not fish on certain time (later some of the time for close season is confirmed by science as spawning time for certain fisheries), (2) open and close season need to be re-implemented as this allows fish to regenerate and to grow. Close and open season is decided based on agreements amongst members of the communities. (3) Tuba dikatutuang is important to be implemented as this provide clear regulations on a). prohibiting fishers to overfishing, b). catching egg bearing fish, c). restricting any kind of fishing on certain areas, d). restriction on not anchoring on coral reef, and e). prohibiting catching protected fishes.Tuba dikatutuang is perceived to be efficacious in protecting ecological resources and bio resources.

Fishery protection areas could refer to the said customary regulations. Fyka and Arif (2017) quoting Parks et al (2011) considered that fishery protection areas is another alternative for marine conservation method, and is believed to have important impact in medium and longer term especially in conserving marine resources, improve fishers livelihood and strengthen food security. Adam (2012) thought that community based marine resources management could be done by legalizing and formalizing informal institutions exist in the communities. Other option is to establish new institutions, as long as based on mutual agreements. If agreed and needed, the formalization and legalization could be done through enactment of village regulation (Peraturan Desa, Perdes).

Based on the experience in establishing fishery protection area in Hoga Island (2009), violations in Toba area will be punished. 1) For light violation, the punishment is reprimand and warning, 2). If the violation occurs again or for more severe violation the punishment will take place in the village of the violators and 3) for severe violation the punishment is a 2 million rupiah (in 2009 values) fine. The fine is collected and sent to Sub District government. (Hasrawaty, Anas, dan Wisuda, 2017).

Research from Alwin, Nur dan Mustafa (2018) found the benefits of fishery protection area around Waha Village in Wangi-Wangi. The research compared the live coral cover after 10 years, and the improvement of the coral cover was visible. Similary, the abundance and biodiversities in the areas also improved, and so is the catch of reef fisheries.

Based on the said findings, fishery protection areas established through this GEF SGP Phase-6 emphasize the importance of setting up no take area, restriction of gears, and restriction go catch egg bearing fish, and regulation on the minimum size of harvest-able fish. The punishment also needs to be made clearer to ensure that the fishery protection areas thrive.

Box 2
Instant Kasoami, a solution to reintroduce local food?

Kasoami is a typical Southeast Sulawesi food. It had been a stable food for communities in this province, especially for the seamen who need to be at sea for extended period of time to travel for business, some even reached out to Java Island. Kasoami is made of local tubers and could still be consumed after a month. Recently, kasoami is considered as variation of food, and no longer main staple food, as people, especially the young one, are used to consume rice. Shifting to rice brings up additional cost as they need to purchase rice from other areas, discourage farmers from planting local tubers, and lead to increasing incidents of diabetic (there is no scientific data on it, this statement is based on anecdotal stories from communities).

To reduce pressure on consuming rice, and as part of the effort to enhance local food security, especially during dry season and storms (where no sea travel is limited and therefore logistics are hindered) an innovation to produce kasoami is needed, and it may offer local solution. Madiki et al. (2019) reported that Halu Oleo University in Kendari had studied various local food produced in Wakatobi, among others is Instant Kasoami. This product could allow for quick and simple serving of the food and has longer durability (up to a year before it perished). This could really help ensuring food security and extend the reach for distribution. The technology also reduces nutrient loss.

Local tubers (Opa, Kano, sweet potato,taro, etc)processing is not found to be prominent in the project funded by GEF SGP phase-6. In the future, partners and community in GEF SGP Phase project need to consider improvement the production of this Instant Kasoami, and collaborate with universities for that.

However, in terrestrial ecosystem governance, the team established is only for replanting of trees. The nurturing and protection of newly planted trees are the responsibility of the owners, as they own the trees. On some occasions farmers groups are still involved in the nurturing of the plants, especially of the fruits are for all members of the community.

In protecting watersheds and springs (and also in the planting of demonstration plots for food plants), the biggest challenge is on ensuring that they have the right seedlings. Process of seedling, planting of seeds, and nurturing the plants are also challenging. Wakatobi is dry land, with limited arable lands, and limited water, especially in the dry season. This makes farming very challenging. The challenges on securing seedling making the planting were not done in time (not aligned with the rainy season where water is more abundant when the plants need it the most). This affects the delayed harvest and leads to the lack of data on harvest in the project report. It is hoped that partners and communities will continue managing the demonstration plot of the food crops.

The protection of mangroves in Horuo Darat Village was unique. Initially Wakatobi NP introduced the replanting of mangrove that was cut by community members for firewood. As this coincided with the preparation for the GEF SGP Phase-6 project, the Partners (Yanmar) and Host (Forkani) included the awareness campaign to protect mangroves in the targeted communities. This project became an example of how a collaboration of various institutions could take place.

4. Legal Change and Communities' Participation in Strategic Policy

As earlier described, governance and management of the landscape—marine and terrestrial—are based on agreement (written or verbal) at the village or community level only. Until the end of the project period, none of the proposed solutions or agreements are enacted legally, for instance in the form of Village Regulation (Peraturan Desa, Perdes).

The efforts to elevate the agreement into legally binding regulation were made, but such endeavor requires lots of time, longer than the project cycle itself. Despite the lack of legally binding regulation, however, village governments have allocated resources to support the activities. indicates recognition of the village government. Such as:

- Komanangi in Wangi-Wangi Island encourages Liya Mawi Village government to incorporate the design and strategy of the fishery protection area in Sumanga Island into the development planning document (midterm development plan and activity plan). This could lead to the issuance of Perdes. As the fishery protection areas also border with other villages, the discussion on this need involves other villages, so that multiple Perdeses could be issued by Liya Mar village government and others.
- Kahianga Mambali in Tomia Island encourages the village government to elevate the agreement between the government and partners on protection Te'e Tobakka Spring and Te'e Wali spring into a formal legal document (Perdes).

The project has affected the village development program as indicated by:

- Yanmar's project in Kaledupa island has inspired the local village government to allocate funds for supporting fishers with coolbox (for fish cold chain), and for the adoption of the wood efficient stove in the following fiscal year budget.

- Kahianga project in Tomia Island, village government adopted the project activity (Training on Composting) in the government development activity for 2020 to support best agricultural practices in coffee farming; in addition the government also supports the procurement of local food seedlings for the demonstration plot.

- Foneb's project in Binongko Island, two village governments (of the Lagongga Village and Jaya Makmur Village) incorporate wood efficient stove in the development activity plan for 2021, and in the midterm development plan of the villages.

- Famokossa's project in Binongko, village government allocate budget to support the continuation of the project in the Village government's budget of 2021.

As the project activities are incorporated in the budgets and development plans of the village governments, the recognition of the efficacy of the project in addressing communities' problems is visible. This also ensures the sustainability of the activities introduced by the projects.

The scope of the projects, their limitation allows the project to inspire and reach out to local/village level policy. Understandably, the impact of the project beyond the village is not observed. The table (Table W5: Legal Change and Community Participation in Shaping National/Provincial Policy) shows that the policy impact is only at the village level.

Tabel W5: Legal Change and Participation of Wakatobi Islands Communities in Strategic Policy at Provincial and National Level

Partners	Islands	Legal change in national, district and local affected by communities' activities.	Impact or Input to National Policy (National Action Plan on Biodiversity)	National or Sub-National Policy Change Affected by the Project	Community Participation in Design, Implementation, or revision of the National Policy on Biodiversity)
Komanangi	Wangi-wangi	Village/local agreement	None	None	None
Toudani	Kaledupa	Village/local agreement	None	None	None
Panglima	Kaledupa	Village/local agreement	None	None	None
KUN Mantigola	Kaledupa	Village/local agreement	None	None	None
Yanmar	Kaledupa	Village/local agreement	None	None	None
Poassa Nuhada	Tomia	Village/local agreement	None	None	None
Kahianga Mambali	Tomia	Village/local agreement	None	None	None
Foneb	Binongko	Village/local agreement	None	None	None
Famokossa	Binongko	Village/local agreement	None	None	None

5. Impact of the Projects on the Social and Economic Conditions in Wakatobi Islands

Measured Impacts and Changes
Partners in Wakatobi Islands did not collect data on the impact. There was no systematic plan of impact monitoring, and neither was a metric (household income, job creation, diversification of source of income, access to market, etc). for measuring the impacts. Baseline data and post-intervention data were not collected. Such a situation makes it hard to present the actual impacts of the project. Trying to measure the impact from key activities (establishing fishery protection areas, mangrove conservation, spring and watershed protection, etc) was also difficult as the activities are just initiated, the impact will still need some time to take place.

Other measures for impact were attempted from other activities such as the introduction of the wood efficient stove, weaving of cotton clothes and using natural dye, are reported as follows:

5.1 Expenses Reduction. Examples:

- Komanangi Project in Wangi-Wangi Island helped communities reduce their expenses for fertilizers and improve their income. Garlic farmers in Liya Mawi Village (Wangi-Wangi Island) mostly (99%) are women, they shift to using organic fertilizers (livestock dung) since they are easy to find, inexpensive and very good for the environment.

5.2 Improving Income. Example:

- Komanangi Project in Wangi-Wangi Island, communities in Liya Mawi Village start having livestock such as goats enjoy the additional income from the demand of the goat dung for fertilizers of garlic farming.

- Panglima Project in Kaledupa Island, ladies working on weaving cotton clothes and using natural dyes enjoy an increasing monthly income from IDR 500,000 to IDR 1,500,000.

- Kahianga Project in Mambali, Tomia Island, prior to the project the household monthly income was IDR 500,000 from coffee and vegetable farming.After the project they enjoyed increase in their monthly income to IDR 800,000 from the diversification of the products.

5.3 Opening Up Job Opportunities. Examples:

- Toudani Project in Kaledupa Island, the initiation of vegetable farming by Karang Taruna (youth organization) in Horuo Village has opened up job opportunities to communities. This farm was an outcome of the training on local food for women and it leads to the establishment of small community enterprises, either individually or through groups (business groups, cooperatives, etc).

- Panglima Project in Kaledupa Island, women group work on local food and precessing mangrove fruit for food lead to business opportunities.

- Panglima Project in Kaledupa Island, diversification of products in clothing production (into scarf, wallet, key chain, bags, masks, bracelets) has opened up new job opportunities especially for weaving and other supporting roles.

- KUN Mantigola Project in Kaledupa Island, food processing training on fish base food has opened up business opportunities especially after the cooperation with village government-owned enterprise is agreed.

- Yanmar Project in Kaledupa island, training on the processing of mangrove fruit into food has led to new business opportunities.

- Poassa Nuhada Project in Tomia Island, saving from the project and combining surveillance on the floating guard post with catching fishes has allowed the Partner to invest the resources for opening up new business. They opened up business on recreational fishing.

5.4 Conserving Resources and Reducing Pressure to Environment. Most families in the project locations use firewood for cooking. Finding the wood, bringing it home, and cooking with the conventional stove is laborious and time-consuming. Some who use kerosene also need to travel to buy it.Wood efficient stove helps communities save their time and efforts, in addition also reduce the pressure on mangrove and forest because efficient stove decreases demand for firewood.

- Toudani Project in Kaledupa Island, from a total of 30 units stove used by 30 households, the families save 30%of wood consumption: from 100 kg of firewood to 70 kg, it helps communities save their time and efforts for finding firewood

- Panglima Project in Kaledupa Island, saving on cooking energy from monthly consumption of 60 kg of firewood and 6 liters of kerosene into 35 kg of firewood and 3 liters of kerosene.

- Yanmar Project in Kaledupa Island, the wood efficient stove has reduced the monthly consumption of firewood from 40 kg to only 8 kg, and kerosene from 6 liters to 2 liters. Smoke is also reduced.

- Yanmar Project in Kaledupa Island, fishery protection areas allows fishers to catch in the water near to their houses, cutting travel time for fishing.

- Kahianga Mambali Project in Tomia Island, the project cut the monthly consumption of firewood from 90 kg to 18 kg, and consumption of kerosene from 15 liters to 9 liters.

- Kahianga Mambali Project in Tomia Island, communities find the benefits of using wood efficient stoves, as it saves 50% of the firewood consumption. They are enthusiastic in constructing the stoves, in total there are 65 wood efficient stoves, 20 big stoves for functions and social events, and 45 small stoves for daily uses. The wood efficient stove also reduces smoke, reduces cooking time, and save effort/ time.

- Foneb project in Binongko Island, they enjoyed 60-70% expenses cut from their firewood consumption. Prior to the project they spent 10 pieces of wood, after the project they only used 3-4 pieces daily. The cost of one bundle of firewood (20 pieces) is IDR 10,000

Wood efficient stoves are used for communal cooking in special local festive at Binongko Island

5.5 Local Seedling Availability is Improved.
Examples:

- Toudani Project, in Kaledupa Island. Local seedlings for local food crops are available. It includes multiple varieties of fruit trees (mango, jackfruit, etc), tubers (Kano, opa, cassava, etc).

- Panglima Project in Kaledupa Island, seedling for local cotton and natural dye plants are more available as the demand for it increases due to the weaving home industry growth in Pajam Village. People are more encouraged to replant and conserve the biodiversity of it.

5.6 Diversification of production and businesses.
Examples:

- Panglima project in Kaledupa Island, opened opportunities for the development of various designs and products using clothes (weaven) as main materials: bags, purses, wallets, key chains, etc. Another un-explored opportunity in Wakatobi District is craft products made off coconut shells

- Kahianga Mambali Project in Tomia, the introduction of technology in their coffee and vegetable farming allows for product diversification: herbal coffee, processed food, and others that opened up more job opportunities. Youth organization attempts to process local food to diversify food in the communities.

The reduction in expenses, and to some extent, increase in income allows community members to spend their money for education, health, etc. The time saved also allows women to engage in public and social activities. However, since there is no baseline data collected it is difficult to compare with after intervention.

Positive Change in the Social Economic Condition since the Inception of the Project

Mainstreaming environmental issues in the villages. Numerous activities (meetings, discussion, training, trying out and practicing newly acquired knowledge in the field, and visits from various institutions such as UNDP, GEF SGP, consultants, government, Wakatobi National Park, etc). has put the environmental issue at the center of communities' conversation. Posters, leaflets, flayers, books, manuals and videos accessible by community members have increased awareness knowledge of community on environmental issues and has enhanced their awareness on the importance of conversation of their ecosystems. This, however, is perceptual as there was no measurement and comparison being undertaken.

More Eco-friendly fishing and are farming being practiced. For instance, more and more farmers are trying to produce their own organic fertilizers. Besides, the fishery protection areas and training on Eco-friendly fishing led fishers to understand the importance of non-destructive fishing, and to manage the catch so that they do not overfishing. Eco-friendly fishing practices such as line fishing, spearfishing and bagang (lift net) are re-introduced to fishers in Kaledupa Island (KUN Mantigola) and in Tomia Island (Poassa Nuhada), etc. In Wangi-Wangi Island the erection of buoy markers and awareness-raising on fishery protection areas by Komanangi keep fishers from fishing in the no-take areas. In Kaledupa Island, Toudani Project in the riverbank and watershed has reduced or stopped farmers from clear-cut the areas for farming. In Binongko Island poison fishing (tuba or pandita) is reported by Famokossa to be no longer visible.

Improvement in income, affects other aspects of life. The double benefit of an increase in income and cut in expenses has allowed communities to spend their money for improving their life quality, such as for education and health. For example, KUN Mantigola reported that prior to the project communities of Bajo Mantigola always went to local traditional healers when they had health issues, mostly due to lack of money. Now, they could afford to get support from medical facilities (doctor, clinic, etc.).

The Project inspired community members to re-practice good habits (local wisdoms). For examples, Famokossa Project in Binongko Island reported that support for the family having functions (wedding, funeral, circumcision party, etc) used to be in kind and among others in the form of firewood. This habit had been long gone. Now, as the awareness on preserving the trees increases, communities go back to the old habit so that families organizing functions do not need to cut trees for cooking.

6. Empowerment of Women and Customary Communities Involved in the Projects in Wakatobi Islands

Women Empowerment

Some of the activities are closer to women. The activities undertaken under the project design are related to the management and conservation of natural resources. That said, the activities are also closely related to food (from marine and terrestrial sources) security, availability of clean water, improvement of family income which are the interest of all members of society, regardless of their gender. This project introduced the spirit that management of ecosystem and natural resources are of the interest of the entire households. Male and female share equal responsibilities, and therefore equal participation of women and men becomes one of the important indicators to the success of partners.

Participation is measured by attendance to the project activities. Attendance of women in activities dedicated to women are very good. Activities dedicated to women are: training on cooking local food, training for the construction of wood efficient stoves, the establishment of saving clubs and group enterprises, training on cotton farming, training on natural dye, tree replanting, etc. However, for other meetings related to fishery protection areas, protection of springs, and other more public activities women participation was very low.

Participation of women in the dissemination of knowledge and Eco-awareness practices in family. The involvement of women in the project activities is pivotal. As women play important role in their families, any knowledge and insight on Eco-friendly behavior will be translated into family activities. This will help build a foundation for the adoption of Eco-friendly behavior in the communities. For example, in cooking healthy local food. When women adopt this behavior the whole families will be affected, and they are also healthier.

Role of Customary Communities
Recognition and appreciation to the customary communities and local knowledge. Despite their declining influence, customary institutions still play an important role. The partners mentioned that the customary institutions are still respected, involved in the key decision-making process by communities. Partners involved them as they could enhance adoption and reception of the solution by communities, especially on the conservation of natural resources. This facilitates intergenerational transfer of knowledge.

Participation of Youths and Elders
Roles and participation of youth are more recognized. It is worth noting that members of communities who participated in the project are mostly youths. They are from Karang Taruna, boy scouts, students. They participated in the protection of springs, training and implementation of Eco-friendly farming, construction of wood efficient stoves, dissemination of any activities and documentation of the activities.

Other examples of youth participation. Among others:

- Toudani Project in Kaledupa Island, participation of youth is very high in this project.
  Some activities are dedicated for youths: establishment of demonstration plots for Eco-friendly farming, trees replanting, etc. The youth bring opportunities for sustainability when the Karang Taruna adopts the activities and turns them into business a plan. Training modules for environmental protection are adopted in the formal curriculum of Islamic high school in Mantigola.

- Kahianga Mambali project in Tomia Island, youths actively participated in the discussion and learning on agriculture in community school (Sikola Kampo).

Foneb Project in Binongko Island, youth from Karang Taruna dan boy/girl scout actively engaged in tree planting and protection of springs.

Participation of Elders:
The Range of community members participating in the project is from teens to elders (60-70 years old), with most of them at the productive age. The elders are engaged especially for ensuring the transfer of traditional knowledge and wisdoms, customs and traditions on agriculture, food and crops handling, etc. They are involved as advisors to the project and other development activities. Forneb learned from the project in Binongko Island that local wisdoms could ensure the sustainability of the conservation activities when properly documented. The village government has started to do so.

Typical Native Home of Wakatobi

Box 3
History and Influence of Customary Institutions in Wakatobi Islands

Wakatobi was part of Buton Sultanate. The customary institutions were rooted to the Sultanate. Since independence the role and influence of the customary institutions diminished, officially wiped out in 1958. However, as their role are still considered to be important the customary institutions has been resurrected recently.

The government of the Wakatobi District has issued a policy to revitalize the customary institutions to allow them to support the development of the District. The objective for the revitalization: 1) to support the government in preserving culture and local wisdoms, 2). To bridge and mediate differences and tensions between customary communities and government, especially with regard to land disputes between government and communities. 3). To support government efforts in protecting and conserving natural resources, especially after the District's areas were declared as a national park. In 2012 the District government recognize the establishment of customary institutions in every sub-district.

Several studies have mentioned there are several tribes and ethnic groups in Wakatobi Islands. Majority is the Wakatobi tribe (90%), Bajo tribe—they call themselves Same/Same Tribe (8%) and the rest are from various backgrounds. Within Wakatobi Tribe there are at least 14 Customary Communities:

- Customary communities Wanse, Mandati, Liya and Kapota in Wangi-wangi Island and Kapota Island;
- Customary communities Kahedupa, Ollo, Watole, Lewuto, and Laolua in Kaledupa Island;
- Customary communities Waha, Tongano and Timu in Tomia Island;
- Customary communities Mbeda-beda and Cia-Cia in Binongko Island.

To strengthen the legality of the 14 customary communities the Head of the District of Wakatobi had issued Regulation 44/2018 on the legality ofcustomary communities Bharata Kaledupa in Kaledupa Island, dan regulation. 45/2018 on Customary communities Kawati in Tomia Island.

Source: various paper, article and media coverage.

Box 4
Participation of Customary Institutions in the Project

- Komanangi (Pulau Wangi-wangi): Customary institutions participate in the discussion on marine conservation, surveillance, and information dissemination in 5 Liya Villages

- Toudani (Pulau Kaledupa): Customary institutions participated in any activities on spring protection and management. Traditionally, customary institution has jurisdiction over the management of the areas. Their participation help ensure the sustainability of the project.

- Panglima (Pulau Kaledupa): Customary institutions encourage community members to wear traditional sarong in the Barata Kaledupa Festival and other events.

