CASE STUDY

THEME 3:
Land rights and sustainable land/ resource use

How secure tenure rights encourages sustainable land use by communities in ways that protect and restore

Through deluge and drought: A village overcomes

A case study of Trapeang Rumdenh Village, Kbal Trach Commune, Krakor District, Pursat Province, Cambodia

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The village of Trapeang Rumdenh, located in Krakor District, Pursat Province, Cambodia, covers approximately 1,400 hectares, and is home to 407 households, or 1,651 people. The village's predominantly Khmer population makes their living from agriculture, growing rice, vegetables and fruit trees, aside from fishing in the Tonle Sap Lake, located north of the village.

Climate change is making Trampeang Rumdenh increasingly vulnerable to flooding and drought.

The village is located in a floodplain, which puts it at greater risk of flooding. Besides its location, changes in rainfall patterns and increasing deforestation are resulting in more frequent and more destructive flooding. For instance, the slow-onset flood from Tonle Sap which occurred in October to November 2021 destroyed the village's entire rice crop.

Key Messages

- Diversification of income sources is vital. This can help to protect people from the impacts of climate change, such as crop failure or loss of livestock.
- The lack of funding and support for climate change adaptation is a major challenge that the central government must address by allocating more resources to the government agency responsible for disaster management as well as to local organizations so that they can better respond to the needs of vulnerable people affected by climate change.
- As part of the process of securing land tenure security, the community must begin to establish and document proof of their occupancy and use of the land.
- The community must consider forming a community land trust -- a legal entity that takes ownership of, or authority over, a piece of property on behalf of a community. This can help to prevent land from being sold or developed by outsiders without the community's prior knowledge and consent.

At the same time, the village has experienced more frequent droughts. This has made it difficult for farmers to irrigate their crops, and has led to crop failures. The drought has begun to occur in June to September – the traditional period of wet rice production. It is notable that in the Three-Year Rolling Investment Plan Book (3IP) of Kbal Trach commune, which is located in Krakor District, there is no provision for a water irrigation system to meet the water shortage that farmers in many villages anticipate even during the rainy season from 2023 to 2024.

Table 1 summarizes the climate risks that affect Trapeang Rumdenh Village, along with their months of occurrence, and the areas or land use that are most affected:

The link between climate vulnerability and tenure status

Trapeang Rumdenh Village consists of three Areas, which are distinguished not just by their topographic features but by the prevailing tenure status of their population and their exposure to climate change impacts.

Table 1. Climate risks in Trapeang Rumdenh Village, their period of occurrence, and sectors affected

Hazard	Month	Area or Land Use
Flooding	October-November	Rice fields (Area 1)
Drought	June-September	Rice fields (Areas 1 and 2)
Strong winds	Mid-April to early June	Crops, homes, and property in Area 3

Area 1 is located in the floodplain and in the transition zone of the Tonle Sap Biosphere Reserve outside of the buffer and core zones.

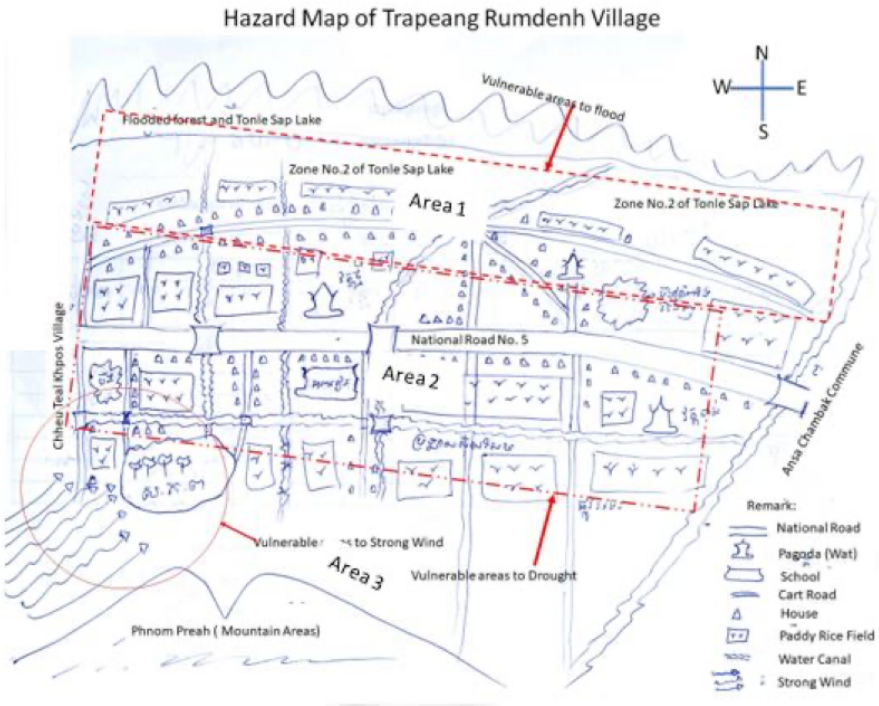
Most people living in Area 1 do not possess formal land titles.[1] This situation impacts on their capacity to recover from, adapt to, and prepare for flooding and erosion. More generally, the lack of formal land titles makes it difficult for them to access credit, sell their land, or pass it on to their children. It also makes it difficult for them to protect their land from encroachment or other threats.

