



TASAMU RAWANANG

A Traditional Approach to Community-Based Fisheries Practised by the Indigenous Asai

CASE STUDY
WWF CORAL TRIANGLE PROGRAMME

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SITE DESCRIPTION

Kampung (village) Asai, one of nine villages in the Windesi District, is located on the northern coast of the Yapen Islands Regency, in Papua Province. With an area of 2,217.24 hectares, Asai covers 14.56% of Windesi District and 0.91% of Yapen Islands Regency. According to Yosias Kewari, one of the customary rights owners, Asai was once known as Puramati (old village in Yapen language) in 1950. This was when Asai was still located next to Munggui Village. In 1963, the villagers decided to relocate to the current Asai location, as it was difficult to attend mass at the church in Windesi Village. The customary rights owners of Windesi Village, the Abubar and Kewari clans, then agreed to give their customary land for a new settlement as part of the administration of Munggui Village. In 1970, Puramati Village changed its name to Asai, which was approved by the government in 1978.

Asai was founded on customary land, and its villagers are considered *Masyarakat Hukum Adat* (MHA) or a customary community. Customary rights for MHA in Papua include rights to land in coastal areas, small islands and areas in the sea. Known also as communal customary rights, these are usually claimed in connection with the ownership of the clan or *keret*. The use or management covering the utilisation, restoration, and protection of the 'traditional management area' is in the form of local wisdom on the coast and sea in the zoning of coastal, island and sea areas by the MHA. These include ordinary or everyday activities and rituals that have been passed down from generation to generation by their ancestors (Pemerintah Provinsi Papua, 2022).

The coastal area was also accommodated in the previous advocacy in 2018 in the Zoning Plan for Coastal Areas and Small Islands (RZWP3K) document for capture fish farming (traditional use), and became a fisheries buffer zone for the Biak region (Pemerintah Provinsi Papua, 2022).



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An aerial photograph of Asai village and its coastline.

Currently, Asai is inhabited by 533 people, and they are very dependent on nature to fulfil their daily needs through farming and small-scale, traditional fishing.

Farmers in Asai have cleared land in the surrounding forests located in the village to grow staple foods, such as caladium, cassava, sweet potatoes, and bananas. Some villagers also grow produce in their gardens. In addition, in 2013, the village government and the community formed a timber furniture group using wood from their forests. The furniture products are sold to communities in other villages around the district.

One of the efforts from the government and the village community to improve their livelihoods is through Koperasi Serba Usaha (KSU, multi-business cooperative) Year Asai, which was formed on June 9, 2009. The ratification of the deed of establishment of the cooperative was issued by the Regent of Yapen Islands on behalf of the State Ministry of Cooperatives and Small and Medium Enterprises of the Republic of Indonesia (Number 148.BH/XXXii-101/2009) dated October 14, 2009, with its primary businesses being animal husbandry, shops, fisheries, plantations and the environment. In 2019, WWF-Indonesia and the Papua Forestry Service supported their timber forest products by strengthening the institution of KSU Year Asai through capacity building of members starting with mapping forest resources, determining rights, and developing business plans. This activity was unfortunately hampered by the regulatory process that took effect in 2021. Together with the KSU, WWF then encouraged the formation of community development by looking at the potential of marine resources and community garden products. Currently, KSU's licence to trade in forest products has expired, and the Asai Community is working with WWF to map out new opportunities with other potential commodities, and to develop fisheries products.

Fishers set out on small fishing boats (spanning 7-12 metres) traditionally handmade in the village to angle or *molo*¹. Fishers typically target demersal fish species like red snapper, rabbitfish, and grouper. In addition to local fishers, those from neighbouring villages and Biak Island also fish in these waters.



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Traditional fishing boats fishers typically use in Asai.

¹ A traditional way of fishing by diving underwater with traditional spearguns (*lastops*) and wooden *molo* goggles. Refer to [Notes](#) (p.20).

SITE GOVERNANCE AND MANAGEMENT



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Reef surveys to collect marine resource potential baseline data.

During initial discussions with the community and customary rights owners, fishers in Asai lamented the changes in the volume of fish catches, duration of fishing, and the distance as they have to go further out to sea to fish, especially citing other fishers' usage of environmentally unfriendly fishing practices using *dopis* (fish bombs), tubal roots, and potassium (poison). Surveys of fish, coral, and macrobenthic resources conducted later on were congruous with the community's observations. From the appalling conditions, concern and initiative arose from the customary rights owners, community members, and the village government to manage their marine resources based on the community's local wisdom through *Tasamu Rawanang* or *sasi* (prohibition), where a portion of the sea is closed off as a no-take zone for a defined period of time. After learning about the success of *sasi* from the community in Menarbu – a village across the waters of Teluk Cenderawasih – the Asai community decided to use this approach.