- KUN Mantigola (Pulau Kaledupa): Customary leaders served as sources of wisdom and information to ensure the preserve traditional wisdoms

- Poassa Nuhada (Pulau Tomia): Customary representative (Meantu'u Timu or Eastern Tomia Leader) was part of the project, and was frequently consulted.

- Kahiangan Mambali (Pulau Tomia): Customary communities of Kahianga Village paid more attention to their nature, especially their protected forest. They also realized the impact of the cutting of their precious forests for shifting cultivation.

- Foneb (Pulau Binongko): Customary institutions Sarano Wali always supports the project activities and was frequently consulted.

- Famokossa (Pulau Binongko): Customary institutions in Binongko always participated but their role could have been improved if they are more organized. The customary institutions needed to be revitalized, to be improved their capacities and understanding of their roles, etc.

Box 5
Values, knowledge and local wisdoms on agriculture

Hidrawati et al. (2019) suggested that local knowledge relevant to the local ecological, social, economic and cultural condition and being implemented will become local wisdoms. Among others, as practiced by people of Wakatobi in implementing their traditional knowledge in farming is suitable for them who live on "soily rocks" (as they land are mostly non arable rocks).

Hidrawati et al conducted their research in Binongko Island. Local knowledge in maintaining food security inspired farmers to mix their crops in different time for planting and harvesting. Local knowledge and wisdoms help farmers to read natural signs (weather, stars composition, presence and behavior of certain animals—terrestrial such as certain birds and marine such as whale, etc.) and to observe certain rituals prior to farming, and selecting days to start planting (Kutika), cultivating the land (Bhelaia rituals), prayers (phitado), crops composition, repelling of pests (Bhija-bhija/Bhatata, and Phidongka), nurturing plants, and harvesting rituals (Tompe'e), etc.

Realizing that occasionally they face failure in their farming, and they also need to travel far (using boats for trading), the communities in Wakatobi had invented technology for food preservation.

Communities in Wakatobi Islands have similar traditions, perhaps there are differences in the names, but generally they are similar. For example, Ardin, Sayuti and Marhadi (2020) mentioned that in Kaledupa Island there is Pohamba-hamba tradition, a collaboration of community members to clean up and prepare farmland, this is done in groups (Potulu-tulu'a). This tradition is expression of cooperation and collaboration spirit among neighbors in the communities, both by men and women (although they do it in separate groups).

7. Additional Benefits

There are many additional benefits gained by communities from the project. Some are identified as the following:

- **Improvement in insight, knowledge and skills**. Numerous activities such as meetings, discussion, trainings, practicing the newly acquired knowledge on various topics (management of marine and terrestrial resources, Eco-friendly farming and fishing, construction of wood efficient stoves, weaving cotton with natural dye, local food processing and cooking, etc.) have helped communities to acquire new knowledges, insight and skills as individuals and groups.

- **Inter-generational transfer of knowledge.** Documentation of the project activities (maps, books, leaflets, modules, manuals, videos, films, etc) could help future generations in learning the rich knowledge gathered through this project.

- **The project as venue for community education.** In villages, especially in remote areas project activities usually attract attention from community members, regardless of their gender and age. They eagerly participate, engage and take part in the project activities. The project indirectly facilitates the communication and learning of community members.

- **The project strengthens social networks and social capital.** This project has effectively taken two years from the beginning to the finish. In that period various activities have allowed all members of communities women, youth, schools, security (police and Babinsa/ military), government from various levels, and Wakatobi NP authority to engage and interact. The project activities enhance social bonding and cohesion and allow expansion of the social network (to reach national, even international network) and strengthening social capital. Communities could learn and appreciate the importance of collaboration to achieve the common goals: improved livelihood and conservation of natural resources.

- **The Project to enhance economic capital.** Foneb project in Binongko Island, communities built 20 units wood efficient stoves at a bigger size and rent them out to members of communities who need them for hosting parties/functions. The daily rent for the stove is IDR 25.000/unit/day. The revenue from the stove rent is collected by women organization (Dasa Wisma). On the other hand, at Poassa Nuhada, communities enjoy the benefit of their floating surveillance post (equipped with a lift net, known as Bagan or Bagang). Bagan helps cut cost and introduces a revenue stream albeit small to the communities.

- **The Project helps conflict resolution.** The project has helped communities to learn about governance and management. The agreement reaches in the resource use, for instance in the establishment of the fishery protection area and the regulation around it, helps communities to set ground rules for (marine) resource utilization. The arrangement prevents conflicts from emerging and escalating. Similarly on the other resource utilization: water, mangrove, etc. The situation could be more complicated in springs and water sources as they are often located in privately owned lands. Communities are usually blamed for the degradation of mangroves, and the agreement helps reduce the tension.

- **Project facilitated innovation and modification of solutions.** The project activities are not necessarily new to some of the community members. Although most of them find the solutions are new and innovative. Those who have some familiarity with the solution, they suggest modification. For example, on the wood efficient stove the design was modified to meet local conditions and community needs. Material has been changed, and the size as well.The community in Binongko has built larger size for addressing the need of functions. have been exposed or familiar to the activities. In Poassa Nuhada in Tomia Island modified the fish fishing ground around protection areas for recreational fishing.

- **The project improved the experience, knowledge, and skills of Host and Partners.** Forkani dand an Lawa Toudani as host (coordinator) were partners (implementing partners in collaboration with government, other NGOs, or donors) before GEF SGP Phase-6 Project. Their roles are shifted in the GEF SGP Phase-6 as they have to coordinate other organizations, for a relatively long duration. Many of the partners are new and managed by young talents. Their experience in and exposure to conservation works are limited. They are also varied in their background, some of them are from farmers'/fishers' organizations, cooperatives, weaving groups, etc. Some of the organizations are new to GEF SGP-UNDP works. This situation was challenging to them, and they admitted that the lack of experience has led them to face numerous challenges. They overlooked details, communicated poorly, misunderstood messages, were unable to meet deadlines and to provide complete reports, and missed the point of conservation works. The situation is worsened by the presence of too many organizations brought in by GEF SGP Indonesia to Wakatobi. Despite the initial intention was have them train and support the partners, these organizations brought in by Secretariat added complexities and workload to the partners

8. Lesson Learned

Good Practices

There are good practices in the project that could be replicated elsewhere:

- Project activities are selected based on the need of the communities and the environment. The initial mapping and dialog with communities ensure that the project is acceptable by communities or not.

- Collaboration amongst parties was established. Almost all activities involved multi parties, especially at the village level and landscape. Therefore, a collaboration of the parties was essential.

- Openness for dialog. The patient is a virtue and is much needed in working with communities. Adding to that, all parties must be transparent, open for dialog and be willing to take some tough questions, among others on fund utilization, benefit distribution, etc.

- Willingness to engage with local institutions ensure the project's sustainability. Having local institution as implementing partners bring additional benefits. The management of the partner's organization will need to ensure that their reputation is not tarnished by failures of the project, this makes them work hard and be careful. They are also part of the communities and therefore a sense of ownership is high. Living with the communities also allows them to work 24/7 and even after the project ends.

9. GEF SGP Support

Host and Partners are in unison regarding the support they got from GEF SGP Secretariat. They are:

- Funding and project management. In addition to fund, the GEF SGP provided technical support such as capacity building on understanding the issues better, planning and proposal development, documentation of process and progress, writing, report development, etc. GEF SGP approach is considered to be flexible and allows the partners to grow.

- Monitoring and evaluation. The monitoring and evaluation help the partners to stay on track and redirect the project to reach the goals and outcomes.

- Information and knowledge sharing. GEF SGP Secretariat and Teras Mitra (an organization formed by the Secretariat of GEF SGP) have provided a platform for learning, sharing information and contacts of resource persons/

institutions to partners and Hosts. This support was very helpful especially during the Covid-19 restriction period.

Wakatobi People especially women will have meti-meti, that means fishing or collecting clams at the low tide

Box 6
Fishers and coastal communities empowerment, most important factor in coastal conservation in Wakatobi Islands

Wakatobi Islands are enriched with fishery resources. Fishing, in addition to farming, has become an important source of livelihood. Most people of the Wakatobi Islands do both fishing and farming. Only the Bajo (or Bajau/Same, also known as sea gypsy communities) solely depend on their life from marine resources. The Bajos have settled in Wakatobi since hundred years ago. Compared to in other areas in Indonesia, the settlement of Bajo Tribe in Wakatobi is the biggest. Their values, knowledge and skills embedded in their local wisdom on marine affairs have been recognized by the world (Samudin, et al, 2019).

There are five settlement areas of Bajo in Wakatobi: Mola in Wangi-Wangi Island, Mantigola and Lohia in Kaledupa Island; Lamanggu inTomia Island; and Sama Bahari in Binongko Island. Tahara (2013) recorded the integration process of Bajo Tribe and Wakatobi Tribe has not be always smooth and peaceful, especially in1960 when the country was tense and faced horizontal conflicts due to DI/TII rebellious movement in Sulawesi. Bajo Tribe also lives with a negative stereotype as blasting fishers, coral reef destroyers, and accused of doing many things to destroy the marine resources and ecosystem (among others please check Suryanegara, 2015; Basri, Mudana and Rahman, 2017).

In the past, Bajo people were nomadic, hopping island to island across South-East Asia. They literally live on their boats and do not have the culture and habit of living on land nor settled in one place for an extended period. They are also known as sea gypsies. Recently, because of some pragmatical needs: sending kids to school, looking for jobs, improvement of life quality in general, the sea gypsy started to settle. They built elevated houses in coastal areas, often on reefs. However, in addition to the positive impacts from the resettlement, Suryanegara (2015) indicated some negative impacts from it: declining role of Bajo customary institutions, changing and reorientation of the way of life, and increasing consumptive behaviors. This could lead to the changing of their world-view. Sea could be seen is as no longer a fish provider, but as a resource to be exploited. This led to some destructive behaviors of the Bajo. A cultural concept of Pamali—restriction to do anything deemed inappropriate—has been eroded over time (see, Niampe and Sifatu, 2020).

However, such accusations need to be verified and confirmed with evidences. It is not only the Bajo who commit destructive behavior to marine resources, others do too. In short, any efforts to protect and conserve the environment must start with community empowerment. It should start with improving the knowledge and skills of fishers or their marine resource users the program needs to be complemented with alternative source of livelihood too.

GEF SGP Phase-6 has put efforts to empower coastal communities and fishers, which include other customary communities of Wakatobi Tribe and Bajo Tribe. This needs to be continued by the government, communities and any parties working on natural resource conservation and improvement of communities' livelihood.

10. Factors for Success

Many factors contributed to the success of the project. Each partners and project has different factors that contributed to their successes, but generally there are:

- **Support and collaboration with parties/ stakeholders in the villages.** Acceptance, supports, collaboration amongst partners,host/ coordinator, and stakeholders at village level (community organizations, fisher/farmer groups, women groups, leaders, government, community representatives or BPD, etc) are key to the success of the project.

- **Collaboration with parties/stakeholders from outside communities.** From outside the communities the project enjoyed collaboration and support from police, sub-district government, District Government of Wakatobi Islands. Wakatobi NP authority, and other NGOs. The collaboration was easier to build with organizations that share the same agendas and objectives: conservation of natural resources and biodiversity, food security, women participation, Eco-tourism, and recognition of traditional wisdoms. The approach of putting dialog and collaboration help significantly to the projects' successes.

- **Understanding local dynamics and political constellation.** Project implementers need to understand the dynamics of the local politics (including and not limited to the election of a head of the village, a relation of elites in the villages, or larger scale election for Head of District of Wakatobi and/or governor of the South East Sulawesi Province). Being close to the village head could bring benefits, but potentially it also could create suspicion and questions. The project needs to be able to maneuver around this political land mines, as it may lead to some 'disintegration' in the communities.

- **Participation of women is key.** Project activities on utilization and management of natural resources closely linked to household life: food security, households' income and expenses, health, education, etc. Those are the responsibility of every person in the communities regardless of their gender. Therefore, women participation is important. There was a lot of evidence suggesting that women are more dedicated, have more time, knowledge, skills and passion to work on this issue.

11. Recommendation

Maintaining what has been accomplished, replicating the successes. The accomplishments of this projects need to be maintained so the stream of benefits will continue to be enjoyed by communities. Fishery protection areas need to be managed, and communities need to comply with the regulation of marine resource utilization so that the fishers and other communities could continue to enjoy the benefits; springs and trees that support them need to be nurtured so the water could continue flowing; wood efficient stoves need to be replicated; local food needs to be preferred to the 'imported' one; cotton clothes with natural dye need to be expanded its production to replace non-natural products. The knowledge and lessons need to be transferred to the next generation.

Connecting with village government policy, program, and budget. The activities in conserving the natural resources so that communities could enjoy the benefits need to be sustained by linking them with policy (legal framework, support system), funding and financing, and development (including the marketing). The closest government entity to be engaged in village government. Fortunately the village government is endowed with the Village Development Fund. The allocation of Village Fund (from District Government) which potentially could be used to support the conservation activities. It is needed to continue the open dialog and explore opportunities with other mission-aligned parties.

Maintaining and expanding network. The network that has been established needs to be maintained and expanded whether it is at the village level, communities, or other networks within the GEF SGP Phase-6. There are more values, knowledge, technologies, skills that need to be explored and shared among the local member of the network, or with/from outside partners.

12. Conclusion on Governance and Management

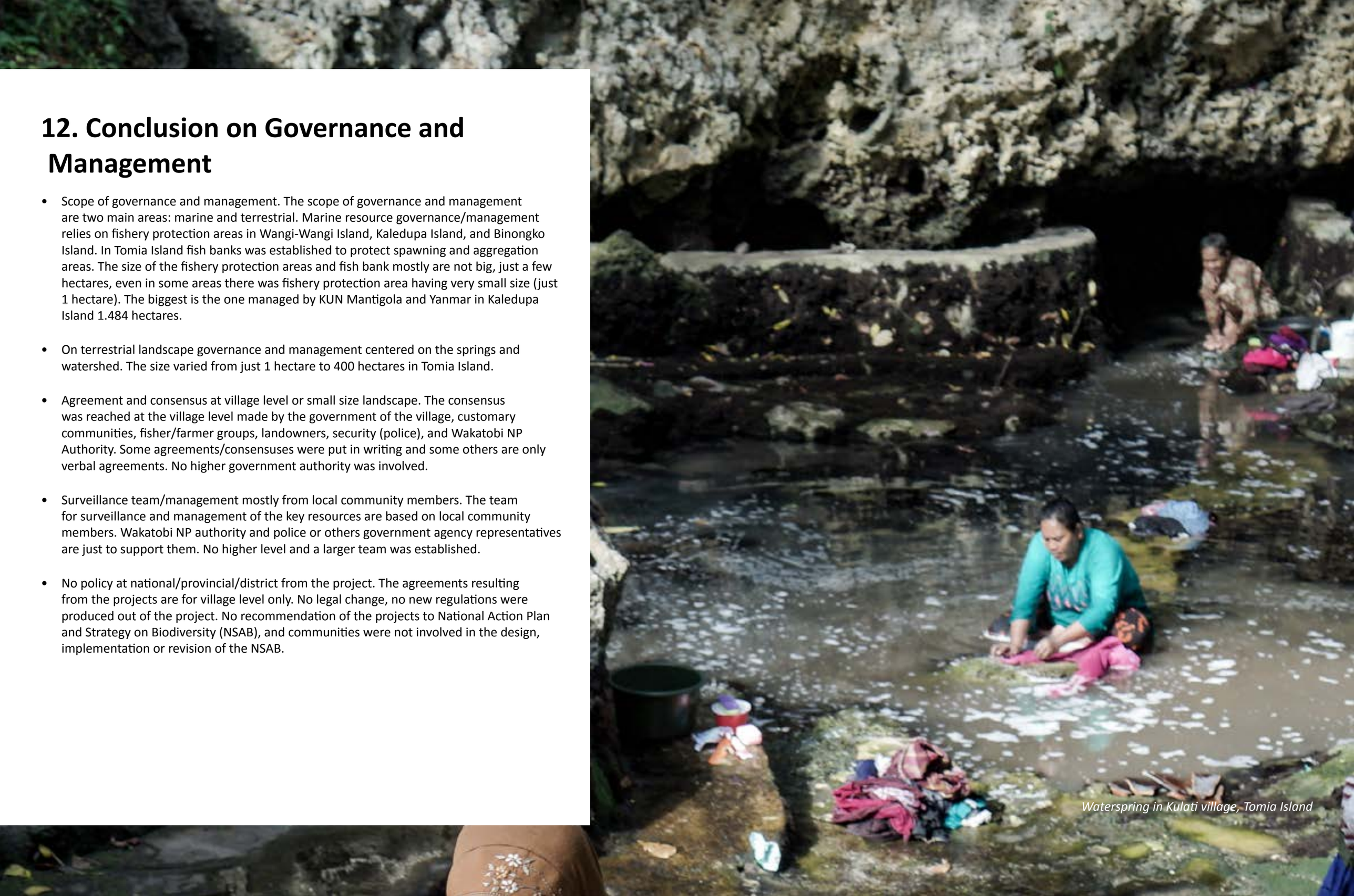
- Scope of governance and management. The scope of governance and management are two main areas: marine and terrestrial. Marine resource governance/management relies on fishery protection areas in Wangi-Wangi Island, Kaledupa Island, and Binongko Island. In Tomia Island fish banks was established to protect spawning and aggregation areas. The size of the fishery protection areas and fish bank mostly are not big, just a few hectares, even in some areas there was fishery protection area having very small size (just 1 hectare). The biggest is the one managed by KUN Mantigola and Yanmar in Kaledupa Island 1.484 hectares.

- On terrestrial landscape governance and management centered on the springs and watershed. The size varied from just 1 hectare to 400 hectares in Tomia Island.

- Agreement and consensus at village level or small size landscape. The consensus was reached at the village level made by the government of the village, customary communities, fisher/farmer groups, landowners, security (police), and Wakatobi NP Authority. Some agreements/consensuses were put in writing and some others are only verbal agreements. No higher government authority was involved.

- Surveillance team/management mostly from local community members. The team for surveillance and management of the key resources are based on local community members. Wakatobi NP authority and police or others government agency representatives are just to support them. No higher level and a larger team was established.

- No policy at national/provincial/district from the project. The agreements resulting from the projects are for village level only. No legal change, no new regulations were produced out of the project. No recommendation of the projects to National Action Plan and Strategy on Biodiversity (NSAB), and communities were not involved in the design, implementation or revision of the NSAB.



Waterspring in Kulati village, Tomia Island

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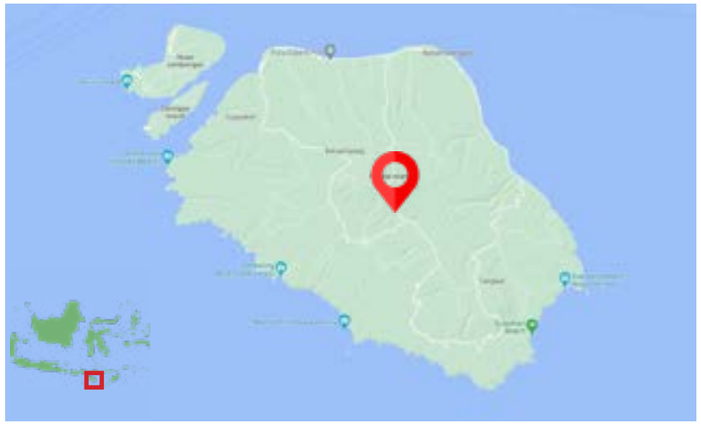
NUSA PENIDA ISLAND
BALI PROVINCE

Fast boats are used as transportation mode between islands



1. Landscape Condition in Bali Island

Nusa Penida is one of four sub-districts in the Klungkung District, Bali. The areas of Nusa Penida (202,84 hectares) composes 64.4% of total Klungkung district areas. There are three main islands in this District: Nusa Lembongan, Nusa Ceningan and Nusa Penida. The Islands are situated in the southeast of Bali, accessible by boat across Badung Strait from north and west and through Lombok from east of the islands. In Nusa Penida there are 16 officials villages, 79 sub-villages, 40 customary villages and 157 Banjar or communities.(BPS, 2019)

Nusa Penida Sub District is at 0-268 meters above sea level. Many references stated that Nusa Penida consists of karst topography, with uneven and steep undulating topography. The highest point of 268 meters above sea level is at Mundi Hill, Klumpu Village. The karst topography of Nusa Penida is unique and included in the 17 unique karsts in Indonesia.