In Area 2, which is located on higher ground, more people have formal land titles. However, these landowners use their land for purposes other than agriculture. This is because they think that their land, having been deforested and overgrazed and is prone to drought, is no longer fit for food production. Thus, they opt to sell or transfer their land to others, or to use it as collateral to secure loans from banks.

In Area 3, which is located in the mountains, most people manage and use the forest communally. However, this practice has not been formally recognized by the government in the form of a community forest management agreement.

In general, the lack of secure land tenure is a major challenge for people in Trapeang Rumdenh Village. It makes them more vulnerable to climate change impacts and makes it difficult for them to adapt to

[1] Sok, S., & So, T. (2019). Land Tenure in Cambodia: Challenges and Opportunities. Phnom Penh, Cambodia: Oxfam in Cambodia.



these changes. The government needs to take steps to improve land tenure security in the village, such as issuing formal land titles and recognizing customary land tenure. This will help to protect people's land rights and make them more resilient to climate change.

Response by the community

The Community Forest (CFo) of Trapeang Rumdenh is taking steps to respond to climate change. Each year, the CFo plants 200 small trees in the forest land. These trees help to absorb rainwater and reduce flooding.

In addition, the villagers engage in a variety of activities to generate income and to make up for their lost rice yields due to climate change. From February to March, they hunt for insects and spiders, which they sell to middlemen, earning for themselves between 5 US Dollars and 10 US Dollars a day. From April to June, they collect wild mushrooms, from which they make 5 US Dollars a day. From August to September, they gather wild bamboo.

Too little and too much rain: Two faces of climate change

Moa Bol, 64, is a farmer and chief of Community Forestry in Trampeang Rumdenh village. He recalls that some years ago, farmers could harvest one to two tons of rice per hectare even while they were dependent on rainwater. Recently, however, there has been too much rain in the months of September and October, causing flooding which destroys their crop.

Phal Nhem, 65, is a farmer in Trapeang Rumdenh. He relates that he and other farmers in the village used to be able to produce two tons of rice per hectare even without irrigation. In recent years, the supply of water has been severely reduced. As a result, his rice crop has been slow-growing, compared to his crop last year, which grew to as high as his knees.

The other villagers also collect wild vines from the community forest to make handicrafts, which they sell for around 2.5 US Dollars per basket. This helps to supplement their income and cope with the challenges of climate change.

Finally, some of the villagers have migrated to Phnom Penh City or to other provinces to work as construction workers. Others have migrated abroad, such as to Thailand, Malaysia, and Korea. This is a last resort for many people, but it is a way to earn a living and support their families.

Responses by authorities

The Village Disaster Management Committee (VDMC) is responsible for managing disaster response at the village level. The VDMC is composed of local volunteers who are trained to respond to disasters, such as floods, droughts, and storms.[2] They work closely with local authorities and non-government organizations (NGOs) to coordinate disaster response efforts and provide assistance to affected communities.[3]

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[2] Sok, S., & So, T. (2019). *Land Tenure in Cambodia: Challenges and Opportunities.* Phnom Penh, Cambodia: Oxfam in Cambodia.
[3] International Land Coalition. (2021). *Land Tenure and Climate Change in Cambodia*. Phnom Penh, Cambodia: International Land Coalition.

The National Committee for Disaster Management (NCDM) is responsible for responding to any risk or disaster response inside of Kbal Trach commune. However, the NCDM has limited resources to respond to the needs of vulnerable people affected by climate change.

The Three-Year Rolling Investment Plan Book (3IP) of Kbal Trach commune for 2023 to 2024 does not include any activities or budget for responding to climate risk in all of the villages of the commune. This means that the NCDM will need to find other sources of funding to support their response efforts.

Trapeang Rumdenh village has proposed to prioritize the building of a watchtower (cottage) for patrolling the forest in the community forestry of Trapeang Rumdenh. This is an important activity to help protect the forest from deforestation, which is a major contributor to climate change. However, no institution or organization has yet expressed interest in supporting this action plan.

The lack of funding and support for climate change adaptation is a major challenge facing the authorities in Kbal Trach commune. The government needs to provide more resources to the NCDM and other local organizations so that they can better respond to the needs of vulnerable people affected by climate change.