In April 2022, WWF trained the Asai community to increase their knowledge of the accurate conditions of coastal and marine resources in Asai, and to manage and utilise them sustainably. This activity involved four champions from Menarbu village who had implemented this approach in monitoring fisheries management after *sasi* was implemented in their village. The villagers also collected baseline data (T0) related to the ecological conditions of the coastal area that will be in *Tasamu*.

WWF has been facilitating participatory mapping with Asai as a priority-assisted village for sustainable fisheries management since 2019, by encouraging local communities whose livelihoods depend on fisheries to adopt fisheries monitoring using an Ecosystem Approach to Fisheries



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Participative mapping by the women of Asai during a coastal resource use activity.

Management (EAFM), which eventually led to the implementation of *Tasamu Rawanang*. (See [Appendix B](#) for the *Tasamu Rawanang* management rules outlined in the minutes and ratified on May 28, 2022.)

The community-based conservation approach in Asai is a “ridge-to-reef” approach that empowers the community and builds their capacity to effectively manage natural resources and environmental services from the land/forest (ridge) to the sea (reef).

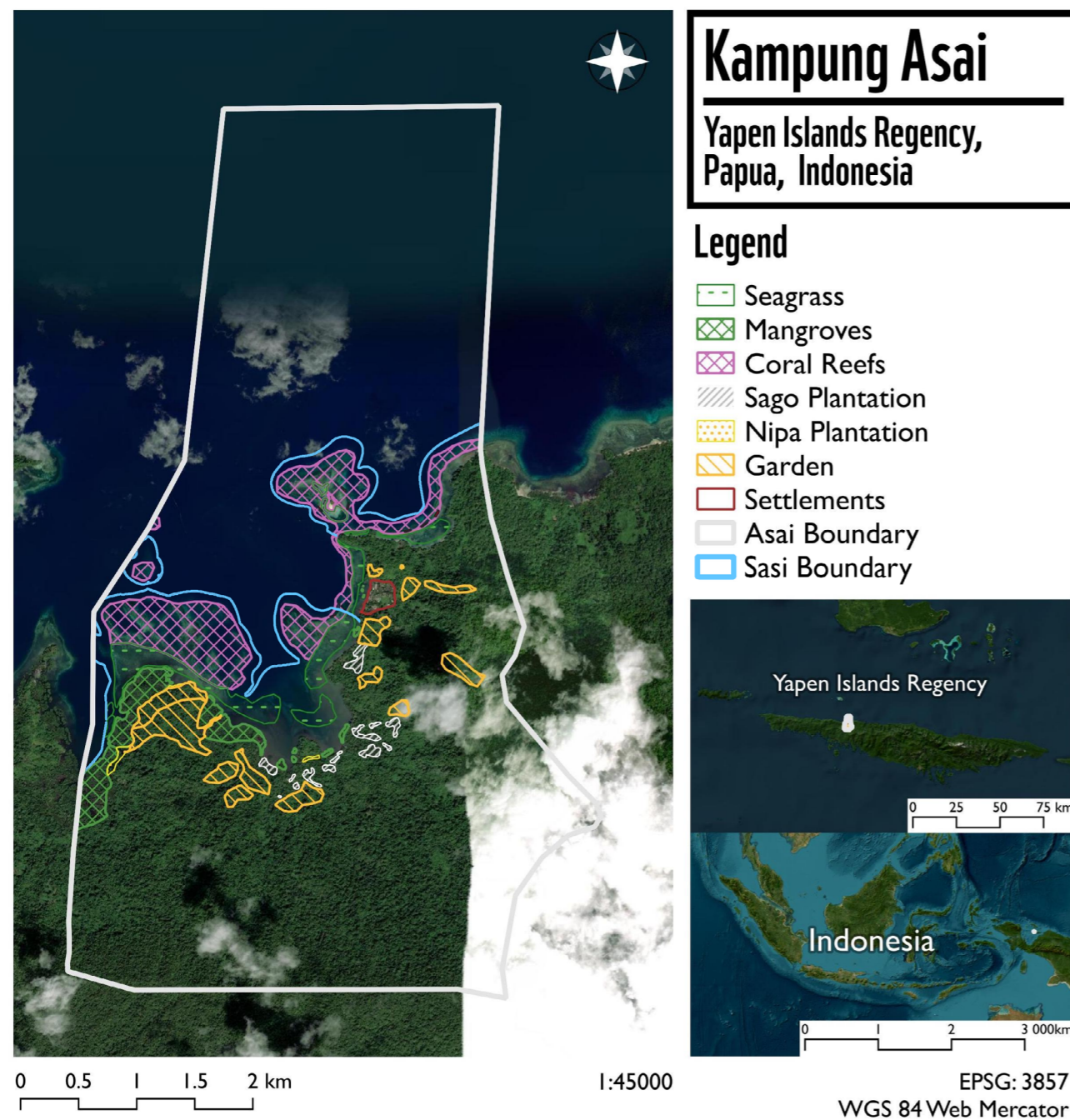
Before establishing *sasi*, the first step was to get Free, Prior, and Informed Consent (FPIC) from the community by discussing the conservation programme with OAK Foundation and Margaret A. Cargill Philanthropies (MACP) in Asai. This involved assessing how the programme would affect the community, identifying important community members, and discussing the village's potential future plans. WWF, together with stakeholders, consulted on the *Tasamu* determination plan with the village, district and regency governments and the church. The process was collaborative and involved everyone in the commu-

nity – the co-management was carried out after deliberation and consensus was reached.²