Islands of Nusa Penida, Lembongan and Ceningan are made of limestone and dead coral which formed into karst. The expert stated that the Nusa Penida Islands are made of clastic and non-clastic limestone. Occasionally, there is some impermeable layer of soft limestones within the layer of clastic limestone. Due to this underground water becomes cascaded. In other areas, the dome structure that usually formed after the collapse of certain layers was not well developed. So are the caves in the karst of Nusa Penida. The karst in this areas is relatively well developed despite lack of waterfall (only under 1,600 mm annually, Dena,

2012). The karst has a very soft withy mineral which is used as construction materials by local communities. Whitten, 2013 found hilly pyramidal karst and rocky beach in Nusa Penida. Topsoil in Nusa Penida is thin, consists of a lot of limes and tend to dry (with little water content), and is therefore unfit for rice farming (Astjario, 2008). The basin of Nusa Penida Sea is not only beautiful but also unique for the current ripple resulted in some sea sedimentation which is rare to be found in karst with deep-sea trench. It is believed that the sand at Crystal Bay comes from the underground river.

In addition, Nusa Penida Strait also has one of the deep-water canals(>300 m) with a semidiurnal tide (twice a day hightide and low tide). This water canal allows divers to have drift diving (diver moves along with the current) while enjoying the underwater beautiful biodiversity. This under-water current also attracted Mola-Mola or sun fish, manta ray (Mobula birostris) a giant fish often surfaced in many of the spots around Nusa Penida. Mola-Mola and manta ray are the main attraction to divers and snorkelers in Nusa Penida.

Nusa Penida Sea is rich with unique and beautiful atolls, coral reefs, karst. The coral reefs spread in 1,419 hectares areas, with 296 coral species and 576 fish species. This is part of the Coral Triangle, and one of the focuses of conservation projects. There are also mangroves and seagrass. They are important habitats formanta, turtle, shark, whale, dolphin, dugong, mola-mola etc.

Because of its uniqueness and beauty of its nature, Nusa Penida has been declared as National Strategic Area (KSN), as National Strategic Tourism Area(Kawasan Strategis Pariwisata Nasional or KSPN 2010-2025, since 2011), as National Special Strategic Area (or Kawasan Strategis Nasional Khusus KSNT) at the small outer Islands (border islands)or Kawasan Pulau-Pulau Kecil Terluar (PPKT, since 2018). Naturally Nusa Penida also become one of the icons and strategic tourism destinations in Bali Province offering culture and natural tourism. The tourism tag-line in Nusa Penida is ‘Blue Paradise’, since most tourists come to these islands for enjoying marine tourism. Tourism destination in this area is marine ecosystems which are also a conservation area, with white sandy beach, cliff, temples, and caves. Tourism activities include diving, snorkeling in many of coast areas around Nusa Penida: Toyapakeh, Tanah Bias, Ped, Sental, Buyuk, Sampalan, Malibu, Batu Abah, Batu Lumbung, Meling Stone, Crystal Bay, Gamat Bay, dll. To promote tourism in the region, the district government of Klungkung held Nusa Penida Festival in 2017. The islands also have easy access from mainland Bali and Lombok. There are regular fast boats, ferry (roll on-roll off the ferry), etc. There are several ports and piers in Nusa Ceningan and Nusa Lembongan connected by boats with those in mainland Bali (Padang Bai or Sanur). The three islands (Nusa Ceningan, Nusa Penida and Nusa Lembongan) are connected with the boat.

According to BPS (2019) Population of Nusa Penida was 45,580 people in 2018 (22,690 male and 22890 female). The population density was 224 people/square kilometer (lowest in Klungkung District). Most of the people in Nusa Penida are farmers doing agriculture and livestock, carpentry, construction workers, seaweed farmers, fishers and workers in the tourism industry. Some of the construction workers and workers in the tourism industry are migrant workers. Some construction workers work and live in mainland Bali. Those in the tourism industry in addition to working in Bali and other areas, some work abroad too (on cruise ship).

Nusa Penida had been isolated in the past. Lack of infrastructure makes these islands neglected. The isolation affected how the community sees themselves and how they relate to nature. The Nusa Penida people seem to be different from those in mainland Bali. After the isolation was broken up by frequent boat trips and the opening of the economy, the northern people and those affected by tourism had changed slightly, but the southern communities continued to preserve their cultures and their vernacular beliefs. The people of Nusa Penida divided were into the native (Orang Nusa) who had inhabited the island, before the island was decreed as exile/imprisonment areas by Klungkung Kingdom (Bagus, 1981). The incoming inhabitants lived in the northern and western side of the Islands. Those sides are facing mainland Bali, with a relatively flat sandy beach and more accessible by boats from Bali. The native or Orang Nusa lived in the southern and eastern part of the island, relatively isolated in life with their vernacular beliefs (very local and specific). The vernacular beliefs were evident from the findings of archaeological remains (temples) which are different form those in mainland Bali. Examples of those temples are: Pura Puser Sahab, Pura Meranting (in which a building called Padmasana Kangkang was found), Pura Puncak Mundi and many others (Geria, 1997) (see Wijaya, Paramadhyaksa, and Jayanti, 2018).

Nusa Penida is a world tourism destination. However, the growth enjoyed by the tourism industry is not necessarily shared with most local inhabitants. The Island is also not fertile, and much of the food (rice and vegetables) are brought in. There is always a deficit due to the high demand and low ability of the island to produce those. This pushes local food aside and makes people of Nusa Penida dependent on an external source of food.

The Island is also vulnerable to climate change impact, and moreover, by the impact from the development. Land conversion took place at an alarming rate. Communities, especially the young ones, lost their interest in farming and focus on non-farming economic activities (construction and tourism) as this allows them to get quick and more cash needed to buy food from external.

2. Institutions Involved in the Nusa Penida Project Implementation

In GEF SGP Phase-6 in Nusa Penida Island the project is coordinated by one Host, Wisnu Foundation, which worked with eight partners.

Table NP1: Project Location, Office of the Host and Partners in Nusa Penida

No	Institutions	Office (Island)
1	Wisnu Foundation (Host/Koordinator)	Bali
2	Kalimajari Foundation	Bali
3	Wisanggeni Association	Bali
4	Pusat Pendidikan Lingkungan Hidup Bali (PPLH Bali)	Bali
5	IDEP Selaras Alam Association	Bali
6	Tenun Cepuk Alam Mesari Group	Nusa Penida
7	I Ni Timpal Kopi	Bali
8	Taksu Tridatu Association	Nusa Penida
9	Jaringan Ekowisata Desa (JED)	Bali

Host/coordinator (Wisnu Foundation) is located in mainland Bali Island, and so were six of the partners (75%), only two partners are in Nusa Penida (Taksu Tridatu Foundation and Tenun Cepuk Alam Mesari Group. For the partners whose offices are in Bali, they have field staff who don't live in Nusa Penida. Only the staff of Wisanggeni and Kalimajari have their field staff staying most of the time in Nusa Penida (although Kalimajari staff is occupied with other works, so the coordination was not so effective).

Bali and Nusa Penida are not far, and the boat ride is always available regularly and with low risk. That said, the effort for traveling needs to be made. To fill the gap, communication was key and unfortunately, despite the fact that Nusa Penida is a world tourism destination, there are some blank spots for cellular coverage.This brings additional challenges to the project implementation especially when everyone was relying on phone and virtual communication during the restriction of mobility due to Covid.

Table NP2: Funding, Project Duration, and Activities in Nusa Penida Island

No	Institutions	GEF SGP contribu-tion (USD)*	Co financing	In kind contribution**	Project duration (month) ***	Activities
1	Wisnu Foundation (Host/ Coordinator)	45,000		50,790	24	• Support to partner coordination • Develop understanding of communities on their potentials (ecology, economy, and social-cultrure • Protect and maintain environmental quality toward sustainable use of resources • Increase communities' resilience • Improve knowledge and innovate for enhancing food security • Improve local governance for supporting communities and sustainability of the resources
2	Kalimajari	36,000		40,071	15	• Seaweed farming • Improving data and technology for supporting seaweed farming • Improve seedling of seaweed
3	Wisanggeni	25,000		25,031.30	8	• Agroforestry • Mix crop planting • Improvement of Cotton farming
4	PPLH Bali	45,000		80,851	21	• Waste management • Local policy on environment • Construction of waste management facilities • Establish waste volunteer team and learning media

No	Institutions	GEF SGP contribu-tion (USD)*	Co financing	In kind contribution**	Project duration (month)***	Activities
5	IDEP Selaras Alam	51,482		52,911	16	• Permaculture; • Household liquid waste management
6	KTC Alam Mesari	11,700		11,713	10	• Natural dye for weaven clothes • Agroforestriy • Cotton farming improvement
7	I Ni Timpal Kopi	25,050		25,685	8	• Silvopastore-cow; • Biogas-cow; • Solar panel installation ; • Renewable energy campaign.
8	Taksu Tridatu	36,000		45,524	11	• Silvopasture-cow; • Kadasan (profit sharing) for cow farming, and biogas; • Silvopasture training center.
9	Jaringan Ekowisata Desa (JED)	25,000		26,934	12	• Tourism village,Ekologic Nusa Penda; • Distribution of seedlings to support ecotourism
	Total	**300,232**		**359,410.30**		

Source: Compiled from a database of GEF SGP Phase-6 Secretariat.

**Currency Rate assumption 1 USD = Rp 14.000.*
***For "In-kind contribution" is not populated because Partners and communities are not used to calculate it. In reality, there are numerous contribution from communities: supplies, time, transportation to the meetings, space/venues for various activities in the projects.*
****Project duration is counted in total, all Partners and Host requested a no-cost extension due to Covid.*

Activities of the project implemented by 8 partners are categorized based on their specialties. Some are unique to certain partners, some others are shared by partners with common interests.They are (1) Seaweed farming, by Kalimajari, (2) home food gardens by Wisanggeni, Taksu Tridatu, KTC Alam Mesari, dan IDEP Selaras Alam; (3) Agroforestry around temples by Wisanggeni; (4) Traditional weaving and natural dye by KTC Alam Mesari; (5) Cotton farmingfor local weaving by KTC Alam Mesari dan Wisanggeni; (6) Silvopasture Bali cow, by Taksu Tridatu, and I Ni Timpal Kopi; (7) Waste management by PPLH Bali; (8) Domestic liquid treatment by IDEP Selaras Alam; (9) Renewable energy (biogas and solar panel) by I Ni Timpal Kopi and Taksu Tridatu; (10) Ecotourism enterprise and eco tourism village ekologis by Jaringan Ekowisata Desa (JED). All beneficiaries are involved.

3. Landscape Governance and Management in Nusa Penida Island Project

As Nusa Penida has been declared as National Strategic Area (KSN), as National Strategic Tourism Area(Kawasan Strategis Pariwisata Nasional or KSPN 2010-2025, since 2011), as National Special Strategic Area (or Kawasan Strategis Nasional Khusus KSNT) at the small outer Islands (border islands)or Kawasan Pulau-Pulau Kecil Terluar (PPKT, since 2018), the Island has attracted attention from government and become a destination of world tourism.

Governance of the project in Nusa Penida was on the terrestrial landscape (See Table NP4: Landscape Governance and Management of Terrestrial Landscape in Nusa Penida) and only one partner worked in marine landscape, Kalimajari (See Table 3: Landscape Governance and Management of Marine Landscape in Nusa Penida)

With regard to marine landscape management, Kalimajari focused more on the development of seedling of seaweed, trial many varieties of seaweed in Indonesia. In other words, even Kalimajari was not on landscape management of seaweed farms, but rather on introducing good seedlings to support seaweed farming. They started only at Nusa Penida Island, but over time they were also introduced to farmers in the neighboring island, Nusa Lembongan. It is worth noting that the number of seaweed farmers have sharply declined. They have shifted to other sectors such as construction and tourism. Covid 19 pandemic hit tourism industries and construction, and they went back to farming.

Tabel NP3: Landscape Governance and Management of Marine Landscape in Nusa Penida

Partner	Agreement	Process	Team
Kalimajari	No governance/management of seaweed farming in Banjar Semaya in Nusa Penida island and in Lembongan, Nusa Lembongan island. Instead, reintroduce seaweed farming, improve seaweed seeds, improve availability of supporting data (scientific data on water, weather, climate, areas/size of each farmer, etc)	Laborotarium test, development of climate/weather calendar, development of demonstration plot, mapping of the seaweed farms, and survey on farmers livelihood.	Technical team of Kalimajari, eperts, and few farmers.

Terrestrial landscape management is more varied as the follows:

Tabel NP4: Landscape Governance and Management of Terrestrial Landscape in Nusa Penida

Partner	Agreement	Process	Team
Wisanggeni	Agreement with temple management to manage the customary forest belong to the temple and demonstration plot belong to Puser Temple Saab at Batumadeg Village, and forest around the Puncak Mundi Temple, at Klumpu Village Management of the land around the temple for plantation of monkey feed plants, productive plants, plants to support religious ceremony/ rituals,vegetables, seedling house and transit land for seeds. Around Puncak Mundi Temple the 10 are (1000 square meters) land is agreed to used for seedling home, transit areas, plantation of plants for religious ceremonies, and for making seed bomb	FGD and meetings to reach consensus with Batumadeg village head, Klumpu Village Head Customary leader (Bandesa Adat), key community leaders, community members, and management of temples (Puser Saab Temple and Puncak Mundi Temple) Agreement was reached to restore and rehabilitate ecosystem around the temples, establishing demonstration plots for seddling, and co-owned by communities and ruled by customary regulations. Agreement was recognized verbally (no written agreement).	Teams were established in each Temple, consist of members from temple management (6 men). The role in management and surveillance to ensure compliance is distributed. The teams coordinated the rehabilitation and restoration of the lands around the temples. The supervised the distribution of the seeds resulted from the seedling house around the temples to schools, banjar (sub village community), other institutions in Klumpu Village and Batumadeg Village and to congregation of the temples (Pengayah)
PPLH Bali	At the beginning, PPLH face challenges in getting agreement to utilize customary land for integrated wastemanagement center. Finally 200 sqm of land was lended to PPLH from one of the manager of the customary land who happened to be affiliated with Taksu Tridatu, with one condition the waste management cente must be clean and does not smell bad. Parties involved in the waste management center are members of Nyuh Kukuh Customary community. Agreement with youth of Nyuh Kukuh Customary Community led to establishment of Waste volunteer. Agreement with public elementary school (SDN) 3 Ped in Ped village to build waste bank.	Meetings we held to reach consensus. The meetings were attended by customary community Nyuh Kukuh, PPLH Bali and communities on waste management. Verbal agreement was reached: (a) Customary village allowed and approved the waste management program in Nyuh Kukuh customary communities; (b) Communities agree on the waste management project in Nyuh Kukuh customary communities. Meetings between PPLH Bali, Nyuh Kukuh customary communities, and Taksu Tridatu led to agreement to develop waste treatment and management in the village. The current practice is unfriendly to the environment (land filled and burned). The waste treatment center will become model for the communities of Nusa Penida. The agreement was written. With the youth in the village, PPLH Bali has reach verbal agreement to establish volunteer to help managing the waste, including collecting waste and cleaning the neighborhood. With School (SDN 3 Ped) PPLH Bali reached verbal agreement to build waste bank as a model for Nusa Penida Island	The integrated waste treatment/ management center has had a team to manage and run it. The center is managed by local people. The structure of the management team: advisors (ex officio Ped Village Head and Bandesa Nyuh Kukuh), Chair, secretary, treasurer, and coordinators of three divisions. PPLH Bali and Wisno representatives are supporter (external advisor). Youth volunteers in Nyuh Kukuh has 15 members (8 male, 7 female).

Partner	Agreement	Process	Team
IDEP	Permaculture approach was used in seedling center in four villages to support communities meeting their needs, especially for the religious ceremonies.	Meeting to build consensus with beneficiaries	Managed by the community
KTC Alam Mesari	Agreement in planting vegetations for natural dyeing of Cepuk woven clothes of Tanglad Village was reached. Land for the planting was made available.	Management and members of KTC Alam Mesari met with leaders of customary communities Tanglad to reach the consensus on the provision of land for the planting areas. The village is to provide the land. The consensus was agreed verbally.	Members planted and took care of the plants.
I Ni Timpal Kopi	Agreement to develop model for renewable energy in Ped Village and Kutampi Village in Nusa Penida Island was reached. The renewable energy is based on cow dong (biogas) and solar panel.	Numerous meetings involved many parties resulted in written agreement. Among of the points of agreement is identification of farmers as beneficiaries (biogas). Another point is on appointment of field worker from local community in Nusa Penida. The local officer will work in identifying the potential beneficiaries.	Until the end of the project, communities work with Partner (I Ni TImpal Kopi) and appointed one person of the communities to be trained and later to serve as repair man (technician) of biogas facilities.
Taksu Tridatu	PPLH Bali and Taksu Tridatu reached agreement Nyuh Kukuh customary communities untuk to manage waste treatment and management center	Written agreement to reach consensus was attended by Taksu Tridatu, PPLH Bali Adat Nyuh Kukuh customary communities on construction of waste treatement and management center.	Integrated waste management and treatment has had a management team consist of local members of communities.
JED	JED connect partners and Host to reach agreement on the development of eco-tourism at the partners' sites when ecou-tourism is applicable. JED supported partners who want to develop eco-tourism using the guidelines of the Desa Wisate Ekologis or DWE (Ecological Village Tourism)	Meetings with partners andHost to develop common understanding on DWE. Agreement to develop "Kelompok Ekowisata Nusa Penida", and its management. The organization serves as a holding organization to cover the whole island. A director lead the whole island operation, and coordinator lead at village level. The agreement was in writing anda bylaw is developed to strengthen the agreement, the technical internal regulation and SOPs are being developed.	A 5 persons team to manage the eco-tourism was established in each village. They were trained in developing storyline, guiding the guests/customers, and in traditional culinary. Some of them showed their interest and continue working in developing ecotourism in their villages. To date, they have simulated the training outcome but not yet implemented.

Agreements regarding management of marine landscape and terrestrial landscape in the projects in Nusa Penida Islands (and Nusa Lembongan Island) are at the village level. Some agreements are in writing, others in verbal agreements only. The meetings to build consensus were attended by all parties enthusiastically. Attending those meetings are representatives from village government, customary village leaders, Temple management, communities, farmers (agriculture and livestock rancher), women group, local businesspeople, partners and Host.

Teams were established to support the implementation of the projects during and beyond the project cycle. Among others there are: (a) I Ni Timpal Kopi in kadasan sapi (profit sharing in farming cows) activities ; (b) Taksu Tridatu in kadasan sapi activities; (c) PPLH and Taksu Tridatu, in managing integrated waste treatment and management at Nyuh Kukuh customary communities, and Nyuh Kedas Waste Volunteer; and(d) Jaringan Ekowisata Desa (Network of Village Eco-tourism) to initiate Village Eco-Tourism.

Box 1
Managing Nature in Balinese Tradition

Philosophical foundation for management of nature in Balinese Tradition is known by term Tri Hita Karana. It is out of Hinduism observed by Balinese centered in the thriving for a harmonious relationship with Gods, humans and nature. This philosophy is translated into various aspects of life by Balinese (Babad Bali, 2019). These values are passed from generation to generation, so it is nearly impossible to find Balinese who does not know this concept. This concept shapes the discourse and life of Balinese societies (Gorda and Wardani, 1999).

Tri Hita literally means “Three Causes for Happiness” Hendrik & Wardana, 2013, Paramajaya, 2018, and Sukarma, 2016). The concept emphasizes on the idea that happiness can only be acquired through a harmonious and balanced relationship with God (or parahyangan in local language), humans (or pawongan) and nature (or palemahan). (Gorda dan Wardani: 99-100).

The tenet of Tri Hita Karana translated in natural protection and conservation through (1) environmental sustainability is important as this is not only related to human and nature, but also to the deity, (2) respect to the tradition is key, and (3) we are nature, and nature is us. Human is unified and is identified by nature of their lives. The harmonious relationship of humans and nature will reflect in peace and improvement of life quality, and vice versa. (4) Human health and welfare is affected by nature’s health and wellbeing (5) Nature offers life and means of life, human must use them sparingly and mindfully, so that people and nature can continue thriving (Gorda dan Wardani: 103)

4. Legal Change and Participation of Communities in Strategic Policy Change

The projects worked at village level and reached agreements of stakeholders but had not been enacted or gazetted in any formal legal document, even at the lowest level of regulation (at Peraturan Desa or Perdes level).The project best achievement in this regard, is helping the implementation of village regulation on waste as indicated by PPLH Bali Project on the construction of an integrated waste management/treatment center. The government of the District of Klungkung and Nusa Penida Sub-district consider this initiative is worth replicated. The effort to legalize the agreement has been made but to no avail. This is due to the capacity, competence, and ability to work in respectful of differences across villages, including understanding the cycle of development planning, budget planning, etc. Because of the limitation of scope and duration, the Project was not able to influence policy at district higher level such as National Strategy and Action Plan on Biodiversity.

Activities in the project at best were able to modify the implementation of existing regulations. For example, the design of waste management and treatment conducted by PPLH Bali was based on the Perdes 7/2018 of Nyuh Kukuh Customary Village. The Perdes was enforced in 2020 and communities have complied with it. The project suggested the modification of the fee for waste treatment/ management from IDR 20,000/month for business to IDR 150,000/month. No changes for individual households fee (IDR 10,000/month).