Recommendations

Strengthening land tenure security

- The community must form a community land trust. A community land trust is a legal entity that takes ownership of, or authority over, a piece of property on behalf of a community. This can help to prevent land from being sold or developed by outsiders without the community's prior knowledge and consent.
- Members of the village can begin documenting their land rights by establishing proof of their land use, such as planting trees or building a house.
- Everyone in the village must be encouraged to get involved. This can help to build support for land rights and to make it more difficult for people to be dispossessed of their land.

Practicing sustainable land management

- Planting trees helps to prevent soil erosion and improve water retention. Trees also provide shade, which can help to reduce the risk of drought.
- Overgrazing must be reduced as it can damage the soil and make it more vulnerable to erosion. It is important to manage grazing so that it does not damage the land.
- More sustainable agricultural practices must be adopted. There are a number of sustainable agricultural practices that can be used to reduce the impact of agriculture on the land. These include using cover crops, crop rotation, and intercropping.

Building resilience to climate shocks

- Diversification of income sources is vital. This can help to protect people from the impacts of climate change, such as crop failure or loss of livestock.
- Building a food supply buffer is important to help ensure that people have food to eat during times of food shortage.
- A plan should be put in place so that village members know what to do in the event of a disaster, such as a flood or drought. ■

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CASE STUDY

Peasants and fisherfolk adapt and innovate in the midst of agrarian conflicts and natural disasters

A case study of the coastal village of Ujung Baji in Takalar Regency, South Sulawesi, Indonesia

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Ujung Bagi is one of six villages that comprise the Sanrobone sub-district in Takalar Regency, in the South Sulawesi Province of Indonesia.

Until the end of the 1970s, Ujung Bagi was characterized by vast mangrove forests, from which the villagers gathered shrimp, crabs, and fish for food. The women made a living from weaving mats out of the leaves of *Pandanus tectorius*, a palm-like tropical evergreen tree that used to grow abundantly in the mangrove forests. In the early 1980s, local elite personalities, including a group called the *Karaeng*, took control of much of the village land, especially the mangroves, cutting these down to make ponds, which they sold to local officials and outsiders.

According to a spatial count conducted by the South Sulawesi team of the Konsorsium Pembaruan Agraria (KPA), or Consortium for Agrarian Reform,[1] around 92 hectares of ponds in Ujung Bagi village are

[1] KPA is a Jakarta-based organization of peasants, women, and indigenous people working in Indonesia.

Key Messages

- Shoreline change that is caused primarily by human activities, such as land clearing and mineral extraction in the ocean and on coastal land, is manifested by coastal abrasion or land accretion. This phenomenon has emerged as a major and serious threat to the safety and livelihood of coastal communities like the village of Ujung Baji.
- Sustained sea level rise will exacerbate the impacts of shoreline change and worsen the already threatened lives and livelihoods of coastal communities like Ujung Baji.
- The community in Ujung Baji is working to save their coastline by planting mangroves. However, its efforts might not be enough to withstand the effects of severe abrasion. The problem requires change of a higher order. The National, Provincial, Regency, and relevant Ministries (Ministry of Energy and Mineral Resources [ESDM] and the Ministry of Marine Affairs and Fisheries [KKP]) must immediately review, and if possible, cancel existing and planned sand mining concessions, which have been the culprit of the degradation of coastlines.
- At the same time, the government must enforce its agrarian reform laws, which are central to social justice, but are also indispensable to adapting to natural disasters. Research shows that 23 million people in coastal Indonesia are expected to face annual flooding by 2050. Disasters will destroy homes, cultivated lands, and villages/cities, resulting in serious agrarian conflicts as tens of millions of people lose their livelihoods and are forced to flee their villages.

controlled by non-residents, such as the former Regency of Takalar, Perusda, and wealthy residents of Makassar, the capital of South Sulawesi province.

Peasants and fisherfolk were lured by unscrupulous businessmen into selling their land or land use rights during the dry season, when their rainfed farms were generally unproductive. As a result, the residents of Ujung Bagi have been reduced to working as pond laborers and guards, among others.

Following the destruction of the mangrove forests, the income of women fishers from collecting shellfish and crabs has been drastically reduced. Fewer women are engaged in mat weaving because the loss

of the mangrove forests has reduced the availability of the *pandanus* plant – the raw material for the mats.

Apart from the impact on their livelihood, the residents of Ujung Bagi face threats posed by a "changing shoreline." The coastal area of Takalar Regency, of which Ujung Bagi is part, is in a precarious state. Research shows that 18 kilometers of Takalar's 56-kilometer coastline are highly vulnerable, and that this is due to in large part to "shoreline change" (*Eka and Sakka, 2013*).

Shoreline change is caused primarily by human activities, such as land clearing and mineral extraction in the ocean and on coastal land. During shoreline changes, parts of the coastline either sustain abrasion or erosion, or else undergo accretion and sedimentation.