With the inclusion of the Asai community and related communities in the village, the comprehensive agreement defining boundaries was discussed and signed by key figures from the villages: Rosbori, Aryobu, Karawi, Kaonda, Windesi, and Munggui. The dissemination of critical information pertaining to the entirety of the management plan (such as the location of the protected area and the length of the *Tasamu Rawanang* period) was communicated to ensure that all villagers were well-informed.

The community and the village government agreed together on the *Tasamu Rawanang* area of approximately 284 hectares from the tidal zone out to about 50 metres in the sea, where resource harvesting or fishing activities are prohibited. This restricted area is marked with a *Tasamu* buoy, and beyond it, the unrestricted sea is still relatively close enough for the villagers to go fishing. A fishing restriction was imposed on the *Tasamu* area for a year from August 29, 2022, to August 29, 2023.

² Refer to the minutes of the agreement by the customary rights owners, village government, and several representatives from neighbouring villages, facilitated by WWF-Indonesia Papua Programme in [Appendix A](#).



A map showing Asai's boundaries, ecosystems, and important areas. Map by WWF-Coral Triangle Programme.

The protected area is part of the customary territory belonging to four indigenous clans – the Kewari, Abubar, Puari, and Raubia – and territory ownership is based on customary rights for generations. As customary rights owners signed on to implement *Tasamu Rawanang*, these clans have the authority to make decisions related to fisheries and their sustainable management, and to determine the areas to

be protected. Their collective customary areas cover most of the Asai community's fishing grounds; including the coastal areas of Depawawo-Mangkomamun, Wambrau-Kamare, Kamare-Pirarotui and Pirarotui-Duwiri. (See map of the *Tasamu Rawanang* area above.)

Based on the agreement of the customary rights owners and Asai villagers in

implementing the *Tasamu* closure, a joint prayer was held at the church in accordance with the community's religious beliefs (Christianity). The church's role in implementing *Tasamu Rawanang* encourages each community member in the Asai village and neighbouring villages to obey the rules.

The Development Planning Agency at Sub-National Level (BAPPEDA) appreciates the efforts of the Asai community in building sustainable fisheries resource management through *Tasamu Rawanang*

and encourages the villagers to participate in government programmes managed by related agencies, such as the Fisheries Agency (DKP), and the Cooperative, Industry and Trade Agency (DISKOPINDAG). The head of DKP also expressed willingness to issue a decree ratifying the fisheries groups in Asai Village and assist in the process of obtaining a fisher's card³ for those who work as fishers.

Additionally, the Provincial DKP provided socialisation and support in the form of monitoring equipment to the Asai



The Papua Province Maritime and Fisheries Department with Matius Petrus Sroyer (center, black shirt) presenting equipment for patrolling to the Asai POKMASWAS.

community group called *Tasamu Rawanang* Supervision Team, or POKMASWAS, on November 19, 2023, which included binoculars, a monocular, an underwater camera, a DSLR camera, a tripod, life vests, and a handheld GPS.

Matius Petrus Sroyer S.ST.Pi, Head of Marine and Fisheries Resources Supervision of the Provincial DKP of Papua said that the support was provided because Asai has the potential to be a role model to inspire others by piloting this form of participative, community-based fisheries management as part of the national fisheries framework.

The Head of Windesi District, Simon Bo-

may, has committed to supporting the implementation of *Tasamu Rawanang* closure and opening. During the agreed period in limiting the fish catch area, the district and the Asai village government participated in supervising and controlling the area that has been closed. The district head appealed to all heads in Windesi District to inform the people in each village regarding the *Tasamu Rawanang*.

Stakeholder participation in resource management activities in Asai Village greatly determines the success of fisheries management, policymaking, and area control and monitoring violations related to destructive fishing activities. Hence, the community group *Tasamu Rawanang* Su-

³ Fishers in Indonesia are required to have a fisher's identity card. These cards add them to the database of fishers in Indonesia and qualify them for subsidies and various kinds of assistance.

pervision Team or POKMASWAS was set up based on the village head's decree. The POKMASWAS consists of 23 people. At the end of the project in 2023, POKMASWAS was integrated into the provincial government through the Fisheries Agency of Papua. The POKMASWAS is expected to help monitor *Tasamu* violators, especially fishers from outside the village who may not be aware of the *sasi* implementation. This monitoring is carried out during a pre-determined period, but controlling the area does not fall on POKMASWAS alone but is the responsibility of the entire Asai village community.