Cananga, one of the most used ceremonial plants

Table NP5: Legal Change and Participation of Nusa Penida Island in Strategic District, Provincial, and National Policies

Partners	Legal change in national, district and local affected by communities' activities.	Impact or Input to National Policy (National Action Plan on Biodiversity)	National or Sub-National Policy Change Affected by the Project	Community Participation in Design, Implementation, or revision of the National Policy on Biodiversity)
Wisanggeni Foundation	Village/local agreement	None	None	None
PPLH Bali	Modification of fees for waste treatment	None	None	None
IDEP Selaras Alam	Village/local agreement	None	None	None
Kalimajari Foundation	Village/local agreement	None	None	None
Jaringan Ekowisata Desa (JED)	Village/local agreement	None	None	None
Taksu Tridatu Foundation	Village/local agreement	None	None	None
KTC Alam Mesari	Village/local agreement	None	None	None
I Ni Timpal Kopi	Village/local agreement	None	None	None

5. Impact of the Projects on Social and Economic Conditions in Nusa Penida Island

Change and measurable impact

The documents and reports indicated that there were no partners in Nusa Penida Island who conducted a systematic assessment to measure the impact of the project on various aspects: households income, individual income, diversification of source of income, job creation, access to market, etc. There was no baseline and after intervention data. Therefore no statistical evidence of the project impacts could be presented. In addition, the impact of this kind of project usually takes long a time to happen. It is still too early to see the expected impacts and changes.That said, several indications of changes could be presented as the following:

5.1 Reduction of Expenses. Examples:

- The garden around the Puser Saab Temple has been planted with plants for the ceremonies. From this the Temple and religious leaders could get the flowers for free, and communities could buy them at a much lower price. Previously the flowers needed to be shipped from mainland Bali. It cost IDR 2,000 – IDR 2,500 per piece when it was 'imported' and only IDR 1,000 per piece when it was produced locally.

5.2 Increase of Income. Examples:

- Kalimajari Project. Customary Village of Semaya and Lembongan Village could earn revenue of IDR 3-5 million from selling seaweed seeds to farmers. Elders who can no longer work in the tourism industry could earn IDR 50,000-80,000 per day from working on tying up the seaweed into a bundle.
- Wisanggeni Project in Puser Saab Temple. The Temple used to get their revenue from punia (donation) only during the ceremony and event, or from selling souvenirs like bracelets, necklace. Thanks to the project, the Temple can now earn additional revenue from selling vegetables and flowers for ceremonies.

5.3 Job creation and business opportunities.
Examples:

- Kalimajari Project in Semaya Customary Village and Lembongan Village. In the past, farmers had to carry out all the work in seaweed farming. Nowadays, they could hire laborers for some or most of the work so that the owners could do other more productive things. On the other hand, it creates jobs for others. This model is economically viable for farmers with 300 ris (seaweed lines) or more.

5.4 Resource conservation and reduction of pressure on the environment. Example:

- Renewable energy project of I Ni Timpal Kopi. The projects reduce the emission of methane (of the green-house gases) and the energy reduces demand for firewood and kerosene. Solar panel reduces the consumption of fossil fuels for power generation at Rumah Belajar at Bukit Keker managed by Taksu Tridatu.

5.5 Seedling for Local Plants. Examples:

- KTC Alam Mesari, Wisanggeni and IDEP Projects. The seedling to conserve and preserve biodiversities and to meet local needs of local plants needed for various purposes: dyeing clothes, herbs and medicines, and for religious ceremonies.

5.6 Products and Businesses Diversification.
Examples:

- Kalimajari Projet in Semaya Customary Village and Lembongan Village. Women (members of Kelompok Wanita Tani, KWT or Female Farmers Group) produced crackers made off seaweed. They produce based on orders. Unfortunately no clear record of the amount/volume of the production. No other product has been produced yet.

The reduction in expenses, and to some extent, increase in income allows community members to spend their money for education, health, etc. The time saved also allows women to engage in public and social activities. However, since there is no baseline data collected it is difficult to compare with after intervention.

Integrated Waste Management Site in Banjar Nyuh Kukuh, the first one in Penida Island

Positive Changes in the Economic and Social Condition since the Project was Initiated

Mainstreaming of environmental issues. Especially at the PPLH Bali Project (Integrated Waste Treatment/Management Center), the waste issue had stirred conversation on the environment. The establishment of the waste volunteer groups raise awareness of people. The port authorities start to clean their neighborhood, and schools built their waste bank. The Center had become a model for learning for other villages in Nusa Penida Sub District. The District government has mandated each village to have their waste treatment/ management facilities.

Alternative Seeds for Seaweed Farmers. Seaweed farmers are very vulnerable to changes in of climate, weather , temperature, pests, current, etc. Kalimajari Project had identified one strain of seaweed that seems to be best farmed in Lembongan Island, the red sacul strain. Farmers are using this strain mostly.

Eco-friendly pest management. Monkeys are often considered as pests for certain crops. They attacked farms and residences of farmers in some villages, including harassing people observing religious activities at the temples. However, the beliefs of local communities do not allow them to kill the monkeys. It is thought that the behaviors of the monkeys are caused by a lack of food in the forest. Wisanggeni introduced planting of fruit trees in the forest to prevent monkeys from attacking the villages.

Improved understanding of alternative tourism. Common tourism practice in Nusa Penida is massive tourism. Where tourists were brought in by big boats, living in the hotels, enjoying nature, diving, snorkeling and others. Kalimajari and JED introduced alternative model of tourism. They introduced tourists to be more engaged and participated in the daily life of people: in seaweed farming, post-harvest treatment of seaweed, weaving of clothes, observing waste treatment, enjoying local food using local ingredients, etc.

6. Women and Customary Communities Empowerment

Some of the activities are closer to women. The activities undertaken under the project design are related to the management and conservation of natural resources. That said, the activities are also closely related to food (from marine and terrestrial sources) security, availability of clean water, improvement of family income which are the interest of all members of society, regardless of their gender. This project introduced the spirit that management of ecosystem and natural resources are of the interest of the entire households. Male and female share equal responsibilities, and therefore equal participation of women and men becomes one of the important indicators to the success of partners.

Balinese women are busy with a domestic chorus, prepare for offering (for religious purposes) that takes place daily (at home) and some less frequent but regular events in temples, participate in customary communities' social events (wedding, funeral, etc), and taking care of the garden, livestock, etc.

Women are also actively involved in activities dedicated to women such as training on natural dye at KTC ALam Mesar project, and other activities in the preservation of local food, replanting of local vegetations, etc.

For activities on waste treatment and management, temples related activities, renewable energy mostly men participate. On cow profit-sharing program or kadasan the agreement and engagement were done with a couple (husband and wife).

Seaweed farming starts to bloom again in Penida Island since the seed was supplied from Lembongan Island

Role of Customary Communities

All communities in Bali, and Nusa Penida is included, basically are customary communities, practicing Hinduism. They live based on Tri Hita Karana, as stated in Box 1 above, Tri Hita Karana teaches people to live in harmony with God, nature and human. Tri Hita Karana is reflected in social institutions, social structure, culture, arts and behaviors of people. However, the customs are not necessarily exactly the same across Bali. Each area has their own uniqueness and creates varieties of customs.

Like in other places in Bali, every community has "two rulers", formal official village government and customary leaders. Customary leaders share important power and decision-making. Any activities approved by them will become communities' agendas and be implemented by members of the communities.

Participation of Youth and Elders

Youths participation are well recognized. Most youth in the island work in the tourism industry in the island or mainland Bali. The Covid 19 pandemic put the tourism to ceased. They lost their jobs. IDEP and JED project helped them reignite different tourism (Eco-tourism) and it started to kick off.

Other notable participation. Other partners target youth in their program, such as:

- Kalimajari Project in Lembongan Village and Semaya Village, youth were trained to be tourist guides in seaweed tourism. The youths are also participated in the seaweed farming. Prior to Covid 19 pandemic, no youth were interested in farming activities. The decline of the tourism industry made them be willing to take part in seaweed farming.

- PPLH Project in Semaya Village and Ped Village, children (elementary, junior high, and high school) are involved in environmental education and encouraged to be part of the waste volunteers.

- JED Project in Suana Village (Nyuh Customary Community: Learning House Bukit Keker), Suana Village (Semaya Customary Community), Batukandik Village (Dinas Batukandik II Customary Community), Batumadeg Village (Mujaning Temeling Customary Community) and Tanglad Village (Tanglad Customary Community) youth were trained to become ecotourism guides.

- Wisanggeni Foundationproject in Puser Saab Temple and Puncak Mundi Temple, youth were among of the community members participated in the replanting of the land around the temples. On the weekend children were also involved in helping the preparation of the seeds into polybag.

Engaging youth is not easy in Nusa Penida. Prior to Covid 19 pandemic they were too busy to make money from the tourism industry in mainland Bali and Nusa Penida. The pandemic forced them to go back to the Island with no jobs. Some of the youth who actively participated in the project are those who lost their tourism jobs.

Participation of Elders. There is no dedicated project activities nor strategy to engage elders. Only some female elders are engaged in KTC Alam Mesari project (on weaving). They were also asked for informing the history and customs inherited by the communities.

The teenagers take datas and educate community about the waste bank at Banjar Nyuh Kukuh

7. Additional Benefits

There are quite a number of additional benefits enjoyed by the communities from these projects. Among others are:

- **Improved knowledge, insight, and skills.** All activities of the project involved meetings dissemination of information and some part of education that helped communities (men or women, old or young, individual or groups) to gain new insight, knowledge and skills.

- **Intergenerational transfer of knowledge.** The youth involved in the projects learned about the history of the villages from the elders. The project opened up rooms for communication, conversation and discussion. The subject of the conversation includes among others history of the temples, the caves, the springs,and other unique landscapes. JED project on guiding for Eco-tourism required them to learn those from the elders, so that they became conversant about their environment. Many learned the history of their place for the first time in and through this project. These stories and histories need to be documented in addition to books, maps, leaflets, modules, etc. Such documentation will help ensure the knowledge is preserved, transferred and help promote the environment and its history.

- **The project as an education platform for community embers.** A new initiative introduced by the projects attracts attention of community members. Some are encouraged to join the activities, some others learn and replicate them on their own. As more people saw the benefits, there are many others following to replicate the project activities such as planting trees, using liquid organic fertilizers, etc. This will encourage adoption of the conservative behaviors in the communities.

  Some Project activities also involved schools. Among others the waste program was conducted by PPLH Bali. Some schools built wast bank. PPLH Bali also helped establishing IDOLA family to be trained in managing domestic waste (sorting and waste separation).

- **Strengthen social capital and network.** GEF SGP Phase-6 projects encouraged partners to communicate with communities, village government (official and customary) and other stakeholders. The project also facilitated various meetings which open rooms for dialog within and among the members of communities. The activities such as: FGD, meetings, consensus building, training, etc. have helped improve social cohesion, have allowed communities to interact with external, and have built communities' capacity in weaving, natural coloring, agriculture, waste treatment, Eco-tourism, etc.

- **The Projects help farmers to accumulate capital.** I Ni Timpal Kopi Project and Taksu Tridatu Project introduced kadasan or profit-sharing for in keeping livestock (cow). Farmers willing to take part in this program will be given one female cow, and when the cow delivered a calf, the calf or juvenile cow is handed back to the Partner or to other another assigned farmer. There is a mechanism on how many calf (calves) need to be handed back and how many they could keep.

- **The Projects introduced innovation and modification.** Some innovation are replicable by communities: making liquid fertilizers, fermented cattle feed. Some others are hard to replicate because of the technology needed and investment needed: biogas, solar panel, etc.

8. Lesson Learned

Good Practices in Community Management/ Governance

Good practices identified in the projects are as the following:

- **The project activities are based on the real needs of the communities and the environment.** It is important that mapping and consultation with communities were done properly at the beginning of the project. Although some of Host considered that communities thoughts need to be given a grain of salt. Communities often are convinced that what they know, what they have done are the best. Some are reluctant to innovate. They tend to get stuck in the routine. Understandably as innovation means risk, and often communities are too poor to afford any risk. They only willing to change if they see the innovation works.

  For example Wisnu Foundation has pushed back communities when introduced cotton to communities. The members of the communities are traumatized with the bad experience of planting cotton, and they were successful the price went down due to lack of market. This situation needed a soft and careful way to address. Among others by creating a model or demonstration plot. In Wakatobi, for example, a lady allowed her land to be used for planting cotton just to show results to farmers. If the land issue is solved, and interest is increasing, one question remains, will they have time to manage cotton farming on top of many things the farmers in Tanglad Village do?

- **The project facilitated the collaboration of many parties.** The activities undertaken by partners required meetings and discussions with many parties (government, temple and religious leaders, customary leaders, schools, farmers, women, youth, etc). The agreement to work on the project showed how much the collaboration they have built.

9. GEF SGP Support

Host and Partners are in union regarding the support they got from GEF SGP Secretariat. They are:

- **Funding and project management.** In addition to fund, the GEF SGP provided technical support such as capacity building on understanding the issues better, planning and proposal development, documentation of process and progress, writing, report development, etc. GEF SGP approach is considered to be flexible and allows the partners to grow.

- **Monitoring and evaluation.** The monitoring and evaluation help the partners to stay on track and redirect the project to reach the goals and outcomes.

- **Information and knowledge sharing.** GEF SGP Secretariat and Teras Mitra (an organization formed by the Secretariat of GEF SGP) have provided a platform for learning, sharing information and contacts of resource persons/ institutions to partners andHosts. This support was very helpful especially during Covid-19 restriction period.

10. Factor for Success

Partners views on the factors for success are varied. However there are some general factors shared amongst them. They are:

- **Support and partnership of stakeholders in the villages/communities.** Every activity in Nusa Penida was started with a consultation with various stakeholders. The consultation was done by Partners andHost.Not every proposed activity was accepted by communities. For example, communities had denied the idea of planting local cotton in Tanglad, PPLH Bali's proposal for building integrated waste management/ treatment center, andWisanggeni to plant land around temples with needed vegetations. Some of them had prior engagement and spent time to win the heart of communities, yet they disapproved of the ideas. (For Wisanggeni case their vegetation was demolished by the Temple's management)

- **Collaboration with others from outside communities.** External resources were brought in when needed. For examples, Agency for Brawkish Water Fishery Research or (Balai Perikanan Budidaya Air Payau, BPBAP) of Takalar was brought into Kalimajari Project to

test out the new seed/strain of seaweed. LAWE Association was also brought in to support KTC Alam Mesari in introducing natural dyeing and innovation on production.

- **Understanding of local dynamics and political landscape.** This is another important factor because it is human nature to have differences and conflicts. Not everything went harmoniously. For example competition of weaving groups in one village could have jeopardized the project. Internal conflicts amongst members of Temple management also affect the pace and progress of the project, a plantation was altered by one of the disagreeing members of the Temple management. PPLH Bali faced challenges in getting an agreement for the building of waste management/treatment center, despite they had explained the benefits many times.

11. Recommendation

Maintaining what had been achieved, continuing and replicating the successes. Host's and Partners' effort in maintaining the accomplishment is by establishing a consortium called Ecologic Nusa Penida. This consortium is to maintain the momentum and accomplishment post the project. Bukit Keker Learning House (managed by Taksu Tridatu) is the place for coordination of the consortium. Tujuannya untuk setidaknya selama beberapa waktu ke depan masih dapat terus mengawal kegiatan yang sudah dilaksanakan di Nusa Penida. Ruang temunya di Rumah Belajar Bukit Keker yang dikelola Taksu Tridatu, as this place has the best facilities and all the GEF SGP Phase-6 project files. Two years of the project duration is good beginning.

Connecting with policy, program and budget of the village government. Thus far, partners have not attempted this. If this could be done the opportunity of having support for the sustainability of the project and continuation is great. One imminent potential is the budget for waste treatment.

Maintain and expand collaboration and network. Community groups seem to still face challenges to connect and develop networks with external parties.Host and Partners are expected to continue bridging the communication, so that communities could learn new skills, technology, and values.

12. Conclusion on Governance and Management

- **Limited areas.** There is no marine landscape management in Nusa Penida. There are several projects on the terrestrial landscape. The projects in Nusa Penida for terrestrial Ecosystems include: mix crops garden around temples, building waste treatment/ management, seeding farm, and biogas. The áreas for the Project are limited, and small. Nothing at the size of hundreds of hectares or larger.

- **Consensus building at village level or community only**. In Nusa Penida Island the meetings to reach consensus involved village government, customary communities, temple managements, landowners, women, schools and others. This means that the agreements are limited at the village level only. The project has no effect at higher (district, province and national) level policy.

- **Surveillance Team is only from community members.** Activities at terrestrial areas in Nusa Penida cover small areas. Temple management and landowners took care of and manage the plantations.

- **No significant policy at district/province/national The agreements resulted from the projects are for village level only.** No legal change, no new regulations were produced out of the project. No recommendation of the projects to National Action Plan and Strategy on Biodiversity (NSAB), and communities were not involved in the design, implementation or revision of the NSAB.

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SEMAU ISLAND
NUSA TENGGARA TIMUR PROVINCE

Gewang Tree in Semau Island

1. The Landscape of Semau Island

Stretched into 296.42 square kilometers, this island is constitutes 5.59% of the total area of Kupang District. The island is administered by two sub-district governments: Sub-district Government Semau, and Sub-district Government South Semau. The island has 14 villages, and 64 sub-villages (BPS, 2017).
In the program management context, the Island has started the COMDEKS program which includes a few SGP focuses: biodiversity, climate change, energy, renewable energy and land degradation that could be modeled by others.

Semau Island represents an isolated small island ecosystem with high vulnerability to climate change impact. The island is exposed to extreme weather, a limited supply of freshwater, and very thin topsoil on top of karst rock that forms the island. Bordering with the Savu Sea at the south, east and west and with Semau Strait in the north, the island is at the international crossing lane of sea transportation. At the south of the island there is Rote Island (District of Rote Ndao), with Pukuafu Strait in between of them. Semau Island is acceptable by 30-45 boat trips and 18 minutes with ferry ship from Tenau Port of Kupang City in the mainland.

Based on the initial consultation with communities, the biggest challenges faced by communities are: limited freshwater, limited knowledge and innovation on agriculture and marine farming, increased use of chemical farming (pesticides, chemical fertilizers, etc.), and deforestation. GEF SGP decided to continue the COMDEKS program as it brings immediate impact although

still at limited scope. This project emphasized the collaboration of various stakeholders, especially local government, and other stakeholders such as landowners and churches.

Semau Island is a low land island with the highest altitude of 50 meters above sea level, mostly consist of limestone and reef rock with thin top soil. The soil is formed by Mediterranean, latosol, alluvial soil. It has base saturation and contains kaolinite clay mineral. This kind of soil has limited ability to absorb and retain mineral and nutrients needed by vegetations (Sutedjo: 2009). The Savu Sea around the island has a rich coral reef with high biodiversity. Savu Sea is also critical habitat as it become a migratory lane for 18 sea mammals (including two rare species of whale, sperm whale and blue whale), and is important habitat for dolphin, turtle, dugong, and manta (YPPL dan TNC, 2011). The reef ecosystem is concentrated in around Semau Iland, Kera Island and western Kupang Bay. Sand bottom stretched out around the bay from Sulamu to Pasir Panjang, and seagrass is stretched out in many places like the coral reef (Lauwoie, 2010).

On the terrestrial ecosystem, the island is like the rest of East Nusa Tenggara, the dry and brown during the dry season, and green during rainy season. Key vegetations for people of Semau Island are cabbage palm (gebang sawit in local language, corypha utan in scientific name), Asian Palmyra Palm (lontar in local language, or borrasus flabelliefer in scientific name), beuk¸banyan, and kapok (ceiba petandra in scientific name). Those trees are essentials for construction of boats, houses, and source of food. Some others are used for herbal medicine. Unfortunately, the people of Semau have no habit of replanting trees, and this leads to decline of trees population on the island.

Productive activities on the island are affected heavily by the season and weather pattern, as mainly is from agriculture to support the food security of the population. Most Semau inhabitants own land, and those who don't usually are migrating residents from outside of the island. They could rent or buy properties and farmlands from landowners. Most Semau waters are part of the Marine Nature Reserve managed by the Ministry of Environment and Forestry, and at the south and south east coast is part of Savu Sea Marine National Park managed by Ministry of Marine Affairs and Fishery. Ministry of Agriculture should be more influential (along with the District Government of Kupang) as most people in Semau are farmers (crop planting, livestock ranching, seaweed farming) and few are part-time fishers (formal data indicated no one work full time as fishers).

The total population of Semau Island in 2016 was 12.516, of which 6.437 male and 6.079 female (BPS, 2017). The population density was 43 people/ square km.

2. Institutions involved in the Semau Island Project

The project in Semau Island involved 9 organizations serving asHost (1 organization, Perkumpulan Pikul) and the other 8 are partners. Please see table S1 below.