Abrasion is the process whereby coastal land areas are eroded as a result of the destructive energy of ocean currents and waves. Meanwhile, accretion refers to the formation of new land, as well as the siltation of waters, that is caused by an increase in the amount of sediment carried by ocean currents and which get deposited in the area.

Changes in the coastline will clearly have an impact on the use of the affected areas. Abrasion will result in the narrowing of the area and could endanger it. Millions of people living on the coast have had to migrate amid increasingly limited land and changes in social, economic, cultural, and spiritual structures. Accretion and sedimentation will cause issues, such as land area expansion, siltation of the harbor, and, worst of all, siltation of the estuary mouth, which can cause flooding around the estuary. Both accretion and abrasion will have negative effects on the environment, economy, and society (*Triatmodjo, 1999; Putra et al., 2016, Bau Ashary, 2022).*

Sea-level rise: Natural or man-made?

Shoreline change is one of the determinants of coastal vulnerability. It can also be used as an indicator of sea level rise (*Amandangi, 2012; Eka et al.,2018*).

The sea level rise in Takalar Regency waters is increasing by six millimeters to 6.5 millimeters per year. This is higher than the sea-

level rise in the waters of Java, of four to five millimeters per year. The annual relative sea-level rise along the Galesong coast ranges between 6,203 millimeters and 6,274 millimeters. The Mappakasunggu-Mangarabombang sub-district on Takalar's southern coast has a higher sea-level rise than the northern coast of Takalar Regency. On the other hand, the Sanrobone sub-district has both the highest accretion and abrasion rates (*Eka and Sakka, 2013*).

Because of the difference, sediment is transported to the south and to the north, resulting in abrasion and accretion at this location. Furthermore, based on the findings of the study, it appears that sediment accretion in Sanrobone and Mappakasunggu sub-districts is influenced not only by wave transport but also by sediment input from river mouths near the accretion site, which is what makes accretion in these two sub-districts greater than that found in Mangarabombang sub-district (*Dwi and Nurjannah, 2018*).

According to the findings of research in the Sanrobone sub-district, the largest abrasion value was recorded in 2016 to 2019, at 90,704 meters, and the largest accretion value was recorded in 2013 to 2016, at 75,011 square meters. Meanwhile, the total coastline changes from 2013 to 2022 consisted of 73,581 square meters of abrasion and 61,513 square meters of accretion *(Bau Ashary Nasir, 2022)*.

Table 1. Changes in the coastline length of the Sanrobone Sub-district

Year	Length (meter)
2013	3,738.05
2016	5,062.80
2019	4,859.05
2022	3,247.13

Coastal and small island threats are related not only to highly exploitative spatial development policies but also to global warming as one aspect of climate change. The rise in global temperature that causes melting ice at the North and South Poles, subsequently resulting in rising sea levels, will undoubtedly cause a disaster in the future. According to the Copernicus Climate Change Service (C3S) report, the average global surface air temperature reached 16.38 degrees Celsius (°C) in September 2023. That temperature is 0.93°C above the average September temperature from 1991 to 2020, making September 2023 the hottest September ever recorded globally. It was also reported that the global average temperature from January to September 2023 was 0.52°C higher than the average temperature from 1991 to 2020. Even when compared to the pre-industrial period of 1850 to 1900, the global average temperature in January to September 2023 has risen by about 1.4 degrees Celsius. Along with this phenomenon, the ice at the South Pole is melting rapidly, contracting by nine percent below average each month, and causing the decline of the Antarctic Sea ice extent to a new low in 2023.

The European Commission's Emissions Database for Global Atmospheric Research (EDGAR) reported that global greenhouse gas emissions (GHGs) would reach 53.79 gigatons of carbon dioxide equivalent (Gt CO2e) in 2022, with China, the United States, India, the EU27, Russia, and Brazil being the world's top six GHG emitters. Notably, EDGAR made the forecast that Indonesia would rank as the seventh largest emitter, releasing 1.24 Gt CO2e. This figure is an increase from the previous year's figure of 1.12 Gt CO2e.

In a 2022 report of the United Nations Children's Fund (UNICEF), titled "Children Displaced in a Changing Climate," Indonesia was listed among the 10 countries with the highest number of children displaced by extreme weather. Between 2016 and 2021, 960,000 Indonesian children were thus displaced, landing the country on the eighth spot in the top 10, led by the Philippines, India and China.