The *Tasamu Rawanang* opening procession was carried out on August 29, 2023, marking the start of a two-month harvest. This began with socialisation activities to explain village regulations and convey ini-

tial information to the community regarding the agreement on the *Tasamu Rawanang* opening and closure, which was established through village regulations.



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Regional Secretary of Yapen at an official visit to Asai.

Tasamu Rawanang opening ceremony by a GKI (Indonesian Christian Church Synod) priest.



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According to public perception, the implementation of *Tasamu* has had a significant impact, which was marked during the opening of *Tasamu Rawanang* when



© Novie Sartyawan
Jars of smoked chili sauce that the villagers produce.

the community was able to harvest an abundant amount of fish and sea cucumber. Proof of this positive impact was in the presence of several previously missing fish species having returned to the Asai coastal sea after the implementation of *Tasamu Rawanang*, such as sea milkfish and golden sea cucumber (WWF, UP & KKY, 2023).

Economically, the harvest of fish and marine resources in Asai has paved the way for small businesses the village; one notable micro business registered as Maryuri (name of the river) Asai, is comprised of a dried salted fish group (20 male members) and the smoked fish chilli sauce group (21 female members).

While the villagers did not have formal

Salted fish during the drying process.



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Terianus Ayomi (right) showing how the salted fish group uses large logs to press on the fish prior to dehydrating them.

financial records, they have indicated that since the opening of *Tasamu Rawanang* to November 2023, they had earned a little over Rp. 69 million in profits from sea cucumbers during harvest with an average profit of Rp. 1.5 million to Rp. 8 million per person. Profits from salted fish amounted to over Rp. 750.000 and Rp. 2 million from the smoked chilli sauce.

The income-generating potential and



"After a year of implementing sasi, we can see the potential of what's in our water - what has been brought back by God. My expectation & hope is that our group will continue to operate, producing and marketing products to provide for our families."

Terianus Ayomi, Leader of Community Dried Salted Fish Group in Asai, November 2023.



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Bountiful harvest by an Asai village fisher.

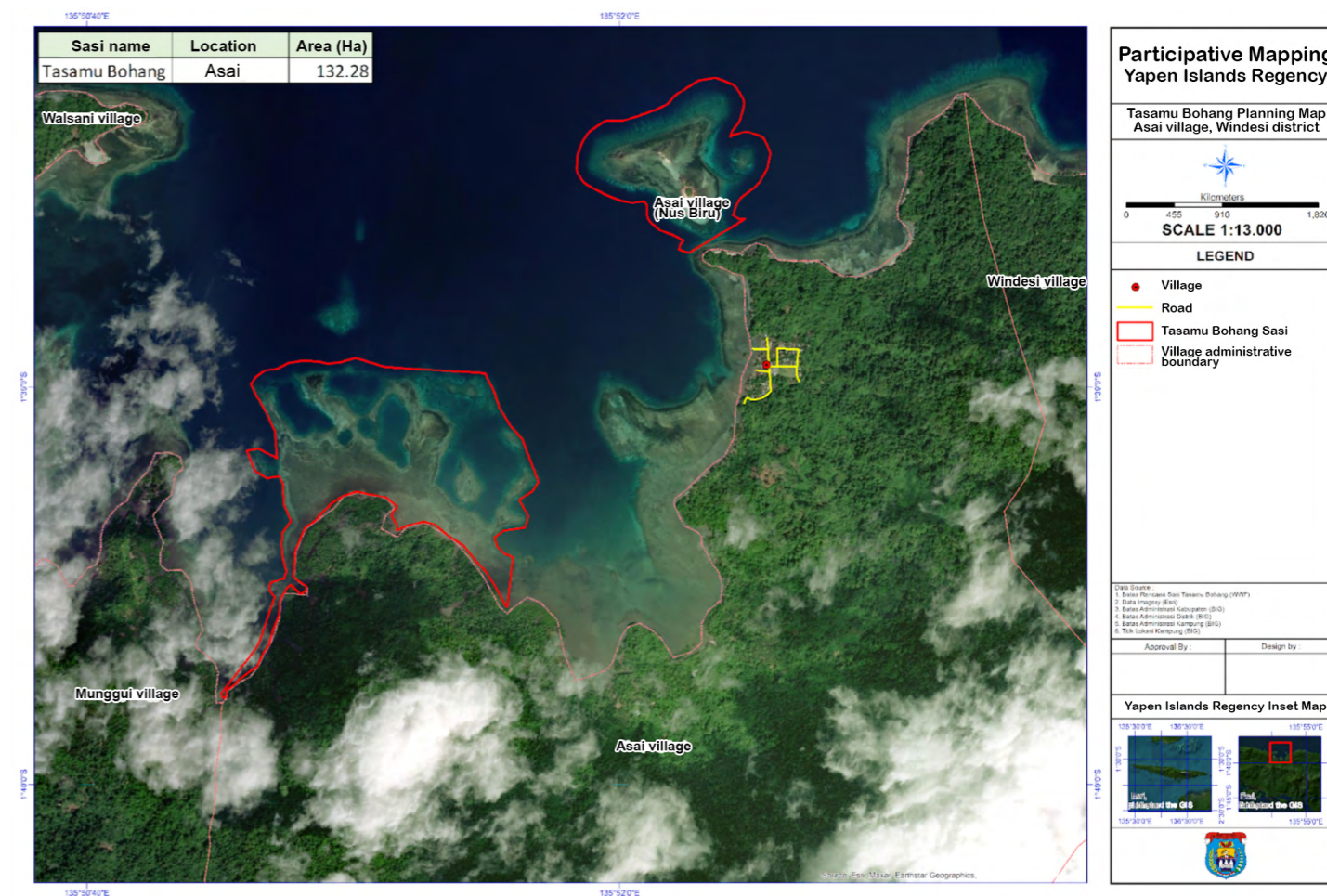
community-based conservation involvement of women are also significant, particularly in areas such as producing smoked fish sauce (*sambal ikan asap*) products, growing chilli and vegetable gardens, and processing salted fish for food security. They transfer their knowledge on developing business, marketing products and ensuring food security to younger women during the production process.