Table S1: Partners' and Host's Organization Office Location for Semau Island Project

No	Institutions	Office Location (Island)
1	PIKUL Association (Host/Koordinator)	Kupang, Timor Island
2	Geng Motor Imut	Kupang, Timor Island
3	Dalen Mesa	Semau Island
4	Kupang Batanam Association	Kupang, Timor Island
5	CIS Timor	Kupang, Timor Island
6	Cemara	Kupang, Timor Island
7	OCD Beach and Café	Kupang, Timor Island
8	Alpha Omega (YAO)	Kupang, Timor Island
9	Tafena Tabua	Kupang, Timor Island

Host/Coordinator and 7 other partners are in Timor Island, only Dalen Mesa resides in Semau Island. Due to the limited phone coverage on the island, the communication with partners in the island was challenging. Fortunately most of them are in mainland (Timor Island) although they spent significant time in project location. The Covid 19 has added more challenge for partners and communities could not communicate and meet.

Table S2: Funding, Project Duration, and Activities of the Project in Semau Island

No	Institutions	GEF SGP contribu-tion (USD)*	Co financing	In kind contribution**	Project duration (month) ***	Activities
1	PIKUL (Host/ Coordinator)	-		50,722	24	
2	Geng Motor Imut	35,000		35,499	18	• Eco friendly farming. • Forest conservation (Agrosilvopasture). • Bee farming. • Biomass stove development.
3	Dalen Mesa	10,000		10,465	12	• Production of Bokashi (organic fertilizer) and chopper • Planting of sorghum and production of sorghum flour, and development/ construction of the machines needed.

No	Institutions	GEF SGP contribu-tion (USD)*	Co financing	In kind contribution**	Project duration (month)***	Activities
4	Kupang Batanam	20,000		27,851	12	• Family garden (with food crops) in every households managed by community groups in every village • Utilization of domestic waste for source of water and fertilizers • Local seeds production for black rice and yellow corn.
5	CIS Timor	35,000		35,010	18	• Construction of wáter trap and water immersion ditch. • Construction and rehabilitation of piping system • Construction of water protection house • Spring protection and replanting trees around the springs.
6	Cemara	25,000		26,128	8	• Construction ofSolar Water Pumping System (SWPS). • Construction and rehabilitation of piping system
7	OCD Beach and Café	35,000		30,076	9	• Protection of coast with installation of bioreeftech at Uiasa Beach • Eco tourism management by youth • Utilization of old terminal building for base camp and strorage of tents for visitors (tourists) • English training for youth and community members
8	Alpha Omega (YAO)	30,000		30,385	24	• Ecotourism at Uihaenana Beach and Uinian Beach. • Plant identification at Uiade Forest and coral reefs at Onanbalu Beach • Construction of biomass stove.
9	Tafena Tabua	35,000		35,263	15	• Establishment of Multistakeholders Forum consisting representative from villages involved in the Projects
	Total	**275,000**		**281,399**		

Source: Compiled from a database of GEF SGP Phase-6 Secretariat.

**Currency Rate assumption 1 USD = Rp 14.000.*
***For "In-kind contribution" is not populated because Partners and communities are not used to calculate it. In reality, there are numerous contribution from communities: supplies, time, transportation to the meetings, space/venues for various activities in the projects.*
****Project duration is counted in total, all Partners and Host requested a no-cost extension due to Covid.*

The projects in Semau Island varied in their activities. In general they are categorized into: (1) Forest conservation using Agro-silvopasture approach. The forest here is not dense hardwood tropical forest, but more of a shrubby forest with some occasional fruit trees. (2) Improvement of local sorghum production; (3) Family garden, domestic waste treatment, and local seeding; (4) Spring protection and piping system construction; (5) Water lifting using Solar Water Pumping System (SWPS); (6) Eco-tourism ; (7) Establishment of Multi-stakeholders Forum in the community.

3. Landscape Governance in Semau Island Project

There were two partners working on marine landscape, and both are related to Eco-tourism.

Four partners worked on the terrestrial landscape. They had four different programs: Agro-silvopasture, utilization of customary forest for conservation purposes, utilization of “water master” well for communities, conservation around springs.

Both projects in the marine landscape and terrestrial landscape reached written and verbal agreement various stakeholders in the villages: village government, customary institutions (Kaka Ama), landowners, springs/wells owners, farmers, leader and management of Water Governance Forum, and other members of the communities. The team established is to implement the agreements, usually youth groups managing Eco-tourism, team for planting trees, constructing a pond, immersion wells and ditches, etc.

Table S3: Governance and Management of Marine Landscape Project in Semau Island

Partner	Activities	Processes	Team
OCD	Putting marking for village boundaries where bioreftek (artificial reef media for coral replantation) is placed at Uiasa Beach. Total Bioreftek was 60 spread in 1 kilometer Buoy marking was establish to help enforcement and protection of the bioreeft-ek.	This is to develop community based tourism in coast and beach of Uiasa. In 1980 Uiasa was one of the tourism destination, mainly visited by Australian tourists. There were direct flights from Australia to Kupang. The situation changed when there was economic creises in 1997, turmoil and separation of East Timor in 1999, Bali Bombing in 2002. As the flights stopped, the tourism diminished and Uiasa abandoned again. Most facilities were broken apart, and only the terminal remained more or less intact. The terminal is used by OCD and communities to start ecotourism in Uiasa Beach. Some fishers in Uiasa still practiced blasting bombing. The continuous activities in the beach might prevent perpretators in conducting the blasting.	A team for ecotourism (Pokdarwis, or Team for Tourism Awareness) was established, but it did not have any traction. OCD established another group of youth to managed the basecamp and women to cook local food.
YAO	Agreement to develop Onanbalu in Bokunusan to become tourism destination.	Agreement to stop blasting fishing. The agreement was reached in Imanuel Churh, Onanbalu, at Bokunusan Village, attended by Village Secretary, other village government leaders, Pokdarwis, the pastor/priests, and community members. The agreement had some specific details pertaining the blasting fishings in Onanbalu.	Pokdarwiss was established in Bonukusan Village and Uiboa Village.

Tabel S4: Terrestrial Governance/Management

Partner	Agreement	Process	Team
GMI	To protect terrestrial landscape, agrosilvipasture was introduced. Hardwood fruit trees and those useful for livestock feed would be planted. Only the adaptive to the local conditions will be selected. The Project covered five villages. The agreement with communities to spare one quarter of their land for conservation. In aggregate lands provided by communities were 22,965 hectares, consist ofi: (a)7,53 ha at Uitiuhtuan Village (by 12members of community); (b) 2,83 ha at Uitiuhana Village (by 13 mmebers of community); (c) 2.125 ha at Batuinan Village (by 12members of community); (d) 6 ha at Huilelot Village (by 19 members of community); (e) 2,20 ha from Hansisi Village (by 12 members of community).	Numerous meetings led to written agreement signed by 66 head of the households, land owners who allowed their lands to be used for conservation project, community leaders and village government. The consensus was to let one quarter of the lands for conservation. The written agreement benefits: (a) bonding agreement with land owners to plant tres and to take are of them. (b) To plant endemic vegetaions and livestock feed, and to harvest only the non timber products (honey, fruit, livestock feed). (c) not harvesting timber product, unless there is very strong reason	There were 66 families involved in this project. The benefits of this project is to conserve the forest, to maintain water quality and supply. This activity is also to ensure availability of the feed for livestock The following plan was to integrate and to improeve the efficiency of livestock ranching, fishery, bee farming.
YAO	Agreement on the utilization of customary forest in Uiade Village, Uiamlasi Sub Village; Uiboa Village as conservation areas, ecotourism, and bee farming.	Parties involved in the meetings to develop agreement were most of the villagers, village government, Pokdarwis, and landowners. The agreement was signed at Village Hall of Uiamlasi. Waktu itu mereka bersepakat di Balai Dusun Uiamlasi. The agreement is stipulated in the meetings note and plan. The land is not meant for sale for the benefit of land owners, but rather to bse used for community assets and to the best benefits of the communities, especially on its environmental benefits.	10 members of community (youth) was involved in the identification process. Establishment of POKDARWIS.

Partner	Agreement	Process	Team
Cemara	Written agreement was reached on the utilization of wells. The wells owners agreed to let Batunian community enjoy the benefits from the wells. Batuinan. Agreements included: (a) Statement from well owners and their children on consent to communities to co-utilize the wells. (b) Statement from community members of Uideteas water co-utulizers; (c) Minutes of meetings on the co utilization of wells in Uidete Village; (d)Minutes of meeting that involved village government, Cemara and wells owners. Agreements included: wells remain belong to the owner, the water is co-utilized at unlimited time, and the equipments are from and belong to the community, and community members will help planting and taking care the trees.	Beneficiaries of the wells are 36 households or 135 people (58 males, and 77 female).	Group for water co utilizers was established at every sub village (Sub Village I and Sub Village II). The group assigned a team of 10 members to monitor the water use either from the well or from collecting points, the people assigned are 6 men and 4 women. Collecting points have water reservoir that been maintained and recounstructed. The Team's responsibility: (a) manage utilization of the water (b), ensure water distribution, (c) monitor the solar powered water pumping system, andthe piping system, (d) organize water beneficiaries to protect the springs and to maintain water network system, and (e) lead the regular meetings.
Cemara	Cemaran and CIS Timore collaborated in conserving areas at Uidete, Uiutlui, Uimakas, Uioktoas and Uibalu	Around the wells with solar powered water pump systems were restored with plants and trees. At the same places, the immersion wells were also constructed to protect the spring and under ground water quality.	Trees were planted around the springs. Landowner took care the trees as thery will enjoy the fruits of the trees.
CIS Timor	Agreement on water catchment areas, and on utilization of fresh water in Kobalaian Timr Sub Village, Hansisi Village	This agreement is new to commununities of Hansisi Village. Parties instrumental in the agreement are village government, customary leaders, communities, and Chair of Water Governance Forum. The agreement was enforceable because it was endorsed by village government and was included in the village development planning.	Communities take care, conserve and protect water catch-ment areas and planted trees there.
CIS Timor	Verbal agreement from landowners to provide lands for construction of small mandmade pond	CIS facilitated the meetings and provided limited technical assistance. This is mostly communities initiative.	Communities of Sub Village 3 proposed ideas of constructing ponds. The construction was voluntarily done by members of communities.
CIS Timor	Agreement in Batunian Village between government, spring owner, and community members such as that of Uibaktoas, Uimakas, Udete, Uitului, Uibalu. Agreement on water catchment area was reached verbally between land owners, water governance body, and community members.	The villages were selected because they are located in water catchment areas, and location of springs. Water is essential and therefore those areas needs protection. The project approach on conservation is by expanding water catchment areas, construction of immersion wells, immersion ditches. The area for water catchment area is around 8 hectares.	Communities and landowners constructed immersion wells and ditches and replanting trees.

Partner	Agreement	Process	Team
PIKUL	Reestablishing 15.7 hecatres of customary of forest as protedted forest	‘Pukun Lulin’ customary ceremony	
PIKUL	5 hectares of AKKM Uitlui,	‘Talas’ customary ceremony for setting boundaries	

Landscape and Seascape of Semau Island

4. Legal Change and Participation of Communities in Strategic Policy

All agreements reached in these projects are at the village level only. There was no agreement that was enacted into regulation, even at the village level (Perdes). Some partners mentioned in their proposal to aim for Perdes, but none had accomplished it till the end of the project period. They had attempted, but developing and having regulation enacted takes time and dedicated efforts beyond the ability of the project ability to provide.

However, there are a few influences of the project outcome to the village policy, among others:

- CIS Timor Project, some village governments were assisted by the project in achieving their developmental goal of providing water to communities. They also allocated a significant amount of funds for water projects, such as the village government of Batuinan (for rainwater harvest project) and Uiasa Village Government (on improvement of the piping system).

As the projects were at the village level, there was no impact on the district, provincial or national policy such as in the national strategy and action plan on biodiversity. .

There was no legal change at the district or higher level, but some proposed change to policy was suggested.In Tafena Tabua Project, for instanceMulti-stakeholders Forum (community of Semau) suggested to the Kupang District Government to change the fertilizers provided to farmers under Program for Increasing Productivity, Quality and Yield of Food Crops are changed from chemical into organic ones.This suggestion was accepted and now farmers accepted.

Most people in Semau Island have to go a long way to get the water

Table S5: Legal Change and Participation of Nusa Penida Island in Strategic District, Provincial, and National Policies

Partners	Legal change in national, district and local affected by communities' activities.	Impact or Input to National Policy (National Action Plan on Biodiversity)	National or Sub-National Policy Change Affected by the Project	Community Participation in Design, Implementation, or revision of the National Policy on Biodiversity)
Geng Motor Imut	Village/local agreement.	None	None	None
Dalen Mesa	Village/local agreement.	None	None	None
Kupang Batanam	Village/local agreement.	None	None	None
CIS Timor	Village/local agreement.	None	None	None
Cemara	Village/local agreement.	None	None	None
OCD Beach and Café	Village/local agreement.	None	None	None
Alpha Omega (YAO)	Village/local agreement.	None	None	None
Tafena Tabua	Village/local agreement.	None	None	None

5. Impacts of Projects on Social and Economic Conditions in Semau Island

Measured impacts and changes

The documents and reports indicated that there were no partners in Semau Island conducted a systematic assessment to measure the impact of the project on various aspects: households income, individual income, diversification of source of income, job creation, access to market, etc. There was no baseline and after intervention data. Therefore no statistical evidence of the project impacts could be presented.In addition, the impact of this kind of project usually takes long time to happen. It is still too early to see the expected impacts and changes. Host and Partners may need to conduct annual monitoring visits to report the impact in the future. That said, several indications of changes could be presented as the following:

5.1 Reducing family expenses. Examples:

- Dalen Mesa Project. Prior to the project farmers spent significant amount of their income on chemical fertilizers and pesticides. The project helped farmers in Uitiuhana Village to produce their own organic fertilizers and pest repellent. It cut their expenses and allowed five farmers groups in 3 sub-villages to replant sorghum in Semau Island

- Dalen Mesa Project. The vegetable was a commodity that absorbed farmers' expenses on food the most. After the project introduced vegetables gardening farmers could save IDR 10,000-20,000 daily. The expenses for vegetable could be diverted for buying other components of food, or something else.
- Cemara Project. Piping of water helped communities cut their expenses on water. Previously they had to buy water from a water tank at the cost IDR 200.000 –250.000/tank. The more remote the houses the more costly the water.

- CIS Timor Project. The piping system introduced to communities saved communities' expenses on water. Previously they had to pay IDR 225.000 per month for water. As dry season takes place in months the expenses are significant. The water piping system reduced the expenses.

- GMI Project. Expenses for fertilizers and livestock feed was cut as farmers are trained to make them by themselves. The expenses on fertilizers could be cut up to 50% (prior to the project farmers spent IDR 500.000 for a cycle of planting). Although farmers have completely switched to organic fertilizers, they still had to buy ingredients for making organic fertilizers such as EM4, liquid sugar, etc. This costs 50% less than if they use chemical fertilizers.

- Kupang Batanam Project.'Mama-mama' or ladies in local language could save their expenses on vegetables as they could harvest from their own garden. The cost of vegetables is IDR 10.000 – 30.000/day, or equal to IDR 300.000 – 900.000/month.

5.2 Increasing Income. Examples:

- Dalen Mesa Project. From sorghum farming introduced by this project each of farmer's household earned additional IDR 500,000 per month or around IDR 5,500,000 per year. This is from the harvest of sorghum (50 – 350 kilograms per farmer, or around 1 ton per group). The price of sorghum is IDR 5,500 per kg of dry raw sorghum, IDR 12,000 per kg of dried and crushed at rice size, IDR 15,000 per kg of sorghum flour, and IDR 17,000 per kg of finer flour.

- Dalen Mesa Project. Training on organic farming (including the making of organic fertilizers) had enable community members to plant vegetables in their gardens. Farmers ern additional income of IDR 50,000 per day on average and could be as high as IDR 200,000 per day from selling excess vegetable (after they consume for daily food). 75% of assisted farmers planted vegetable and enjoyed the additional income. This achievement made the group proud of themselves.

- YAO Project. Entrance fees to Uiamlasi Beach had allowed the group (Pokdarwis) to enjoy

additional income. Individuals and Credit Union Mart Alfa Omega enjoyed additional income from selling food, and honey.

- Kupang Batanam Project. There was a ‘mama-mama’ (woman from the community) who earned IDR 800.000/month from selling vegetables.

Vegetable harvest on yard garden

5. 3 Creating Job. Examples:

- Dalen Mesa Project. The dry season is tough for farmers, the wealthier landowners would be allowed the less fortunate farmers to cultivate their lands with the agreement: landowners shoulder non labor cost of production, the workers will provide their labor.20-30% of the plants would be given back to landowners as payment for land rent, and the yield from the remaining plants will be divided equally between workers and landowners. During the dry season farmers planted garlic.

- Dalen Mesa Project. Sorghum farming opened up job opportunities in farming and processing. New jobs were created for 4 women working in Semau Muda Community, 95 in farming, and 3 operators of flour mills.

- YAO Project, ecotourism introduced by the Project had opened up business opportunities. Communities have opened stalls for refreshment (in two sub-villages) and guest houses (in Uiamlasi Sub-village). Other members of community showed their interest in guiding the tourists.

- OCD Beach dan Café Project in Uiasa Village, new skills on cooking new food allowed the women in the communities to prepare and sell food for tourists, and to develop interests and appetite for local food such as sorghum.

- GMI Project. The project opened up business opportunities for Village Government Owned Enterprise to produce liquid organic fertilizer (bokashi) and in producing biomass stove. A member of the community Manas Bisilisin of Uitiuhtuan Village sold organic liquid fertilizer at the price of IDR 100,000 per 5 liters.

- Kupang Batanam Project, home garden for vegetables was meant to support family needs of vegetables. But it turned out there were surpluses that went to market, at least 3-5 members of communities sell their vegetables to market.

Harvest of sorghum at Uitiuhana Village

5.4 Reducing pressure to the environment.
Example:

- Dalen Mesa Project, abandoned land of around 2 hectares are cultivated for sorghum. This inspires others farmers in Uitiuhana Village to also cultivate and attend their abandoned lands.

- Dalen Mesa Project. The project introduced organic farming and the use of organic fertilizers. The successes of this new method inspired people to shift to using organic fertilizer, especially after they suffered loss of around 50% from the use of chemical fertilizer. Currently farmers are making their own organic fertilizer.
- Cemara Project. Prior to the project farmer had to spend around IDR 1,000,000 for fueling the diesel water pump in five months (August to December). They operated a diesel water pump twice a week.

- CIS Timor Project. Direct benefit to environment: (a) immersion wells and ditches at agreed locations; (b) rain harvest and rainwater storage in the pond to improve underground water,; (c) sustainability of springs in the villages.

- GMI Project. Honey is one of the important commodities. Communities used to cut or burn the trees for collecting honey. Now they farm bees in beehives and it reduced pressure on trees and plantations.There were 42 bee farmers from 3 villages (Uitiuhana Village 12 farmers, Batuinan Village 19 farmers, and Huilelot Village 11 farmers). The villages were selected because of their potential.

- GMI Project. The project introduced biomass stove which replaced conventional stove fueled by firewood and kerosene. The project helped distributed 25 stoves for 25 households in 5 villages. Each village was also given a design template for the construction the stove. The biomass stove F-13 had reduced the firewood consumption from 15 bundles (average weight is 8-10 kg per bundle) to only 7-8 bundles monthly, hence 50% saving.

- GMI Project. The project introduced organic fertilizers and it brought benefits to farmers. The garlic is the bigger and higher yield per area. Farmers also could keep the garlic longer. Using chemical fertilizer, farmers could lost up to 70% after three months of keeping, organic fertilizer pushed the loss to only 30%.42 farmers have adopted this method and enjoyed the benefits.

- GMI Project, beehive farming allowed farmer to reduce pressure to forests, and encouraged the farmers to plant wild tamarind or lamtoro gung in local name or leucaena leucocephala in the scientific name, which is useful in improving water-catchment areas.

- Kupang Batanam Project, home gardening using organic fertilizer and organic pest repellent allowed households to expand the size of the garden and help absorb more carbon-dioxide (0.19 -- 2.4 kg/day/households with garden areas of 0.01-0.08 ha/households).

5.5 Improving local seeds availability. Example:

- Dalen Mesa Project. Farmers in Semau Island were introduced to plant sorghum in a training organized by the District Office of Agriculture. They plantedthe seed given by the government but it was failed due to pests. Under GEF SGP Project, Pikul gave them sorghum seeds, and farmers at Uitiuhtuan Village planted them. Unfortunately, it was also attacked by pests and yielded in nothing. In 2019 farmers tried locally procured sorghum. Five groups of farmers planted 30 kg of seed which resulted in 230 kg of sorghum. In 2020 the yield was 4,300 kg and the result was enjoyed by the village and other neighboring villages (Akle Village).