From January to November 2023, the National Disaster Management Agency (BNPB) recorded 3,383 natural disasters. With 949 incidents in the previous 11 months, extreme weather became the most common natural disaster, followed by floods with 942 incidents. Other natural disasters that occurred in Indonesia until mid-November 2023 included 813 incidents of

forest and land fires. There have also been 472 landslides, 156 droughts, 25 earthquakes, 24 tidal waves/abrasions, and two volcanic eruptions. All of these disasters resulted in the suffering and displacement of 6.99 million people, the injury of 5,572 people, the death of 213 people, and the disappearance of 15 people. The disasters also caused damage to 27,440 houses, with 3,504 severely damaged, 4,264 moderately damaged, and 19,672 lightly damaged. The disaster also damaged 748 public facilities, including 364 educational facilities, 331 religious' facilities, and 53 health facilities (*katadata.co.id, 2023).*

Geographically, the highest number of natural disasters occurred in West Java (603 events), Central Java (490 events), South Sulawesi (212 events), East Java (197 events), and Aceh (193 events) until mid-November 2023.

Coastal areas are located below sea level, making them vulnerable to disasters caused by rising sea levels, which can inundate land and even cause sea floods. The latter refers to tidal floods that will gradually submerge coastal areas and small islands in various parts of the world, including Indonesia, particularly South Sulawesi.

According to a Climate Central US study, 23 million people in coastal Indonesia are expected to face annual flooding by 2050, a five-fold increase from previous estimates due to climate change this century. Furthermore, satellite data collected by Institut Teknologi Bandung (ITB) or Bandung Institute of Technology, over the last 20 years, predict that sea-level rise in Indonesian waters is estimated to be three to eight millimeters per year. Meanwhile, land subsidence is expected to be more severe, ranging from one to 10 centimeters per year. In fact, in some areas, the decline has been as high as 15 to 20 centimeters per year. Falling groundwater levels, rising sea levels, destruction of mangrove ecosystems, and exploitative development supported by irresponsible legislation that does not prioritize people or ecological sustainability, such as the Job Creation Law (UU Cipta Kerja), will exacerbate the community's current and future vulnerability.

The impact of sand mining

Flooding and abrasion

Flooding and abrasion along the Takalar coast, including in Ujung Baji, were exacerbated by land and sea sand mining from 2017 to 2021 to meet Makassar city's infrastructure and reclamation needs. In particular, the Sangkarrang/Spermonde block sea sand mine resulted in abrasion which has severely affected at least 2,160 families in six villages in Takalar Regency. In addition, abrasion disasters have affected 1,100 families, primarily in the villages of Ujung Baji and Laguruda (*CakrawalaInfo,2020*).

Ujung Baji has become a target for sand hunters pretending to be pond developers. Residents of the village have reported that from 2017 to 2018, 140 trucks routinely carried off sand material from the village every day.

Sand mining has been propping up numerous development projects in Makassar, including reclamation projects, the construction of business centers in the Provincial Strategic Area, and supplying the material requirements of the National Strategic Projects (PSN). Notwithstanding its documented negative impacts, another sea sand mining concession covering an area of 9,327.84 hectares in Takalar and Ujung Baji village, Sanrobone sub-district is planned for the sea sand mining zone by virtue of the Provincial Regulation on the Zoning Plan for Coastal Areas and Small Islands RZWP3K and the Regional Regulation on the Regional Spatial Plan - South Sulawesi Provincial Spatial Plan No. 03 of 2022.

Furthermore, the re-establishment of the Sangkarrang archipelago, which borders Takalar Regency, as a mining business license concession governed by a highly capitalistic structural spatial policy will put tens of thousands of fisherfolk and peasant families along the district's coast in jeopardy.

Decline in seaweed production

South Sulawesi Province is Indonesia’s foremost seaweed producer by volume, supporting the livelihoods of over 35,000 coastal households

(*BPS, 2020*). The province produces 3.66 million tons of seaweed per year, accounting for more than one-third of Indonesia's seaweed volume, 11 percent of the global supply, and more than 20 percent of the global supply of seaweed-derived hydrocolloids.[2]

Luwu, Takalar, Wajo, and Pangkep were the four largest seaweed-producing regencies in 2021. Takalar Regency as a whole has an area of 8,046.613 hectares dedicated to seaweed cultivation. With a land area of 175,618 hectares, Ujung Baji village is one of the foremost seaweed-producing centers (*DKP Takalar, 2023*).

In 2017, the Takalar Regency produced 996,550 tons of seaweed. In 2018, production dropped to 538,680 tons. With the 455,198 tons produced in 2019, the percentage decrease was greater than 15 percent. Moreover, during the COVID-19 pandemic in 2020, seaweed production fell dramatically to 409,207 tons. Despite an increase in output, the production achievement in the first semester of 2023 was 376,348.1 tons. According to discussions with the KPA, fisherfolk, and peasants, the causes of the decline of seaweed production include warmer seawater temperatures, long droughts, extreme weather/ storms, pollution from waste generated by a shrimp company, and tidal waves and abrasion, which are becoming increasingly concerning year after year.