Based on the agreement in the implementation of *Tasamu Rawanang* using an indicative approach and EAFM assessment, Asai rates medium to very good; some of the management efforts that can be improved are:

1. Maintaining existing positions or conditions;
2. Reminding & reinforcing domains and indicators that are good.

This refers to the assessment of indicators in each domain that has not achieved a score of 3 (high), and there are some recommendations for improvement. (Refer to [Appendix C](#) for details.)

After seeing the positive impacts of conducting *Tasamu* for a year, Asai villagers have now agreed to close the sea again for *Tasamu Bohang*, starting in early 2024 with a total area of 132 hectares; including the waters of Nus Biru Island which will be in *Tasamu* for 5 years and Owondau-Hawa Rompi-Munimanuk-Ciampar area in *Tasamu* for one year (refer to the map in the next page). The community has agreed



A map showing *Tasamu Bohang* area (red), encompassing 132.28 Ha. Map translated from original Indonesian version adapted from WWF-Indonesia report.

upon the implementation plan of the next *Tasamu* opening; in particular, regarding the period for harvesting, fishing gear permitted, and the size of nets.

This *Tasamu Bohang* specifically encompasses coral reefs that will be protected from fishing activities and other forms of resource extraction. *Tasamu Bohang* is not applied on the entire waters around Asai, but only in certain parts, especially around coral reefs that are important as buffers for coastlines and marine resources.

ECOLOGICAL & TRADITIONAL VALUES

Asai has three important ecosystems: **mangroves**, **coral reefs**, and **seagrass beds**.

Coral reefs around Nus Biru Island are considered an important habitat for fish breeding (spawning grounds). Similarly, the mangrove ecosystem around Ciampar is an important habitat for various types of molluscs, food sources for the local community.

There are also communities of rare, endangered, threatened and protected (ETP) species and species with limited range, such as the narrow-barred Spanish mackerel or locally known as *tenggiri melayu* (*Scomberomorus commerson*, near threatened) and a limited distribution species, the Pa-



Gambar 4.20. *Pentapodus numberii* (Foto: Husaema 2023)

Papuan whiptail. Adapted from "Fauna Ikan Karang Ekonomis Penting di Perairan Pesisir Kampung Asai, Kabupaten Kepulauan Yapen" (2023).

Mangrove ecosystems act as abrasion barriers for land areas and provide nutrients for spawning, nursery, and feeding grounds for various marine biota. Mangrove trees also hold high economic value for local domestic and industrial purposes; such as building materials, firewood, wood charcoal and raw materials for papermaking. The mangrove ecosystem in the *Tasamu Rawanang* area also has a wealth of gastropod and bivalve biodiversity, some of which are harvested for food.

Seagrass beds have the potential to improve coastal community fisheries in Asai, playing a very important ecological role in the survival of organisms associated with both seagrass and coral reef habitats. Seagrass ecosystems have dynamic properties, with varying conditions in different locations. They act as natural barriers against coastal erosion with root systems that stabilize sediment, remove excess nutrients in runoff from land, and provide habitats for fish and shellfish (Restore America's Estuaries, 2023).

Notably, the condition of mangrove, seagrass, and coral reef ecosystems, as well as fish resources, tend to improve after the closure of *Tasamu Rawanang*. A monitoring team has been formed, but capacity building and provision of facilities are still needed.

However, based on the results of the EAFM analysis, the strict restrictions have limited the community's access to food supply, especially for the women who generally fish around the village. Similarly, because almost all inshore waters are prohibited from fishing activities, fishers tend to end

puan whiptail (*Pentapodus numberii*). Through correspondence with an ichthyologist from the Western Australian Museum, Dr. Gerald R. Allen, it has been confirmed that *P. numberii* is endemic to the western part of New Guinea (i.e. waters of Fakfak-Kaimana and Raja Ampat) and eastern Halmahera. In the coastal waters of Asai, this fish can be caught in several locations, including the Bay Asmes, around Nus Biru Island, and Waikiri Reef.