- Kupang Batanam Project. This project introduced local seeds of black rice and yellow corn. One farmer in each of the villages was given 3 kg of rice seed, and another was given a kilo of corn seed. The seeds have to be planted in a demonstration plot of 20m x 40m. After harvest, the assigned farmers will return twice the amount of rice/and corn she/he received. They have to select the best quality so that the grains are ready for being converted into seeds. The seeds from the harvest recirculated to different farmers in each of the villages. This revolving model allowed the accumulation and growth of local seeds of corn and rice. Women group and KuBat decide the recipient of the seeds. The local seed is produce unique ingredients for traditional food needed in the customary ceremony, such as black rice for sweet pancake used in masuk minta nona ceremony, and the corn is used in lingae dancing as a gratitude celebration after harvest.

5.6 Ensuring supplies of vegetables. Example:

- Kupang Batanam Project. Women at the target villages are trained to farm in their yard, mainly for farming vegetables. The average land needed for an organic vegetable garden is 100 square meters, near their houses so that the women could attend it without having to leave home. The harvests are for their own consumption and the excess is sold to market. Some women actively sold the vegetable to neighbors and people from neighboring villages, others were less active and some are totally passive and only sell when there were buyers coming to them.

5.7 Diversifying source of income. Example:

- Kupang Batanam Project. Organic farming, in addition to providing food to the family, has become an alternative income generation activity for fishers, seaweed farmers, and cash crop farmers. There are also women selling liquid organic fertilizer at the price of IDR 5,000/600 ml.

5.8 Opening new Access to market and a new model of the market. Example:

- Dalen Mesa Project. The introduction of sorghum came with the challenge of marketing it. Compared to other commodities like rice or corn, sorghum is less demanded. Farmers could be discouraged to continue plant sorghum is the market did not respond toit positively. The project collaborated with Semau Muda (a youth organization working on marketing and supported by GEF SGP marketing wing, Teras Mitra) to help the marketing of sorghum. There are potentials for future market development for farmers in Uitiuhana Village who consistently plant sorghum.

5.9 Accessing water more easily. Example:

- Cemara Project.The project introduced solar powered water pumping system and piping which brought water closer to households in Batuinan Village. Thanks to the project travel time to access water was cut from 30 minutes to only 5 minutes. Reduction of time and efforts for accessing and bringing water home allowed communities to do other more productive things. The piping system connected the spring and the user at a distance of 750 meters and with water tanks with a capacity of 3,300 liters and 2,200 liters. The pumping used low carbon emission technology and was ecologically friendly.

- CIS Timor Project. At Desa Hansisi Village. Sub village Kobalain Timur, there were 64 households facing challenges in accessing water for more than 10 years. The government has attempted to help, and CIS Timor participated in the program by using Village Development Fund. CIS Timor initiated collaboration with others to work on piping system so that communities could improve their access to water, established regulations on water use, maintenance of the piping system and protection of springs and watershed.

- CIS Timor, at Hansisi Village. Time to access and to get water is cut significantly so that people could use the time more efficiently. They could do other more productive things in farming and seaweed farming. Cutting time is not only because the distance is closer but also because the number of people queuing for water is reduced.

5.10 Improving communities health system.
Example:

- Cemara Project. Improved access to water

automatically improved sanitation and therefore leads to a healthier lifestyle. The frequency of cleaning, bathing is increased. Expectedly it would reduce the occurrence of diseases related to body sanitation. .

- CIS Timor Project. Improved sanitation and toilet has encouraged communities to adopt a new, cleaner and healthier lifestyle. There series of activities ranging from campaigning on Stop Buang Air Besar Sembarang (BABS, or Stop defecating outside toilet) to domestic waste treatment.

- Kupang Batanam Project, consumption of locally and organically produced vegetable is healthier than other unknown vegetables and especially the GMO (Genetically Modified Organism).

5.11 Collaborating with others. Example:

- Cemara was invited by the government to propose budget for the maintenance of solar-powered water pump, and to develop a proposal their activities at Batuinan Village so that government could incorporate into the government development plan and budget. The government institution requested the budget and proposal are the Agency for Planning, Research and Development of the District or BP4D (Badan Perencanaan Pembangunan Penelitian dan Pengembangan Daerah), and Head of Kupang District.

- OCD Beach dan Café Project. Cooperation was established with: (a) Ministry of Marine Affairs and Fishery on Biorefftek, for patent and copyright issue. The support from the Ministry allowed the Host to secure a license to replicate the bioreeftek; (b) With Cendana University on the initial study of the reef in Uiasa coast.

- CIS Timor collaborated with the village government of Hansisi and Uiasa on water piping.

Positive change on social and economic condition since the project initiation.

Revitalized tradition on environmental conservation Cemara Project showed revitalized tradition of constructing immersion wells and ditches. Such tradition was eroded and nearly forgotten. This project brought that back. Every after Christmas (December 25) communities in two sub-villages together with landowners where the springs are located conducted ceremonies for replanting and managing the water catchment area. Water users agreed to conserve water during the dry season.

Community activities are changed. OCD Beach and Café project had helped communities to change adopt new behavior toward nature and the environment. Previously, communities do not care about the nature and environment. They littered, fished with explosive and destructive gears, etc. The project helped communities to leave those destructive behaviors behind.

A paradigm shift in water management. CIS Timor Project had changed attitude and behavior toward the water. They were less consumptive and more conservative in using water. Water is God gift and needs to be used wisely. This changing attitude facilitated program on water catchment area conservation (planting trees, constructing immersion wells and ditches, etc) and, as shown in Hansisi Village,developed the willingness of the community to pay for water service (IDR 20,000/ month) to ensure the sustainability of the water conservation and water service.

The land around houses are more utilized for improving food security. Kupang Batanam Project is example of how communities changed their land around houses for something important for their economy and food security. The lands are now used for a vegetable garden, seed garden, for making organic fertilizers, and many others. Women and other members of the families work on these activities. The lands have become more productive.

6. Empowerment of Women and Customary Communities in Semau Island Project

Empowerment of Women

Women role in the project was very dynamics, and several activities indicated their increased roles:

- Dalen Mesa Project. Women participation is considered high. In Uitiuhana there were women farmers groups participated in the project activities. The women there own the farmland. Women participation in the meetings are very high. They provided feedbacks and shared their thoughts. Women took leading role in engaging communities at large, especially in the processing and milling of sorghum, planting, etc. The women who participated in the project was 19.

- Dalen Mesa Project. After women saw the progress of other community members in processing and cooking sorghum, they requested similar training. They aspired to produce ready-to-eat sorghum-based food. Unfortunately this was hindered by Covid 19 pandemics and the fund (third trench which was not remitted in time).
- Cemara Project. Women participation in this project is fairly good, despite they had to juggle between domestic issues and other things. The attendance to the meeting was good. There were four women volunteered to distribute water in dispensing points.
- Cemara Project. The project designed meeting special for women. This was due to the tendency of women to stay quiet in a meeting attended by both genders. The separation of meetings was effective in ensuring women voices were heard.

- YAO Project. Similar to the previous point. Women initially thought that their role is at the back of the stage. The meeting, the discussion and the agenda were thought to be only for men. Yao designed meeting for women only so that they were heard and were able to provide their thoughts. Special approaches and individual meetings were also made to certain female members of the communities.

- CIS Timor Project. The women in the project had been actively engaged and participated in any volunteer works and meetings. Some even already feel comfortable sharing their thought in meeting with mixed gender.

- GMI Project. At the beginning of the project women participation was very low. Men were dominant in the planning and early implementation of the project. Women started to participate in training for making liquid organic fertilizer and livestock feed. Women attended meetings but rarely expressed their thought.

- Tafena Tabua Project. Multi-parties Forum was established where every partner sent their representative. Out of the 30 active members, 9 were women. They actively participated, expressed their thoughts, and engaged in thematic conversations on Agro-silvipasture, education, health, agriculture, etc. Women also attended meeting with external (extension office of the Ministry of Forestry on forestry area mapping or BPKH; Provincial Office for Tourism, Land Management Office, and other provincial offices.

Women in Semau Island are responsible for the water supply for family and livestock

Some of the activities are closer to women. The activities undertaken under the project design are related to the management and conservation of natural resources. That said, the activities are also closely related to food (from marine and terrestrial sources) security, availability of clean water, improvement of family income which are the interest of all members of society, regardless of their gender. This project introduced the spirit that management of ecosystem and natural resources are of the interest of the entire households. Male and female share equal responsibilities, and therefore equal participation of women and men becomes one of the important indicators to the success of partners.

Challenges to enhance women participation. Qualitatively speaking, participation is not merely attending meetings. But also the engagement, ability to express thoughts and concern. Women in these projects still need to improve their participation especially, qualitatively. Men still dominated the meetings and women are mostly in supporting roles. Only when women are engaged separately (the ad was done by YAO), they were able to voice their thoughts. YAO also approached women individually aside from the meetings. One notable project is the training for women in the Kupang Batanam project that encourage women to work on family gardening for vegetables.

Participation of women in the dissemination of knowledge and Eco-awareness practices in family. The involvement of women in the project activities are pivotal. As women play important role in their families, any knowledge and insight on Eco-friendly behavior will be translated into family activities. This will help to building foundation for the adoption of Eco-friendly behavior in the communities. For example, in cooking healthy local food. When women adopt this behavior the whole families will be affected, and they are also healthier.

Stepping up on the maize tradition after the harvesting

Box 2

Multi-parties Forum, a platform for communities to express their thoughts, formulate them into action, and to enhance women's role in public space.

The Multi-parties Forum was established from the Tafena Tabua Project. The initial goal is to provide vehicle for stakeholders in sustaining the GEF-SGP Phase 6 projects activities. The Forum will be a critical and thought partner for government, as mediating institution of governments (at all village, sub-district and district level) and communities.

The forum was established at sub-district level, so there were Multi-parties Forum of Semau Sub-district and Multi-parties Forum of South Semau Sub-district. The members of the forum at Semau Sub-district are 24 of them, 6 were women. They members were nominated by the Partners from the village. As it develops, only 18 members (5 of them were women) who are regularly active in the Forum. For South Semau Sub-district (covering Uiboa Village, Onansila Village, Uitiuhtuan Village and Uitiuhana Village) there were 14 members (5 of them are women) nominated by the Partners in each of the village.

The members of the Forum are from communities with various backgrounds: farmers, fishers, customary leaders, village government officials, etc. Despite of their background they do not represent the institution but as an individual nominated and on behalf of the entire community. Often, the background of the profession affects the social standing of individuals in Indonesian communities, by disregarding the professional background the Forum could run effectively and equally.

Forum members are trained to be an advocate of Semau communities' interests, to develop critical partnership with government, and to develop capacity their capacities through thematic discussion. Members of the forum understand their right for information and their responsibility to take part and contribute to the development processes.

The Forum collaborated with Semau Consortium, an institute established by PIKUL (Host/Coordinator) consists of GEF SGP Phase-6 Partners. The Forum is the guardian of Semau from within members of communities, and the Consortium—with their network, resource, and capacities—is there to assist them. This collaboration is expected to help sustaining the projects' activities.

Members of the forum not only understand how to access information but also to access and meet key decision makers. As a result, the Forum was able to organize a fruitful discussion with Kupang District Office of Agriculture to find solutions for their challenges. Communication with extension was improved and more intensified. To community, the members of the Forum also serve as their conduit and place for seek advice, as they are perceived as better-informed people in their group. The consultation of community with the members of the Forum included various theme: agriculture, tourism, forest conservation, health, education, etc.

At Batuinan Village, members of the Forum met the village government to check on the Village Development Fund that has not remitted by the District government although it was already in October. They suggested to hold a meeting to prevent misunderstanding. The members of the Forum suggested to use the fund to construct immersion wells and ditches around the springs in Batuinan Village. The outcome of this engagement was allocation of IDR 98,450,000 Village Development Fund (most of the fund was used to provide Covid related support to communities) for constructing immersion wells and water trap.

Some members of the Forum admitted that before being part of the Forum they were not confident and hesitant to speak up in any meetings. Now most of them are confident and able to voice their concerns, thoughts, and views. Women often attended the meeting with their babies,

or some elder women but still very determined and enthusiastic in undertaking their duty of the Forum. The Forum serves as 'additional supervisory body' to development implementation and help community in general to fight for their cause. They also help communities to seek clarification on important matters such as land status.

Tafena Tabua supported the Forum and its members with information on the regulations, connect them with relevant organizations, and helped discussing things to organize their thoughts to find the best solutions. They did so in person and through various communication methods.

The experience of the Forum showed that if women are given space and opportunities they could participate well in public discourse, at least at village level.

Role of Customary Communities

Strong role of customary communities. Example

- 'Kaka Ama' are leaders of customary communities living in different villages ((Hormat dan Heo, 2015; 19). 'Kaka Ama' was involved in various project activities and participated in important consultation meetings.

- In CIS Timor Project, the role of the landowner or, 'Manileo' or 'Kaka Ama', and influential leaders were very high. CIS Timor also found that in addition to the people who live well, abiding rules and contribute well to communities were also looked up to by the rest of the community members.

- The key to the success of the project was the landowners. They usually have large farmland. For example the YAO project in one of the beaches, even after the agreement was reached to allocate the land for the project, the project experienced setback after the landowners suddenly sold their land.

Participation of Youth and Elders

Participation of youth in the project. Among others:

- Dalen Mesa Project. The project changed the interest of youth in Uitiuhana Village. Before the project the youths had no interest in farming. After being introduced by the project there were 4 young men who expressed their interest (in February 2020) then they participated in the training (mid-2020), then opened up land for farming horticulture. Initially they wanted to plant tomatoes, but due to the dry season they planted garlic. They are also involved in documenting the project activities, and one of them also worked in sorghum milling. No young women yet participated in the project.

- CIS Timor Project. In Hansisi village young members of the communities participated in the voluntary work in improving water piping and planting trees and other activities in water catchment areas.

- In the OCD project, the young generation was involved in pioneering works to open ecotourism.

- In Kupang Batanam Project, members of the community participated in helping women take care of their home garden for vegetables and local seedlings. Each house was assisted by 1-2 young persons. Other youths help their parents in farming black rice and yellow corn, and sell vegetables.

Participation of elders:

- Kupang Batanam Project. Elders in this project provided information on the historical data on the local seeds in five villages. Some elders planted black rice too. Some women who planted vegetables in their garden are elders too.

- YAO Project. In this project some of the landowners and 'Kaka Ama' are elders as they are over 65 years old. Other elders attended the meeting although not necessarily taking part in the project implementation, attended to show their respect, care, attention and support to the project.

7. Additional Benefits

Youth learned English. The project on Community Based Tourism of the OCD Project allowed local youth and children to learn English. In addition, the project also provided books in the mini-library for children to read English books. This activity was stopped due to Covid 19.

Improvement of skills. Examples:

- GMI Project on organic fertilizer. The project introduced how to make bokashi fertilizer and liquid organic fertilizer. The training on this was conducted in 5 villages, participated by 140 farmers of the Tenang Farmers group. Prior to the project only a few members of the community possessed the skills. The training enabled communities to produce their own fertilizers which are less harmful in the long run as compared to the chemical fertilizers. By producing their own fertilizers farmers enjoyed additional benefits of cutting expenses on fertilizers.

- GMI Project on pig feed. In Uitiuhtuan the project introduced how to ferment livestock (pig) feed for Tenang Farmers Group, and was attended by 135 farmers. The training allowed farmers to compose and adjust the nutrient needed by the pigs. This could boost the productivity of the livestock and be less costly as compared to buying ready-to-use feed from stores in Kupang. This skill has not been widely applied as farmers are busy with their farms.

- GMI Project on bee farming. This project introduced bee farming to 3 villages (Uitiuhana Village, Batuinan Village and Huielot Village). The training on bee farming was introduced step by step in bee farming: construction of beehive, finding the bee queen, inserting the queen in the hive, and addressing pest issue in bee farming. In the past, bee farmers only used traditional methods (using mopuk, or bee trap) and passively waited for bees to come. The other way was by hunting for wild honey in the forest.

- GMI Project on the stove. This project introduced skills in making biomass stove. The training on biomass stove making was done in 5 villages attended by 37 people. After the trainingcommunity converted from a conventional firewood stove to a more efficient and low emission biomass stove. Long-term benefits of this new way of cooking are reducing carbon emission, protecting the forest and reducing consumption of kerosene. After the project there are 5 families that constructed concrete biomass stoves.

- Kupang Batanam Project on organic fertilizer. Women trained by this project have been able to produce their own organic fertilizer and are capable of continuing farming their gardens. They are also trained in seeding horticulture vegetation so that they could sustain their farming. Other women were trained in keeping rice harvest to be prepared the seedling. Cooking local food is additional skill many women learned, and they have had their food sold or consumed by their families.

New technology (especially on clean energy) was introduced. Examples:

- Cemara Project on clean energy. The project introduced solar-powered pump to Batuinan Village including how to operate, maintain, repair the pump and all the equipment, as well as all infrastructure for water piping.

The training is instrumental in ensuring the operability of the equipment and the continuity of the services it provided.

- GMI Project on technology. The project introduced how to water the plants effectively by using sprinkler. It saved time by 60% reduction. For a farm of 15x30 meters the time for watering used to be 10-12 hours/day, with sprinkler it only needs 4-5 hours/day.

- Kupang Batanam Project on water conservation. The project introduced how to reuse water from domestic waste for the watering garden through a simple filtration system (using cascaded filtration of a small stone, sand, and palm fiber stocked in used water bottles). It reduces water pollution, and conserves water.

- Kupang Batanam Project on pest traps. The project introduced two types of traps the first one using yellow-painted bottles with glue to trap bugs. Usually bugs are more interested in yellow things as they think those are ripe fruit. When the approached glued yellow bottles they were stuck on them. A similar method was used to trap flies, but instead of color the farmers used petrogenol to mimic the scent of female flies. The male flies are trapped inside.

8. Lesson Learned

Good Practices

Few good practices were recorded from the projects, especially on strengthening governance and management of the Semau Island resources:

Family garden to support families' food security. Simple activities introduced by Kupang Batanam alleviate the burden of providing food to families. It will be better if the initiative could be expanded to other crops such as tubers, sorghum, rice, etc. Those crops could provide an alternative to rice which is brought in from the mainland.

Protecting water, ensuring a bright future. Small islands are vulnerable to drought. Freshwater is a scarce resource. To ensure fresh water availability, the activities to protect the springs, water catchment areas are needed. Other activities in near future is to bring the water closer to the families by introducing a piping system so that people could save time and effort in access to water.

9. GEF SGP Support

Host and Partners are in unison regarding the support they got from GEF SGP Secretariat. They are:

- Funding and project management. In addition to fund, the GEF SGP provided technical support such as capacity building on understanding the issues better, planning and proposal development, documentation of process and progress, writing, report development, etc. GEF SGP approach is considered to be flexible and allows the partners to grow.

- Monitoring and evaluation. The monitoring and evaluation help the partners to stay on track and redirect the project to reach the goals and outcomes.

- Information and knowledge sharing. GEF SGP Secretariat and Teras Mitra (an organization formed by the Secretariat of GEF SGP) have provided a platform for learning, sharing information and contacts of resource persons/ institutions to partners and Hosts. This support was very helpful especially during the Covid-19 restriction period.

10. Factors for Success

Factors for the success of the project according to the partners are different, there are similarities as such as:

- Support from and collaboration with stakeholders in the village/communities. The partners initiated the project by consulting key stakeholders, and to be politically and socially correct, they "requested permission" prior to kicking off the project. The parties engaged are: village government, sub-district government, Kaka Ama, landowners, community leaders, etc. The supports from them help the project to be implemented. Although, there was also challenge faced by partner. One of the heads of the village avoided any conversation on the project. Further investigation indicated that the person in question had an issue with the previous project.

- Collaboration with parties from outside the communities. The Tafena Tabua is good example of this. This partner advocated and lobbied communities' issues to the government at the district and provincial level. Through Multi-parties Forum, communities were able to bring their interest and concern to external parties so that communities could get clarity and support from relevant government institutions.

- Understanding of local politics and dynamics. In the communities and villages, the dynamics are not always stable, smooth and without conflict. Some, especially the elders like to live in the past, romanticizing and glorifying the good old times. This situation sometime hinders innovation introduced by the younger generation and the project. Eco-tourism is among of many innovations that were challenged by the leaders. The elders were stuck in the golden time when the province enjoyed direct flight from Australia and visits of massive tourists in the 1990s. They were not easy to be convinced to move into Eco-tourism.

- Women participation is key. One of the successful examples of the activities is the one implemented by Kupang Batanam. Farming vegetables in the garden around houses are simple and easy to be implemented by women in the communities. This does not take a lot of effort and time, they could do it while attending other domestic matters. Yet, the result of this farming could help communities improve their nutrient intake, reduce expenditure, and to some degree provide an alternative source of income. It also helps improving the environmental quality, the houses are green even in the dry season. They also learn how to make liquid organic fertilizer which helps the farming project, cost-saving and improve yield quality. It would be great if this could be extended beyond vegetables to include tubers, corn, etc.

11. Recommendation

Maintaining what have been accomplished, replicating the successes, and continuing the good works. The outcomes of the project need to be maintained and to be replicated. Spring and water catchment areas need to be protected and conserved. The piping system needs to be maintained. Vegetable gardens need to be replicated throughout the island. The beach needs to be kept clean and free from blasting fishing. Farmers also need to plant flowers which may boost honey production.