Other economic losses

According to findings of the KPA assessment involving Ujung Baji peasants and fisherfolk, the economic impact of abrasion and tidal flooding in Ujung Baji has amounted to as much as US Dollar 25 billion. This includes the loss and damage of the lands of peasants and fisherfolk, and the persistently low crop yields following the damaging events.

In 2023, sea water intruded into the ponds, and people's homes were submerged in floods of 50 centimeters to a meter. Fisherwomen suffered great economic losses when abrasion and flooding affected their production of acetes (rebon shrimp) and shrimp paste, pandanus

[2] Seaweed-derived hydrocolloids mainly include alginate, carrageenan and agar, which are important parts of the food ingredient industry.

mats, flooded rice, and oyster/shellfish products. Furthermore, the well water has become polluted and discolored.

Community responses to mitigate and adapt to disasters caused by sand mining

The situation faced by the Ujung Baji - Takalar Peasant and Fisherfolk Community as a result of natural disasters and the threat of losing their living space and agrarian resources has increased their awareness and decision to act. Since 2019, the community and various elements have been working to save the coast by planting mangroves. This planting is done both by the community members on their own and with the assistance of the local government. Community members also build abrasion barriers to preserve the coastal environment as well as to protect their houses. However, these efforts might not be enough to withstand the effects of severe abrasion.

The Ujung Baji peasant and fisherfolk community, particularly the women, have also been doing their part to protect their environment. They are cleaning up the river estuaries, and young people in particular are cleaning up the beach to restore it to its former glory as a tourist destination before it was destroyed by mining and abrasion.

Agrarian and resource reform at the center of Takalar's environmental movement

The Takalar Regency has been in the spotlight in the last 15 years due to several prolonged agrarian conflicts. Beginning in the early 1980s and reaching a peak in 2008, peasant lands in the North and South Polongbangkeng sub-districts were illegally seized by the PTPN XIV sugarcane plantations.

Further dispossession of peasants has taken place in the last 13 years as sand mining companies in collusion with village governments expropriated lands to mine sea sand to support the construction of huge development projects, including the Center Point of Indonesia and the Makassar New Port (PSN) National Strategic Project. Besides defrauding the peasants, massive sand mining has caused the severe abrasion of Takalar's coast. More conflict is expected to result from the construction of the 640-hectare Pamukkulu dam in North

Polongbangkeng, which is also on the agenda of a 1.6 trillion-rupiah National Strategic Project. In addition, a 3,500-hectare Takalar Industrial Estate, a National Strategic Project covering five villages in the Laikang sub-district's coastal area, will be built.

The mining resistance movement in Sanrobone Sub-district began in Paddinging Village in 2010, in response to the damage to and destruction of productive rice fields, transforming them into mining puddles. This resistance movement continues to gain strength despite opposition from mining actors backed by the police, from Village Governments that are acting as mining brokers, and from self-interested community members. In fact, the resistance has expanded to other villages in the Sanrobone sub-district, culminating in 2013 with the holding of an Independent Field School for Organic Farming attended by 25 women and men. Following the field school, participants worked with KPA to conduct an assessment and participatory mapping of mining areas. They found that a total of 53 hectares of productive rice fields have been lost in Bonto Panno and Bonto Beru hamlets, resulting in the deaths of two people: an 11-year-old disabled child and an adult.

The resistance movement achieved greater heights in 2015, including the formulation of the Natural Agriculture Strategy to Save the Last Rice Fields with the collaboration of KPA South Sulawesi. In 2018, they also succeeded in establishing SEPAKAT, a women peasant organization composed of alumni of the Takalar School for Women Peasants. In addition to women from Paddinging village, women from the communities of Ujung Baji and Banyuanyara in the Sanrobone sub-district attended this school. Finally, Sepakat Pesisir was founded in 2019, with the coordinator being an alumnus of Sepakat Paddinging.

Responses by the authorities

Allocation, use and management of land/resources

The South Sulawesi provincial government has disbursed a budget of Indonesia Rupiah (IDR) 15 billion for the construction of walls to address the impact of severe abrasion on seaweed cultivation and to reduce the threat to houses in the coastal sub-districts in Takalar,

Lack of tenure security in Ujung Baji village

According to 2021 data on the Ujung Baji village, 65 percent of the population is classified as poor. One of the most important factors causing the high poverty incidence in the village is the unequal distribution of agricultural resources.

Fisherfolk and seaweed peasants hold only small plots of land, most of which is untitled. At the same time, the use of the village land for seaweed cultivation is unregulated: the first ones to stake a claim on the land and who have the capital to cultivate it can continue using it and can even expand their land. Fisherfolk and seaweed farmers who find themselves in dire straits are forced either to sell the land, if they own it, or give up their user rights. They then end up working as seaweed nursery workers or peasants in neighboring villages. Some of the men find work in the city as construction workers.