© WWF-Indonesia/Ruben Bais Rumbiak

Asai villagers on a traditional wooden boat in their waters.

up fishing in other villages' waters and find themselves reprimanded by the area's owners. Future management plans here should consider designating inshore areas for fishing activities.

The *Tasamu Rawanang* area is part of the customary area of the local community and an important source of livelihood for them. There is also an ancestral history that is deeply intertwined from the present situation – the management of customary rights is determined by the clan of the customary rights owner. With the awareness of the concept of sustainable fisheries and in consideration of the future, the customary rights clan leaders agreed to protect their local areas, the *Tasamu Rawanang* and *Tasamu Bohang*, to ensure natural resources are used sustainably. This activity is supported by the entire Asai community, village government and representatives of neighbouring village communities. Through the application of *Tasamu Rawanang* and *Tasamu Bohang*, the protection of mangrove, seagrass, and coral reef ecosystems can be enhanced.

According to Paulina Ayomi, a well-respected village official, the concept of *Tasamu* had been applied for generations for over a hundred years, where villagers would pray and bless plant harvests before applying *sasi*. However, it had only been used for terrestrial areas, and the *Tasamu Rawanang* marks first time *sasi* is used for marine resources in Asai. This change was inspired by a recent visit from Menarbu villagers, who had also successfully implemented *sasi* in their waters.

POTENTIAL THREATS TO BIODIVERSITY

Most threats to the marine ecosystems in Asai come from human activities. Destructive fishing has been a long-standing issue, through the use of tubal roots and potassium, as well as fish bombs. These fishing activities damage coral reef habitats around Asai. Additionally, the excessive use of mangroves as fuel wood and building materials for houses poses a threat to biodiversity. Coastal fisheries are highly dependent on the optimum functioning of all three ecosystems; any damage to mangroves, seagrass beds, and coral reefs will impact fish and marine resources.

These threats originate both locally and from other villages within the Yapen Islands Regency and other districts (Biak Numfor). While Asai fishers can reprimand those from neighbouring villages who commit violations, they dare not confront and reprimand

fishers from Biak. Addressing violations remains a task for the POKMASWAS. However, aside from verbal reprimands, they are limited to reporting to the fisheries agency at the district and provincial level.

In contrast to human derived threats, the only natural threat to the ecosystems in Asai comes from strong waves, which tend to break corals during windy seasons.

There is currently no plan for large-scale fisheries development in this region so any future damage is unpredictable. In RZWP3K (Regional Spatial Plan for Coastal and Small Islands), Asai is a designated traditional fishing zone, so traditional management is still applied in this region. However, area-based management measures have been developed with reference to EAFM corrective action recommendations.

CONCLUSION

In terms of socio-economy, the application of *sasi* has provided the Asai villagers with economic opportunities in the fisheries sector, through selling fish and fish products.

Based on EAFM studies and studies by fisheries students from Papua University (UNIPA), conclusions can be drawn that *Tasamu Rawanang* and *Tasamu Bohang* provide natural resource management that leads to fisheries recovery and positive benefits for marine biodiversity. Furthermore, the traditional use of fishing gear by the community and their fleet support sustainable fisheries management, based on the "Social and Economic Domain" from the Asai EAFM report and the "Fauna Ikan Karang Ekonomis Penting Di Perairan Pesisir Kampung Asai, Kabupaten Kepulauan Yapen" (Economically Important Coral Fish Fauna in the Coastal Waters of Asai Village, Yapen Islands Regency) book.

Using *Tasamu Rawanang*, a traditional way that allows the Asai community to manage and protect the sea and resources, together with the provincial government and the church, has brought positive changes to the community. "Sasi can fulfil the needs of our community. When people *molo*, there are still lots of fishes. The fish is always there – you can catch plenty in just one day – and then people can go to the market and sell the fish. The people are happy because after closing *sasi* for a while, we are plenty blessed with the great harvest yields from the sea," imparts Paulina Ayomi on their *Tasamu* approach to co-managing fisheries sustainably.

Asai villagers, Menarbu champions, and Ruben Rumbiak (navy V-neck shirt), WWF-Indonesia's Community Development Officer for Yapen.