Connecting with policy, program and budget of the village government. To ensure the sustainability of the project, communities need to engage the village government so that the activities introduced by the project could be continued. The village government could consider including activities such as piping system maintenance, replicating of project activities in agriculture (making of organic liquid fertilizer, fermented livestock feed, etc) into government policy and securing budget for them.

Maintain and expanding network and collaboration. To expect communities to maintain the network seems difficult. Therefore the Multi-parties forum could serve as a liaison institution with Host, Partners and other organizations. It is hoped that the partners could bring new projects to the communities.

12. Conclusion on Governance and Management

- **The area of management is limited.** The area managed and intervened in these projects is limited. The project only intervened in the areas around springs. The largest areas influenced by the project is the Agro-silvipasture (22 hectares) by GMI, but they are scattered, as they are private lands dedicated for vegetation.

- **Consensuses were reached at village level.** Most consensuses were reached at village level. Except for the Tafena Tabua where they worked at the district level to establish Multi-parties Forum.

- **The surveillance team is from the local community.** There is no dedicated team established to enforce the agreement. Around springs, the landowner will conduct surveillance and enforce the agreement. Around the beach, there is no dedicated surveillance and enforcement team, it is assumed that peer pressure of positive activities will prevent perpetrators from violating the agreement.

- **No legal change at national, provincial or district level.**Initially the partners are eager to introduce structural and legal change, through the enactment of certain Perdes to support the project activities and the adoption of them. However, things did not go well especially when Covid slowed down everything. Therefore understandable if in the end the project did not result in any legal change. Closest to the initial aspiration was the enactment of policy changing the support from District government from giving chemical fertilizer to organic ones.

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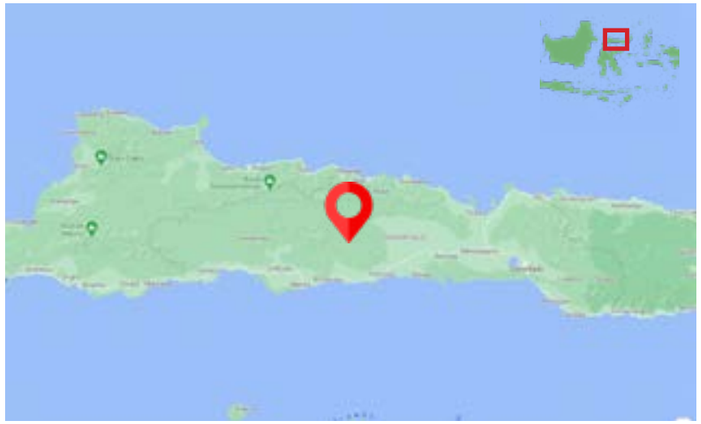
NANTU-BOLIYOHUTO
GORONTALO PROVINCE

Maize Garden inGorontalo



1. Nantu-Boliyohuto Landscape

Paguyaman River is a key ecosystem that supports the buffer areas of Nantu-Boliyohuto Reserve. The river's length is 99.3 kilometers, from the Nantu-Boliyohuto Reserve to Tomini Bay. Along the river the ecosystem varied from dense hilly tropical forest to coastal ecosystem at the bay. The River has been chosen to border Gorontalo District and Boalemo District.The river is accessible by 1.5 hour driving from Jalaludin Airport of Gorontalo. The water catchment area of the river is at the Nantu-Boliyohuto Reserve. The water is used for irrigating thousands of hectares of rice-fields, plantations, and to support communities' needs for fresh water.

Nantu-Boliyohuto (51,639.17 hectares) was established as a nature reserve in 1999 for its unique endemic species and biodiversity by a decree of the Minister of Forestry number 572/ Kpts-II/1999 on July 27, 1999. When first established the Reserve was 31,215 hectares and under the new decree (3029/Menhut-II/KUH/2014) the area was expanded to its current size, adding protected forest at Bulihohuto to the Reserve.

The forest in the Nantu Reserve was one of the pristine forests in Sulawesi Island. Nantu-Boliyohuto is the best and the largest tropical forest in Gorontalo Province. It consists of the most complete ecosystem as compared to others. Agency for Natural Resources Conservation (or Badan Konservasi Sumber Daya Alam, BKSDA, a remote office of the Ministry of Forestry at the Province) in 2014 predicted that 85% of the area was primary forests, unaltered by human activities, and rich with wild vegetations. In the reserve there is the low land, hilly

and mountainous ecosystems niched with anoa, babirusa, Sulawesi macaque, and other endemic species.

Sulawesi is an island with high endemic species of flora and fauna. Endemic species is species found only in certain areas, and not to be found elsewhere. Alfred Wallacea had described the uniqueness of Sulawesi in his book “The Malay Archipelago”. Thus, this area is known for Wallacean Area. This book was written after his expedition in 1896 in Sulawesi, Maluku and Nusa Tenggara. Until today The Malay Archipelago is still been referred for any studies in those areas (Kartikasari & Clyton, 2015, Whitten et al, 1987).

Whitten et al (1987) added that Sulawesi has 127 mammals, and 79 of them are endemic fauna; 328 birds, of them 88 are endemic. Famous endemic mammals are anoa, babi rusa, and Celebes crested macaque or Kera jambul Sulawesi (Indonesian name) or macaca nigra (scientific name). One of the endemic species is heck macaque or macaca hecki (scientific name) or Dihe. For birds, the endmic species is known as Maleo maleo (scientific name Macrocephalon maleo), anddan burung bald hornbills or enggang gundul in the local language (scientific name Rhyticeros cassidix). The floras in Nantu Reserve is also rich with some protected species such as i Vitex parviflor, Pterospermum celebicum, Livistonia rotundifolia, Madhuca betis and Arenga Pinata.

Paguyaman River, Nantu-Boliyohuto Reserve and its surrounding are rich with natural resources. Flora and fauna, water, minerals, rock materials, agriculture and plantation, etc. If they are managed properly they will bring prosperity to the communities. One other unique characteristic of the reserve is the saltwater salt mud. Kartikasari & Clyton (2015), observed that the mud contains minerals such as sodium and calcium which neutralize poison and improve animal digestive systems, especially after eating tubers or fruits from the forest. Salt mud in Nantu is the only one left in Sulawesi. Previously there was other salt mud in Central and North Sulawesi but they have gone.

According to the spatial planning of the province and 3 districts, the reserve is going to be advanced into the National Park of Nantu-Boliyohuto. The name Boliyohuto is added as the area is at Mount Boliyohuto (1,018 above sea level). Paguyaman River is rooted from this reserve and passing various land uses: plantation (palm oil, sugarcane), rice fields, dry farmland, residential areas and finally to Tomini Bay. The rive is an important source of life to the communities of Gorontalo District and Boalemo District. Paguyaman Dam in Asparaga Sub District of the Gorontalo District irrigates 6,880 hectares of rice fields (around 4,000 in Gorontalo District and the rest in Boalemo District).

Typical landscape of farm village in Gorontalo

2. Institutions Involved in the Project at Nantu-Boliyohuto

GEF SGP Phase-6 Project in Nantu-Boliyohuto is coordinated by one Host, JAPESDA, with 6 partners:

Table NB1: Project Location and Office Location of the Host Organization and Partners in Nantu-Boliyohuto

No	Institutions	Office (Island)
1	JAPESDA (Host/Coordinator)	Gorontalo City
2	PKPKL Gorontalo University	Gorontalo City
3	LPPM Gorontalo University	Gorontalo City
4	Bumdes Tamaila Utara	Nantu-Boliyohuto
5	Agraria Institute	Gorontalo City
6	WIRE-G	Gorontalo City
7	Marsudi Lestantun Group	Nantu-Boliyohuto

Host's office was in Gorontalo City, and so were 80% of the partners. Only two partners had their offices in the buffer areas of the reserve. Kelompok Marsudi Lestantun and Bumdes Tamaila Utara. Fortunately the cellphone connection and Internet work decently, which helped a lot for coordination and communication. This was even more important during the Covid 19 restriction period.

Table NB2: Funding, Project Duration, and Activities in Nantu-Boliyohuto Project

No	Institutions	GEF SGP contribution (USD)*	Co financing	In kind contribution**	Project duration (month) ***	Activities
1	JAPESDA (Host/ Coordinator)	50,000		50,019	24	• Strengthening the socio cultural and ecological resilience • Communities' capacity development • Developing good practices in management of local organizations and community groups. • Support project implementation in Nantu-Boliyohuto.
2	PKEPKL Gorontalo University	35,000		46,113	24	• Forest vegetation analysis • Identification of local wisdoms • Ecosystem and biodiversity management • Organic pesticides and fertilizers • Cocoa and coconut agroforestry
3	LPPM Gorontalo University	25,000		26,928.57	10	• Utilization of water catchment area for picohydro.
4	Bumdes Tamaila Utara	17,500	29,117	20,434	16	• Planting of agricultural land in sloppy area and riverbanks at Tamaila Utara Village with diverse vegetations. • Ecotourism (waterfall)
5	Agraria Institute	20,000		22,231	15	• Local plants development for season indicators.
6	WIRE-G	16,000		26,439.16	12	• Gender and environment sensitive planning and budgeting. • Sustainable agriculture • Processing of local agricultural products.
7	Marsudi Lestantun Group	20,000		20,485.30	15	• Social forestry(707 hectares). • Eco-friendly productive economic development • Silvipasture
	Sub total	**183,500**	**29,117**	**212,650,03**		

Source: Compiled from a database of GEF SGP Phase-6 Secretariat.

**Currency Rate assumption 1 USD = Rp 14.000.*
***For "In-kind contribution" is not populated because Partners and communities are not used to calculate it. In reality, there are numerous contribution from communities: supplies, time, transportation to the meetings, space/venues for various activities in the projects.*
****Project duration is counted in total, all Partners and Host requested a no-cost extension due to Covid.*

In general, the plan of the activities in the Nantu-Boliyohuto Project included: (1) Agro-forestry; (2) Terraced Agriculture; (3) Utilization of water catchment areas for picohydro power plant; (4) Local vegetation protection; (5) Gender and environment sensitive planning and budgeting and (6) Social forestry.

3. Landscape Governance in Nantu-Boliyohuto Project

The project location is at the Paguyaman River watershed and around Nantu-Boliyohuto Reserve. The GEF SGP Phase-6 in Nantu-Boliyohuto focused on rehabilitation of degraded area in the watershed, protection of the water catchment area to sustain the picohydro power plant, and rehabilitation of sloping land, areas vulnerable for landslides.

The meetings only involved local stakeholders: sub-district government, village government, communities, a representative from the field office of the ministry at the trans-migrant settlement, and partner.

Table NB3: Terrestrial Landscape/Management

Partner	Agreement	Process	Team
Marsudi Lestantun	In Sari Tani Village there is a transmigration area known as SP3PANGEA Sub Village. There are two farmers group: Marsudi Lestantun and Unggul Utama. They collaborated in introducing terraced farm lands (80 hectares). Each individual owns 2 hectares of the farm. The introduction of terracing farm land is expected to affect c.c. 600 hectares of lands in SP3 PANGEA, and eventually the whole village of Sari Tani (around 4,000 hectares).	Meetings to reach consensus were conducted with members of the farmers groups, head of the technical service unit of the Ministry of Forestry. The agreement is reached verbally, no written record. 13 members (each with 2 heactares of farmland) have sloppy land. It is expected that the project will bring benefits to farmers with sloppy land so that they could utilize the land sustainably, reducing negative impacts to ecosystem (prevention of soil erosion, land slides, declining soil permeability, etc).	There were 28 members—mostly or 35 male, and 3 female—were trained on agriculture in sloppy land, organic fertilizers and natural pest repellent.
Marsudi Lestantun	Community Forestry license granted to Marsudi Lestantun farmers group allowed the farmers to maange c.a. 707 hectares of Limited Production Forest (Hutan Produksi Terbatas, HPT) in Sari Tani Village, Wonosari Sub District, Boalemo District. The communities were granted with license to manage the forest from Ministry of Forestry based on Minister of Forestry's decree number. SK. 3674/MENLHK-PSKL/PKPS/PSL.0/6/2020. The license is valid for 35 years.	Hutan Marsudi Lestantun ForestFarmers Group request to acquire the license with a proposal of management planfor 707 hectares of forest at Sari Tani Village, Wonosari Sub District, Boalemo District Gorontalo Province. The licence was requested for 72 households (signed by 71 men and 1 women).	72 households would manage Community Forestry (707 hectares) in Sari Tani Village..

Partner	Agreement	Process	Team
LPPM UNG	Manage and utilize the picohydro power plant for supporting social life of the transmigrant. The power plant was constructed and installed by communities. Note: there is still some issue on social cohesion between the transmigrant and native Sulawesi.	Meetings to reach consensus were organized to reach agreement on the construction and installation of picohydro power plant for transmigrant communities. The electricity is to provide lighting and power for mosque and Islamic Student Club in Tumba Sub Village. Communities agreed to continue maintaining the facilities.	A team to maintain the facilities was established with the total members of 30. 10 of them are women. This team is responsible for management and maintenance of the picohydro facilities.. Management and maintenance of the picohydro facilities by Javanese (transmigrant) communities in Tumba Sub Village, 11 of them are members of the Islamic Student Club, 6 of them are women.
Bumdes Tamaila Utara	Replanting of 5 square kilometer of critical land around river banks in Tamaila Utara village The benefit is to protect the river bak so that it could prevent flood and land slides during rainy seasons. Previously, the areas were frequently flooded. Communities learned that the some areas that were replanted was effectively able to prevent flood. The activities are continued and adopted by Tamaila Utara Village government into the village development program and was budgeted accordingly. Allocation of the forest area for watershed and river bank protection in Tamaila Utara Village.	Meetings were organized involvingTamaila Utara Village, Viilage government owned enterprise (or Bumdes)Mitra usaha., Tolangohula dan Pemerintah Kabupaten Gorontalo.	Two teams were established (1) small enterprise for managing/ supervision of economic activities consist of 20 people, (2) Forum Protection of forest for maintenance of watershed and water catchment area consist of 60 people. From the total 80 people in the teams 50 are men, 30 are women. The are all from Tamalia Utara Village
PKEPKL	Agro forestry was introduced in this project by combining cacao and coconut as main vegetations and other vegetations either hardwood vegetation like durian, or other fruits, and other plants: corn, peanot, chillies, etc. This agroforestry is to enrich local commodities. A demonstration plot was established. Adding to that 3 farmers farm lands also adopted the same approach for piloting the model of cacao planting. Only verbal agreement was reached.	Meetings involved farmers, village government, extensionist (for agriculture) and partner.	Communities maintain and cultivate the cacao plant supported by partner and extensionists. Cross learning and field stuy for other farmers, so that they could replicate the model.

4. Legal Change and ommunities' Participation in Strategic Policy

There was no changing of a law at local or higher level. However there was some new policies issued from higher-level government (district, provincial or national level of government):

- LPPM UNG Project in Tumba Sub Village, Tamaila Utara Village. This picohydro project was recognized Ministry of Village, Transmigration and Under-developed Areas and Tamaila Utara Village was stated as an “innovative village”. The inauguration of this was in a ceremony attended by Vice President. Head of the District improved the status of two teachers in Tamaila Utara Village from contract teachers to civil servant teachers (open-ended contracts with significant improvement on remuneration and benefits) to teach at school in Tumba Sub VIllage. Internet facility was installed at two houses of faiths and at the community center for processing of their agricultural products. Involved in this project PSE LPPM UNG, Tamaila Utara Government, GEF SGP Phase-6, Gorontalo District Government, Ministry of Village, Transmigration, and Underdeveloped Areas, Ministry of Research and Technology, and Ministry of Information and Communication.

- Marsudi Project in Saritani Village. Proposal for getting Community Forestry License was granted by Ministry of Forestry for the 707 productions forest based on the decree 4674/MENLHK-PSKL/PKPS/PSL/0/6/2020.

The impact of the project to program, policy and activities in the village. Among others:

- LPPM UNG Project, Tamaila Utara Village. The status Tumba was unclear as it was considered part of the plantation forest. After the picohydro was constructed, the village government officially agreed to formalize the status of Tumba into sub-village.

- WIRE-G Project in Juriya Village. This project the village government’s midterm development plan to include environment and gender-sensitive approach. They strengthened the women group to participate in the development process including in the meetings to reach a consensus on the development plan at the sub-village level. The women were encouraged to express their aspirations, concerns and interests. Environmental needs were also communicated in the development planning meeting, among others suggestions to replant important areas, organize training on waste treatment, etc. Women from sub-villages were elected to represent the sub villages in the village level meeting. Once the midterm development plan is approved, the plan could be guaranteed budgeted and supported in the annual development planning document.

Since the project is at the local/community level with all the limitations on funding, scheme and scope, it was expected that the Nantu Boliyohuto project will have no direct effect on the policy at district, provincial or national level such as National Strategy and Action Plan on Biodiversity. (see Table 5: Legal Change and Participation of Communities of Nantu Boliyohuto at Strategic Policy at National, Provincial and District Level).

Table NB4: Legal Change and Participation of Communities of Nantu Boliyohuto at Strategic Policy at National, Provincial and District Level

Partners	Legal change in national, district and local affected by communities’ activities.	Impact or Input to National Policy (National Action Plan on Biodiversity)	National or Sub-National Policy Change Affected by the Project	Community Participation in Design, Implementation, or revision of the National Policy on Biodiversity)
PKPKL Gorontalo University	Local/village agreement	None	None	None
LPPM Gorontalo University	Local/village agreement	None	None	None
Bumdes Tamaila Utara	Local/village agreement	None	None	None
Agraria Institute	Local/village agreement	None	None	None
WIRE-G	Local/village agreement	None	None	None

Partners	Legal change in national, district and local affected by communities' activities.	Impact or Input to National Policy (National Action Plan on Biodiversity)	National or Sub-National Policy Change Affected by the Project	Community Participation in Design, Implementation, or revision of the National Policy on Biodiversity)
Marsudi Lestantun	Local/village agreement Proposal for requesting license to manage community forestry was approved, and community was given license valid for 35 years from the Ministry of Environment and Forestry. (SK 4674/MENLHK- PSKL/PKPS/ PSL/0/6/2020).	None	None	None

5. Impacts of Projects on Social and Economic Conditions of Nantu-Boliyohuto Communities

Measured impacts and changes

Similar to other areas, in Gorontalo it was found that there were documents and reports indicated that there was no partners conducted systematic assessment to measure the impact of the project on various aspects: households income, individual income, diversification of source of income, job creation, access to market, etc. There was no baseline and after intervention data. Therefore no statistical evidence of the project impacts could be presented. The limitation of time and budget was a major constraints for collecting the data (baseline and impacts data). In addition, the impact of this kind of project usually takes a long time to happen. It is still too early to see the expected impacts and changes. Host and Partners may need to conduct annual monitoring visits to report the impact in the future. That said, several indications of changes could be presented as the following:

5.1 Supporting social activities. Examples:

- LPPM UNGProject in Tumba Sub Village. The electricity generated from the picohydro power plant allowed mosques to serve communities better. Call for prayers could be aired using speaker, evening prayers are well lighted.

- WIRE-G Project in Juriya Village. Youths and communities in general are more socially active. Prior to the project they only gathered socially during sports events prior to the celebration of Independence Day (August 17), and they are not well organized. The project encouraged communities to be better organized, to participate in the development planning, to conduct regular discussions, to invite communities to conserve the ecosystem, to plant trees in the slopped land, and in riverbanks.

  In the same project, women are also more encouraged to participate. Women had their regular discussions to address their challenges in the communities after religious meetings once a week. The women also established women groups to make coordination and consolidation easier. They took training on cooking and processing of local food. The women initiative was well responded to by the government. The government recognized the need of involving women in development planning, consultation for development planning and implementation, etc.

  The government now provide information for the public including women, diffable, and other under-represented members of the communities. Theproject drives more transparency and inclusiveness of the governance.

  There was an increase of communities' awareness on an environmental issue. The attitude was also improved as indicated by the desire and willingness of community members in participating to the conservation program.

- The projects in general have opened access to Juria Village, Tamaila Utara Village and SP3 PANGEA Sari Tani Village. Moreover for Tumba and other sub-villages in SP3, they are very remote and transportation and communication are nearly non-existent. Local inhabitants were stuck with their daily routines, only a few were exposed to live outside the villages.

  For examples, the inhabitant of Tumba Sub Village was marginalized and uncertain of their life because their village is part of the plantation forest concession. But the GEF-SGP Project had helped communities in accessing information useful for them in understanding better their position and their legal status. Women are also more active after being encouraged by the project.

5. 2 Reducing family expenses. Examples:

- Marsudi Lestantun Project in Saritani Village. Since there are more choices of food from local farms, and no longer dominated by corns, communities could access food diversity and sufficiency with less cost.

- LPPM UNG in Tumba Sub Villag. This Picohydro project reduced communities expenses for lighting, since they got power from the flowing water in the river.