In the meantime, accretion lands, called deltas, which are growing in size and number, can be titled and sold to elite groups with powerful connections in the village government. Ponds are controlled by elite interests by as much as 80 percent.

Rice fields are primarily rainfed, and yard lands are likewise unproductive and left idle in the dry season, forcing peasants and fisherfolk to solely rely on the sea for a living. It is no surprise that the peasants and fisherfolk in Ujung Baji, while still comprising the majority, are gradually declining in number every year.

However, if properly managed, abandoned lands and yards can have significant economic value. In KPA-facilitated discussions on land use, peasants and fisherfolk talked about which lands could serve as demonstration plots for the growing of basic needs, such as vegetables. The KPA assessment showed that if one household spends IDR 10,000 (USD 0.63) per day to buy vegetables, chilies, and tomatoes, that translates to a spending by the villagers of IDR 300,000 (about USD 19) per month on such food items. When multiplied by Ujung Baji's 900 households, the villagers would be spending IDR 270,000,000 (USD 17,072) per month, or IDR 3.2 billion (USD 202,336) per year. This would make the case for maximizing the use of the village's often idle land.

The Takalar Women Peasants Union, which was founded in 2017, has been leading a movement to promote natural agriculture and the use of yard land to grow vegetables for some time, but they have yet to scale up their efforts. In addition to the issue of land utilization for daily needs, Ujung Baji peasants and fisherfolk, as well as the villagers in general, have agreed to set up conservation locations, particularly at the river mouths, which are also used by women in this village to collect oysters and clams.

In collaboration with KPA, Ujung Baji peasants and fisherfolk are currently collecting data on cultivated land tenure to determine the extent of inequality caused by unequal and unfair agrarian power relations.

including Ujung Baji village and Sanrobone sub-district. As the construction of the abrasion retaining walls is still underway in severely eroded villages, the government has assisted in mitigating abrasion disasters. This effort, at the very least, can protect the property rights of peasant and fisherfolk communities, such as houses and yards, that are threatened by disasters.

Aside from budget support for the construction of the abrasion wall, the provincial government has also mapped 19 mangrove spatial areas spread across several regencies, including Takalar. The government, in collaboration with the Department of Marine Affairs and Fisheries, as well as all elements of society, including the private sector, are encouraged to take an active role in planting mangroves in coastal areas for ecological restoration and protection, as well as to increase the economic value of coastal communities.

The South Sulawesi Provincial Government, the Governor, and the Provincial Legislative Council (Dewan Perwakilan Rakyat Daerah or DPRD) passed the 2024 Basic Budget in November 2023. This budget earmarks funds for solutions to environmental change, climate change, prolonged El Nino, and regions that are currently facing major challenges, including food supply shortage. The South Sulawesi Regional Budget's primary goal is to improve the agriculture, livestock, marine, and fisheries sectors. Peasants, fisherfolk, and cattle breeders are the subjects to be targeted. People's Business Credit (KUR) in the

amount of 30 trillion Rupiah will also be made available as soon as possible. This is also related to maximizing the use of abandoned and unproductive idle lands to increase production and promote the welfare of peasants, fisherfolk, and cattle breeders, including the Ujung Baji peasants and fisherfolk community.

Since 2019, the National Government and the Agrarian Reform Task Force have distributed approximately 2,500 land certificates for the recognition of land ownership rights, with 1,000 of them in the Sanrobone sub-district as part of the Complete Systematic Land Registration (PTSL) program. Meanwhile, the National, Provincial, and Regency Governments, in collaboration with academics, non-governmental organizations (NGOs), and cooperative business activists, have provided both capital assistance and innovative knowledge on seaweed development to adapt to climate change, which affects production and causes peasant losses.

Lessons and insights

The link between land tenure and climate change adaptation

Agrarian problems have resulted in structural inequality and poverty. The current pattern and orientation of development, which is capitalistic, allows financiers and elite groups to control land and other agrarian resources. Peasants, fisherfolk, indigenous peoples, the urban poor, women, and rural agrarian communities are deprived of their means of subsistence.

Increasingly liberal agrarian policies have exacerbated conflicts and caused massive environmental damage. Disasters happen everywhere because concessions are easily granted. Mining (on land, at sea, and on the coast), large-scale plantations, and industrial forest plantations result in the displacement of people and degradation of the environment. According to the 2023 Agricultural Census, there are 16.89 million smallholder peasant households in Indonesia, an increase of 18.54 percent from 2013, when the number was 14.2 million. In the province of South Sulawesi, 1,010,912 households make a living from agriculture, with 42.21 percent of them being smallholders. Their number has increased by 69.72 percent in the last 10 years, and is the highest recorded in the island of Sulawesi.