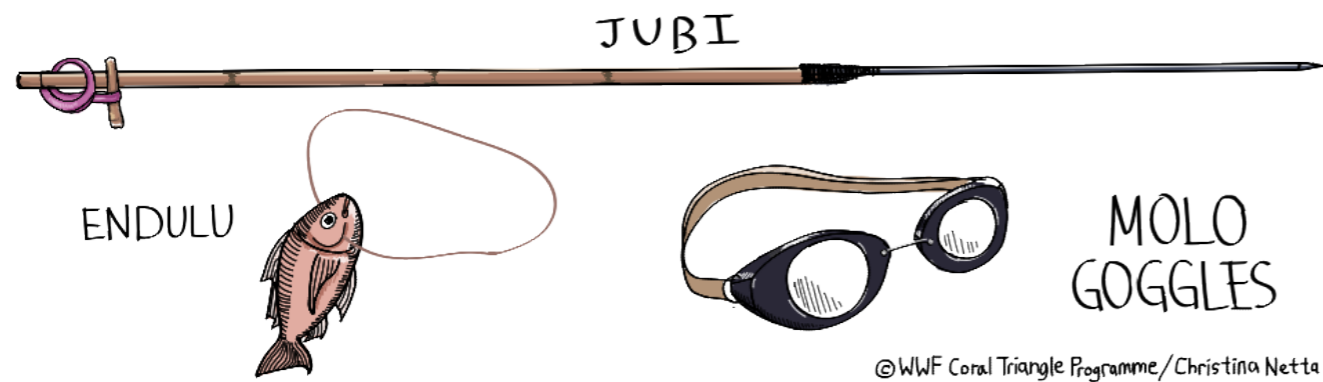
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Paulina Ayomi during a meeting with the Papua Province Maritime and Fisheries Department in Biak.



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NOTES



(Above) Diagram showing molo tools. (Below, right) Lion Puari, POKMASWAS treasurer, wearing kaca molo.

1. **Molo** is a traditional method of fishing in Papua, where fishers dive (with traditional goggles called kaca *molo*) underwater a few minutes at a time, catch fish with a tool called a *jubi* or *lastop* (traditional spear-gun), and string caught fish on *endulu* (fish wire).

2. A video showcasing *Tasamu Rawanang* in Asai is also available via bit.ly/AsaiTasamuRawanang or the QR code below.



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APPENDICES

Appendix A. SK Pokmaswas (in Indonesian)



**PEMERINTAH KABUPATEN KEPULAUAN YAPEN
DISTRIK WINDESI
KAMPUNG ASAI**

**SURAT KEPUTUSAN KEPALA KAMPUNG (SK)
NO: SK/01/K-ASAI/V/2021**

Tentang

**PEMBENTUKAN TIM PENGAWASAN KELAUTAN DAN PERIKANAN KAMPUNG ASAI
DISTRIK WINDESI KABUPATEN KEPULAUAN YAPEN**

Menimbang : a. Bahwa dalam mengamankan potensi sumber daya perikanan maka perlu dibentuk kelompok masyarakat pengawas kelautan dan perikanan (POKMASWAS)

b. Sehubungan dengan yang dimaksud pada huruf (a) maka perlu dibentuk kelompok masyarakat pengawas kelautan dan perikanan di Kampung Asai Distrik Windesi Kabupaten Kepulauan Yapen.

Mengingat :

1. UU No. 31 Tahun 2004 tentang Perikanan sebagaimana telah diubah dengan UU Nomor 45 Tahun 2009 tentang Perikanan (Lembaran Negara Republik Indonesia Tahun 2009 nomor 154);
2. UU No. 27 Tahun 2007 tentang pengelolaan Wilayah Pesisir dan Pulau-Pulau Kecil sebagaimana telah diubah dengan UU No. 1 Tahun 2014
3. UU No. 32 Tahun 2014 tentang Kelautan;

MEMUTUSKAN :

Menetapkan : KEPUTUSAN KEPALA KAMPUNG ASAI TENTANG PEMBENTUKAN DAN PENETAPAN KELOMPOK MASYARAKAT PENGAWAS KELAUTAN DAN PERIKANAN KAMPUNG ASAI

KESATU : Pembentukan dan Susunan Pengurus Kelompok Masyarakat Pengawas Kelautan dan Perikanan Kampung Asai Distrik Windesi Kabupaten Kepulauan Yapen sebagaimana dalam lampiran keputusan Kepala Kampung ini.

KEDUA : 1) Memberikan tugas dan wewenang kepada pengurus Kelompok Masyarakat Pengawas Kelautan dan Perikanan Kampung Asai Distrik Windesi Kabupaten Kepulauan Yapen untuk melaksanakan tugas sesuai dengan petunjuk dan peraturan yang ada:

- KETIGA** : Segala biaya operasi kegiatan Kelompok Masyarakat Pengawas Kelautan dan Perikanan Kampung Asai berasal dari kas Lembaga, bantuan dari pihak yang sah dan tidak mengikat, serta bantuan dari Pemerintah Kampung
- KEEMPAT** : Apabila kelompok dimaksud melakukan tindakan yang merugikan kepentingan umum maka pemerintah kampung mempunyai hak penuh untuk menggantikan kelompok/individu bersangkutan.
- KELIMA** : Keputusan ini berlaku sejak tanggal ditetapkan, dan akan diadakan perubahan sebagaimana mestinya apabila di kemudian hari ternyata terdapat kekeliruan atau kekurangan.