- Agraria Institute Project. The local production of seeds, organic fertilizers and natural pest repellent allowed communities to save money otherwise spent for chemical fertilizers, seeds, labor costs, etc.

5. 3 Diversifying plants. Example: Agraria Institute Project. The project introduced diversification of plants so that they are not dependent on one commodity only. It reduced risk, promotes health life, and economically more beneficial. The project introduced diversifying staple food from only rice to include corn, tubers, potatoes, etc. The diversification of plants was introduced through garden farming, in SP3 PANGEA Saritani Village, Tumba sub-village.

5. 4 Increasing income. PKEPKL Project. The project introduced the production of virgin coconut oil and helped women to earn additional income of IDR 500.000 – 1.000.000.

5.5 Opening op job opportunities. Examples:

- Marsudi Project in Saritani Village. The more

diverse crops and increased production opened up employment opportunities for harvesting.

- LPPM UNG Project in Tumba Sub Village. The Picohydro power plant allowed communities to process their cacao. The agreement had been made between the women and communities of Tumba on processing raw cacao into market-ready chocolate bar.

- PKEPKL Project. Production of virgin coconut oil opened up jobs for women in the communities.

- Agraria Institute Project. In collaboration with Marsudi Lestantun the partner provided support to start a tofu factory. This factory would buy soybean produced by local farmers and open new jobs for 3 members of the community. It also helped communities improving their protein consumption. The waste was recycled into another food (tempe gembos, or soft soy cake) which opened jobs for 4 women. The remaining waste was used as cattle feed and fish feed owned by members of Marsudi Lestantun. In the future more youth will be involved to attract them staying in the village and developing their village, rather than moving to towns for jobs.

5.6 Conserving natural resources and reducing pressure on nature. Examples:

- LPPM UNG Project. The picohydro power plant reduced carbon emission so that communities and nature are not contaminated by air pollution.

- WIRE-G Project in Juria Village. The risk of landslide is reduced as less slopped land is planted with corn. This is due to government program and supported by awareness-raising program of the project. Farmers understanding and capacity on Eco-friendly farming is improved.

5.7 Improving the availability of local seeds.
Examples:

- WIRE-G Project in Juria Village. Farmers shifted from using hybrid and company-made seeds to locally produced seeds. Local corn seeds supplied raw materials for local food.

- Another village (SP3 PANGEA and Tumba Sub Village) also experienced the same thing. PKEPL UNG supported Tumba Sub-village for this and Agraria Instituted supported SP3 PANGEA sub village. These are part of reviving traditional farming in Gorontalo.

- In general the transition to local seeds of corn and organic farming practices bring benefits from the reduction of operational cost, no chemical fertilizers and chemical pesticides needs. The yield harvested from local seed is also less than that of the company-made seeds, on average local seed yields to half of that of company-made seeds. However, given the reduction of production factors, and the higher price of local corn the less yield is compensated. The challenge is to find the local seed, they are hard to find.

5.8 Bringing benefits to the environment.
Examples:

- Marsudi Project. The project introduced terracing the sloppy land to reduce the risk of landslides, prevent soil erosion, and maintain soil permeability. The project help communities manage their resources sustainable.

- Marsudi Lestantun and Unggul Utama Project. They introduced silvipasture, and created 5 hectares prototype. For feeding livestock they planted elephant grass or Napier grass (scientific name Pennisetum Purpureum). The livestocks included 39 goats, 1 cow for two farmers groups. In addition to farming Napier grass, farmers also planted hardwood trees such as albizia (albizia chinensis), gamalina (gamalina arborea), champak (magnolia champaca in scientific name, or Cempaka in Bahasa Indonesia), cashew (anacardium occidentale), soursop (annona muricata), and nyatoh tree (palaquium obovatum). GEF SGP project had helped planting trees in three phases. Phase one was 500 trees, phase two was 700 trees, and phase 3 was 1000 trees. Those trees are mostly to revitalize critical lands. In addition Watershed Management of Gorontalo (BP DAS) supported community seed farm by granting 25,000 seeds in areas of 15 hectares. Gorontalo District also supported the replanting of 2,500 trees through Kambungu Beresi Project or Clean Kampong Project. Adding to that there was also massive planting of nutmeg (10,000 trees), coconut (9,000), and durian (400) in 8 hectares of land.

- All the above led to the improvement of the ecosystem, improved agricultural production, improved farmers' income, and introduced sustainable farming. It also indirectly mitigates disaster from landslides.

5.9 Diversifying businesses. PKEPKL Project focused on supporting communities to produce virgin coconut oil. This is an innovation and introduction of technology that helped communities, especially women, to improve their economy from a small enterprise of making virgin coconut oil. The products have been marketed albeit at a limited scale.

5.10 Facilitating change on how to farm. Agraria Institute Project. This Project helped farmers to shift from using factors brought from outside (seeds, chemical fertilizers, pesticides, etc) to being more reliant on locally produced supplies. The way farmers worked was also shifted back to more cohesive and mutually supportive farming. Prior to the project farmers have neglected their tradition of collaborating and working together and more commercial interaction among one another. The project revived those back values. Not only did the project brought improvement to the ecosystem it also helped rejuvenate local and traditional wisdoms.

5.11 Revitalizing local wisdoms in agriculture and environmental management. Examples:

- Marsudi Project. This project revived old traditional wisdom/custom called Huyula. Huyula is a voluntarism and collaboration spirit expressed on community gatherings to voluntarily undertake certain works needed by the community. In this project there are several Huyulas: In Tumba community gathered and fixed the roads and bridges on Saturday and Sunday; 5 members were assigned to fix any problem with picohydro (maintaining stream canal, embankment, etc). In Saritani communities worked on constructing water piping systems.

- Local wisdoms on astrology was revived through recognizing the role of Panggoba or local experts on astrology in guiding the season and cycle in the agricultural calendar.

5.12 Building agreements to protect the environment.
Agraria Institute Project. There were agreements (some are verbal agrements) on environmental protection and management of the landscape, such as:

- Agreement and regulation in Tumba Sub Village to ban poisoning fishes.
- Agreement for banning people from outside the sub-village to clear forest for agriculture. Although this was only verbal agreement, and no clear punishment agreed, the community of Tumba Sub Village enforced it religiously.
- Marsudi Lestantun groups agreed to diversify their crops in their farmlands and gardens. The most common crop that everyone planted was corn, now there are more varieties. This agreement was important for slopped land to allow better protection of the land, but also to enhance productivity.

5.13 Facilitating the transfer of knowledge on agriculture. Agraria Institute Project in Saritani Village. As the project helped develop the social cohesion, naturally interaction among themselves led to an exchange of knowledge, especially between the native and the trans-migrant. Many of the migrated people were not farmers. Now in their location they had to farm for their living. The exchange of knowledge helped both parties.

Practice of Molapo (fumigation) carried out bypanggoba (Granny Reni) at the corn field

Positive Change in Social and Economic Condition since the Project was Initiated

Environment issue was mainstreamed in the village.

- There was significant change experienced by communities in the way they farm. Prior to the project they plant single crop (mono-culture). The project introduced diversification of plants in the UPT SP3 PANGEA Saritani Village. Mardi Lestantun introduced mix crops in sloppy lands. This change is beneficial ecologically and economically. The mixed crops helped strengthened the sloppy land so that it became less vulnerable to sliding, and economically it offered more opportunities for marketing. Added with other conservation measures the land became more productive. This attracted other members of the community to replicate the innovation introduced by the Marsudi group. They used logs to terrace their lands.

- Farmers started to adopt organic farming. They learn how to make organic fertilizers, natural pest repellents, how to apply them and how to slowly detach from chemical inputs for their farming. They started to get interested after seeing the demonstration plot and saw the outcome of organic farming. They also wanted to expand this to cacao farming.

6. Empowerment of Women and Customary Communities Empowerment in Nantu-Boliyohuto Project

Women Empowerment

Activities were dedicated to women. Partners organized several activities dedicated to women, such as:

- Marsudi Project. The project facilitated 10 women to form small-business group in UPT SP3 PANGEA Saritani Village on processing food. This could help enhance communities' livelihood. The members had committed to ensuring the sustainability of the group after the project was completed.

- WIRE-G Project in Juria Village. The project introduced an improvement in governance and management of group productivity. Women were more encouraged to work in public service, running for village government office (either through election or appointment). Women participation increased, including the establishment of women business groups to process and sell agricultural products, and other products of the youth organization (Karang Taruna). The business helped women to improve their income. Consequently, they need to better manage their finance, their group and expand the marketing of their products.

- In Tumba Sub Village, women group (with 12 members) produced virgin coconut oil. In the Center of the Village (Tamaila Utara) there was a larger group (of 15 women) producing sago and sago cookies.

- Sari Tani Village at SP3 Sub Village. There were three groups of women developing home businesses: producing banana chip, sweet potatoes chip, and tofu.

- PKEPL Project, one group of women in Tumba showed very high participation of women in agriculture and domestic activities. Women started to have an important role in decision-making regarding agriculture (including a shift from chemical to organic fertilizers), production of virgin coconut oil, etc. Women and other members of communities demonstrated the acquisition of knowledge in changing their daily activities and business.

Challenges in enhancing women participation. There are challenges to having women attending meeting and expressing their thoughts in the meetings in Nantu-Boliyohuto.

Role of Customary Communities

Recognition and appreciation to local wisdoms. The general thought is that there is no customary communities in Nantu-Boliyohuto. Communities only recognized the role of Panggoba, an individual possessed knowledge on astrology based on local wisdom and traditional knowledge. The knowledge is proven useful in agriculture, especially in understanding the season and cycle for planting, harvesting, etc., as agriculture is very weather dependent.

Participation of Youth, Elders and Diffable People

Youth's participation was seriously considered in the project. Such as:

- Marsudi Project. Youths were involved in the project especially on the making of the wood efficient stove in UPT SP3 PANGEA. There were 12 youths participated in the project. The stove project is to help communities reduce cost, firewood consumption, and threat to the environment. This was also to attract youth to stay in the village.

- WIRE-G Project in Juriya Village. The project encouraged youth to actively participate in social activities. Previously they were only focused on sport, now they took part in many social activities as well. They are also involved in economic activities such production of local corn sticks, and charcoal from corn cob (by youth organized in Karang Taruna).

- Agraria Institute Project. This Project trained youth on farming in two locations. In Saritani Village 17 youths participated in the training, and in Tamaila Utara Village 14 youths attended the training. In each of the training one Panggoba taught the youth on astrology based on local wisdom.

Participation of poor and marginalized communities:

- WIRE-G Project in Juriya village. The project inspired many poor and marginalized members of the community to improve their life. They saw opportunities offered by the project and they actively engaged in any activities, including in various meetings to express their thoughts and interest.

Participation of person with diffability. was one woman with diffability, Mbok Waikem, she always attended any meeting she was invited to join. She is a transmigrant at SP3 PANGEA. She was quiet in the meeting, but people thought it was because she wanted to digest and see if the plan is implementable. She was an example of an independent woman.

The Women Group makes VCO

7. Additional Benefits

Individual Capacity Development. Members of communities were exposed to various issues new to them and were trained to learn better and to acquire new skills. They learned and studied about gender, sustainable development, sustainable agriculture, relevance and connection of gender and sustainable agriculture, inclusiveness, participation of youth and other members of communities, etc.

Group's Capacity Development. There were several trainings provided to groups on the production of food for market, production management and administration, etc. The members of communities chose the products they want to make and sell.

Institutional Capacity Development. Training to develop the capacity of a government official to be capable of developing a gender and environment-sensitive planning document.

Examples of innovation that helped communities.
Examples:

- LPPM UNG in Tumba Sub Village. The project introruced innovation on power generation by using renewable energy from water stream/ fall at pico size, and therefore cold picohydro. Most of the components are locally made and therefore it was expected that community could learn how to construct by themselves in the future.

- PKEPL Project. The project introduced how to maintain and cultivate cash crops in through mixing vegetation, and the production of virgin coconut oil.

- Marsudi Project in three villages aforementioned. This project introduced innovation in farming from chemical-based farming to more organic and natural farming; from mono-culture to multicultural; from farming on sloppy land to terracing farm land. The innovation-led to the improvement of yields. In addition farmers were also trained to process their products to add value.

Reviving local and traditional knowledge on nature for agriculture:

- The Project also documented and Support the preservation of local knowledge useful for agriculture. Among others astrology which helped communities in Gorontalo to understand and predict weather patterns so that they could adjust their farming strategy (when to prepare seedling, when to plant, when to harvest, etc).

Strengthening interaction amongst community members. Agraria Institute Project. The project facilitated communication amongst community members, and cross-learning among themselves. Mersadi Lestantun group were not farmers from where they were before (in Java Island). But, as they migrated to Gorontalo they had no option but to farm. Farming corn for instance, does not simply rely on seeds and land, for people of Gorontalo they need to factor in weather, and for that they need someone who is able to read the star constellation to help. This is something that the migrants from Jave learned.

Documentation and Cross Generation Learning

- Marsudi Project. This project preserved the knowledge of farmers members of Marsudi Lestantun in UPT SP3 PANGEA Saritani Village by retelling the story to the children and training them by doing directly on the farm.

- WIRE-G Project in Juriya Village. The project found a unique method of processing and cooking bitule, a kind of tubers/potato. To make it edible it required certain processing techniques. This was recorded and trained to the younger generation. This ability to process bitule is very important as a safeguard for food security during the famine (caused by drought or flood). The project helped develop training module for processing bitule.

Box 1
Panggoba, star watcher who predicted the weather to develop an agricultural calendar

Since ancient time, every community had their customs, tradition and wisdoms regarding the interaction of humans, nature and the supreme power. The management and utilization of natural resources were governed in a system of beliefs, practices or norms based on the guidance of the elders or customary leaders.

Like in other areas, Gorontalo people had a structure of management and utilization of nature. In a campong governance system, there is one person assigned as Panglima (or Commander) responsible for security matters, Imam in charge of the religious matter, and a Panggoba serves as 'minister of agriculture'. Panggoba will set the agricultural calender for the rest of the community based on his readings of the natural phenomena (especially on the stars constellation and other natural signs). Panggoba was also responsible for informing potential pests and diseases that may attack the farms.Panggoba helped communities to build social mechanism that enhance mutual support.(Teras Mitra, 2020).

Sometime in the past, Panggoba was believed to be using magical or mystical power and some religions considered that as a practice of paganism and therefore it was condemned. Recently the role of Panggoba is re-recognized, as it was found to be efficacious and useful, especially as there was no other alternative information available. The urgency of having the skills to read the natural signs is more important these days as weather is changing more frequently with higher intensity. The ability to read natural signs has become more and more important.

Panggoba's knowledge is closed to astrology, as they based their readings on stars constellation to predict weather events. Examples are: (a) 'Totokiya' or stars of the king; (b) 'Tadata' or seven stars; (c) Otoluwa or constellation of six stars; and (d) 'Maluwo' or chicken constellation consist of three stars. (Tamu dan Dako, 2018: 107-108).

Such skills are passed on through the next generation.

8. Lesson Learned

Good Practices

Collaboration is good for the development of remote and isolated area with an inadequate capacity of the people and access to information and knowledge.Examples:

- LPPM UNG Project on picohydro. The success of this project is a testament to the success of collaboration of Electrical Engineering of the University, Center for Innovation Study of the University, District Government of Gorontalo, Tamaila Utara Village Government, Ministry of Village Under-Developed areas and Transmigration, etc. The ministry is replicating the project in another location in Tumba.

- WIRE-G in Juriya Village. The village had the election in 2019. The project management had maintained its independence in the election and political processes. It paid off. Soon after the election the project management was able to build trust and confidence in the new leader, and finally was able to collaborate well with the new administration. The village government had agreed to adopt the program in the next development plan especially on the women empowerment and protection of children.

On the other hand, the project also collaborated with a vocational training center (BLK, Balai Latihan Kerja) of Gorontalo Province to provide training on business management for women groups in Juriya Village. The project also builds a network to support the groups in marketing their products. The project also worked with the government to continue supporting the activities on empowering women through community-based businesses, to replicate the activities and to expand the number of the women business groups (Kelompok Usaha Bersama milik perempuan). Another efforts was establishing collaboration with government to incorporate environmental protection in their policy. Some of these efforts in engaging the government to continue supporting the project were faced with challenges.

- Bumdes Project in Tamaila Utara Village. Bumdes Mitra usaha collaborated with the Ministry of Forestry field office on watershed management and protected forest (BPDAS-HL), and the Government of Gorontalo District on program Kambungu Beresi (Clean Kampong) to revegetate critical land and riverbanks in Tamaila Utara Village, and on improve the economy of Marsudi Lestantun farmers groups (value added to agricultural products).

  To support the continuity and sustainability of the project the management of the project had worked with the village government to enact village regulation and to finance the maintenance of the project (replant dead seeds, cultivate and keep pests away).

- Bumdes Project in Tamaila Utara Village. The project management had convinced the village government to monitor and to continue support business groups established by villagers and Bumdes Mitra Usaha of Tamaila Utara Village. The village government will include programs to support communities' small businesses in their midterm development plan

Opportunities for further area development.
Example:

- LPPM UNG Project. The project had laid out the foundation for further development. Conservation of the water catchment and construction of picohydro power plant are an initial investment that opened rooms for further development in Tumba Sub Village. The conservation provides thefoundation for strategies for conservation that brought environmental benefit to the communities, and picohydro power plant brought clean and relatively cheap energy to communities.

- The project in three areas in Tamaila Utara Village, Saritani Villageand Juriya Village had given lesson on how to manage area around Nantu-Boliyohuto Reserve as a unified and integrated landscape. In the future the model and approach could be maintained and strengthened and to be incorporated into social forestry model (among others under the scheme of Community Forestry). Sustainable agriculture could be continued and replicated through collaboration of parties.

- Challenges were faced. In implementing silvipasture individuals were having difficulties in finding feed. Silvipasture is a program that requires the participation of groups to succeed so that transaction costs could be lowered, and economy of scale could bring benefits, especially when it comes to procuring feed, maintenance, pen construction, etc.On terraced farming the collaboration had been found to be effective and will be continued.

  Challenges in the marketing of the products are from the acquisition of permits for trading goods/foods from relevant governments. Although regulations for the permit for selling and distribution of products had been simplified, for villagers they are still too complex.Transportation and communication are other challenges for marketing and production of commodities in Tumba dan SP3 PANGEA Sub Villages.

9. GEF SGP Support

Host and Partners are in unison regarding the support they got from GEF SGP Secretariat. They are:

- Funding and project management. In addition to fund, the GEF SGP provided technical support such as capacity building on understanding the issues better, planning and proposal development, documentation of process and progress, writing, report development, etc. GEF SGP approach is flexible and allows the partners to grow.

- Monitoring and evaluation. The monitoring and evaluation help the partners to stay on track and redirect the project to reach the goals and outcomes.

- Information and knowledge sharing. GEF SGP Secretariat and Teras Mitra (an organization formed by the Secretariat of GEF SGP) have provided a platform for learning, sharing information and contacts of resource persons/ institutions to partnes and Hosts. This support was very helpful especially during the Covid-19 restriction period.

10. Factors for Success

Partners views differently on what factors contributed to the success of the project. Generally the following are some common factors:

- Supports and partnerships with multi parties in the village/communities. All activities were conducted due to support and participation of all parties involved: village government, community leaders, and most members of the communities.

- Collaboration with external parties. Partners (NGOs, Universities, environmental organizations, etc.) are obvious external parties willing to collaborate with and to introduce the project to communities and other parties. The innovative ideas on agricultural practices, production of commodities (food, VCO, etc), construction of Eco-friendly power plant, etc. would help the ecosystem of Natu-Boliyohuto Reserve kept intact.

11. Recommendation

Maintain what works, replicate the success Communities and government of the targeted areas had collaborated to accomplish all the goals of the project. The next step is to maintain it from the government budget. The challenge, the villages are remote and isolated. The partners could no longer present more regularly in person. Whenever possible communication through the Internet and phone need to be maintained.

12. Conclusion on Governance and Management

- **The area of project is limited.** The project was in Nantu-Boliyohuto Reserve was limited. The project worked on (a) 80 hectares of terraced farming; (b) 707 hectares of community forestry; (c) water catchment area for picohydro power plant; (d) and re-vegetating river banksfor 5 square kilometers.

- **Meetings and agreements were at the village level for a small area.** Meetings were conducted at the local level only, involving the head of the village, leaders of communities, farmers groups, transmigration area management, and others.

- **Surveillance and management teams are from local communities only.** Any team established to enforce compliance on the agreement are from local communities only.

- **No legal change at national, provincial or district level.** Initially the partners are eager to introduce structural and legal change, through the enactment of certain Perdes to support the project activities and the adoption of them. However, things did not go well especially when Covid slowed down everything. Therefore understandable if at the end the project did not result in any legal change. Closest to the initial aspiration was the enactment of policy changing the support from District government from giving chemical fertilizer to an organic one.

REFERENCE

Reports:

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Paper, Articles and News:

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Tribute to Candra Kusuma who has inherit this manuscript as his last contributions in GEF-SGP Indonesia Program Phase-6