Meanwhile, there are 34,958 farming households in Takalar Regency, of whom 66.48 percent or 23,240 families are smallholders. The data cited indicates that land ownership and cultivation are narrowing, shrinking, and even disappearing on a national, provincial, and district-wide scale. This is undoubtedly related to the structural policies issued by the State and government during each administration.

Ujung Baji Village, as one of the seaweed-producing areas, requires the support of various parties to ensure the sustainability of peasants' and fisherfolk's lives and livelihoods. The Gigaz and Lawi-Lawi types of seaweed are improved varieties that are more resistant to the changing climate and to pests. Thus, seaweed production is expected to increase, providing economic value to seaweed peasants and fisherfolk in this village. All parties must encourage the improvement of peasant and fisherfolk communities' knowledge and capacity so that they can adapt to and survive the effects of future disasters. A halt to the creation of new ponds and restoring mangrove forests which are coastal protective belts will mitigate the negative effects of climate change, including marine resource destruction, hunger, poverty, and agrarian inequality.

Recommended policies and programs

First: as an agrarian rural community, the peasants and fisherfolk of Ujung Baji village must quickly adapt and carry out continuous innovative mitigation efforts while preserving and practicing their social, cultural and spiritual values. Furthermore, transforming the community into a strong people's organization capable of fighting collectively will be the primary capital required to address current and future tenure issues and disasters. Data on agrarian inequality, power relations, and the potential of agrarian resources in coastal villages to benefit communities when managed for the common good, must also be presented fully and completely. Village deliberations should include all stakeholders, including women, peasants, fisherfolk, village youth, existing groups such as cooperatives, and peasant groups, with a view towards formulating a fair and sustainable development concept, which will then become the basis of a Village Medium-Term Development Plan document. The following steps are recommended: (1) completing the agrarian data for landless people, peasants, and uncertified assets (rice fields, gardens, ponds, houses, among others);

(2) teaching the community how to manage vacant and rainfed land so that they can produce crops throughout the season through natural agriculture; (3) exploring and mapping the knowledge and capacity of coastal women towards the development of a just, sovereign, and sustainable village; and, (4) promoting tenure advocacy in Agrarian Reform Priority Locations with strong and independent people's organizations.

***Second**:* the National, Provincial, Regency, and relevant Ministries (ESDM-KKP) must review, halt, and remove the concession allocation from the Provincial Spatial Plan Regional Regulation No. 03 of 2022, which covers an area of 9,327.84 hectares. Mining for sea sand has made the situation and conditions of coastal communities and environmental ecosystems extremely vulnerable. Research shows that 23 million people in coastal Indonesia are expected to face annual flooding by 2050. Disasters will destroy homes, cultivated lands, and villages/cities, resulting in serious agrarian conflicts as tens of millions of people lose their livelihoods and are forced to flee their villages. Hunger, poverty, food insecurity, crime, social conflict, and other negative consequences will become intractable problems. Stopping destructive activities and protecting agrarian resources for the benefit of people and environmental sustainability are far more beneficial and rewarding on a social, economic, and ecological level. These safeguards must be strengthened through structural policies at both the local and national levels. It is past time for the State to stop caving in to the interests of financiers who have monopolized Indonesia's natural resources while causing disasters elsewhere.

Genuine agrarian reform is the only way to achieve social and environmental justice. Indonesia has a solid legal and constitutional foundation, which includes the Constitution, the Basic Agrarian Law, and TAP MPR IX/2001. This agenda inspired the nation's founders and leaders, who were committed to transform Indonesia's land tenure structure from a colonial and feudal system that robs and oppresses into a dignified and just land system for 270 million Indonesians. The President, as the leader of the executive, legislative, and judicial branches, must revoke and suspend policies that promote liberal and capitalist-oriented agrarian reform in order to serve the interests of the community of peasants and fisherfolk in Ujung Baji village, whose

lives are monopolized and controlled by elite groups, feudal figures, entrepreneurs, and sand mining operators in their area.

Third: KPA and other civil society organizations (CSOs) must fight alongside people to achieve gender and intergenerational justice. They must criticize, straighten out, and urge the government, as the party with the authority to carry out the constitutional mandate, to ensure justice and sovereignty for the people. They need to conduct grassroots education and share knowledge that promotes the struggle of peasants in particular and the public in general.

Fourth: The international community must also actively support the people's struggle for tenure rights and environmental protection. The threat of disasters caused by climate change will become a regional and global issue, especially since the Indonesian government's policies are inextricably linked to the global political and economic cooperation system. The international community must collaborate to push for the advancement of the rights of communities worldwide. Tenure rights for peasants, fisherfolk, indigenous peoples, women, children, urban poor, coastal communities, and other vulnerable groups must be recognized, protected, and respected as part of human rights. ■

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