Ditetapkan di : Kampung Asai
Pada tanggal : 28 Mei 2021



Lampiran Keputusan Kepala Kampung Asai

Nomor : 01/K-ASAI/V/2021

Tanggal : 28/MEI/V/2021

Tentang : Penetapan Susunan Pengurus

PokMasWas Kampung Asai 2021 – 2026

**SUSUNAN PENGURUS POKMASWAS KAMPUNG ASAI DISTRIK WINDESI KABUPATEN
KEPULAUAN YAPEN
MASA BHAKTI 2021 -2026**

Ketua : Terianus Ayomi

Sekertaris : Simeon Raubia

Bendahara : Lion Puari

Anggota :

Alvius Puari	Yulianus Matu	Yunus Puari	Yakop Puari
Nelson Dedifu	Absalom Raubia	Yusak Puari	Matheis Kewari
Lewi Raubia	Frans Puari	Paulus Arompui	Yermias Arompui
Wilgo Ayomi	Abraham Puari	Agus Matu	Matius Matu
Yesaya Raubia	Lepinus Puari	Karel Raubia	Nataniel Puari

**Appendix B. Tasamu Rawanang Rules****1. Rules during the closure of *Tasamu Rawanang***Activities that can be done in the *Tasamu* area.

- Boats must pass without stopping except in emergencies.
- Scientific research that does not take resources in the *Tasamu Rawanang* area

Things prohibited in the *Tasamu* area

- Fishing, molo, having loose nets, using compressors, bombs, tubal roots (*Bobatu*), potassium poisoning, taking any kind of marine life in the *Tasamu Rawanang* area

2. Harvest rules during open *Tasamu Rawanang*

- Do not harvest with fishing equipment such as compressors, potassium, bombs, nets, petrification, and others that damage the environment)
- The size of the biota taken is Medium – Large and not in a state of spawning / ready to spawn.

3. Special rules for the Monitoring Team

- Do not take arbitrary and unilateral actions in taking resources at the location of the *sasi* (*Tasamu Rawang*).
- If there a violation occurs, the monitoring team of the *Tasamu Rawanang* area is obliged to provide information to the clan, church, and village institutions for the “sanctions” procession.
- Consuming alcoholic beverages is prohibited when performing supervisory duties
- Do not take physical action against violators in the location of the *Tasamu Rawanang*
- If you do not comply with the rules, you will be dismissed from the supervision team.

Appendix C. Recommendations by *Domains***1) Fish Resource Domain:**

- Setting the minimum size that can be caught
- Socialisation of length maturity (Lm) of fish species that are widely caught around the waters of Asai
- Socialisation about the benefits of parrot fish and regulations on ETP species

2) Habitat and Ecosystem Domain:

- Protection of mangrove ecosystems that have begun to recover (characterised by a high density of seedlings and saplings)
- Strengthening local wisdom in the use of resources in and around mangrove forests
- Protecting and planting species whose density has begun to decline such as *Aegiceras corniculatum* and *Sonneratia alba*
- Protection of coral reef ecosystems
- Strengthening local wisdom
- Providing livelihoods alternative
- Adaptive management

3) Fishing Technology Domain:

- *Management of KUSUKA, fishermen's cards, and technical training for fishermen;*

4) Social Domain:

- Strengthening groups/clan representatives/monitoring teams of *sasi* managers
- Assistance (public awareness, counselling and capacity building) of the community in fish empowerment management
- Review after opening *sasi*: certain areas are closed again, and waters closest to the village are opened for environmentally friendly fishing activities (angling)
- Increased supervision and law enforcement against the use of destructive and dangerous fishing gear

5) Economic Domain:

- There needs to be intense assistance to optimise the opening of *tasamu rawanang/sasi* to increase the benefits received positively (buying productive assets, not only consumptive goods), business diversification and alternative livelihood
- Assistance in making products (diversifying processing) and managing PIRT documents, certificate of fisheries quality lab results so that products can be absorbed in the market, Training and mentoring financial management
- Socialisation about savings in the form of money and goods
- Marketing cooperation with live fish entrepreneurs and processed food traders, data collection of fisheries actors and registration of KUSUKA, training and assistance in financial management
- Socialisation on savings in the form of both money and goods.

6) Institutional Domain:

- Assistance and law enforcement by security authorities
- Routine supervision and monitoring of habitat/ecosystem conditions and fish resources
- Routine patrol of the area involving monitoring teams
- Delegation of supervisory authority from the Provincial DKP to the District Fisheries Office, Establishment of POKMASWAS
- Positive recognition of local wisdom in law (for example in Regencial regulations)
- Institutional assistance in the preparation of retrieval mechanisms decision and implementation, activating the environmental violation reporting system in the community, monitoring the implementation of management plans and planning assistance for the preparation of RPP, assistance for capacity building, activating coordination groups (eg. WhatsApp) between related agencies and fisheries communities and *sasi* managers.

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