

Land Tenure Rights in a Geographically Isolated and Disadvantaged Community in Bukidnon, Philippines

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Abstract

This study delves into the intricacies of land tenure rights in a Geographically Isolated and Disadvantaged Area (GIDA), Barangay¹ Bukang Liwayway, situated in the Municipality of Kibawe, Bukidnon, Philippines. The primary objective is to conduct a rapid assessment of land tenure dynamics within this community. The study has five objectives: a) Determine the different land uses of the residents in the barangay; b) Assess the natural resource development potential in the barangay; c) Determine the various forms of land tenure arrangements in the community; d) Identify the key stakeholders in the land tenure arrangement in the community; and Determine community land tenure improvement options. Employing a combination of methodologies, including secondary land use maps, participatory workshops, and Geographic Information System (GIS) analysis, the research reveals that Bukang Liwayway is predominantly functions an agricultural community, with 48% of its land dedicated to crop production and 43% adorned with a mix of fruit and timber trees. The natural forest is limited along riparian areas constraining natural resource development, thereby channeling efforts towards agri-based by-products and waste utilization. Diversity characterizes land tenure, with tax declarations prevailing among 52% of households, land titles held by 48%, and 20% of households operating as tenants. The study underscores the nuanced roles and influences of distinct stakeholders in the realm of land tenure, highlighting the impact of socio-cultural contexts. In pursuit of enhanced land tenure, the research identifies two viable options: forest management stewardship for migrant settlers and ancestral domain rights for indigenous peoples. The findings emphasize the pivotal role of secure land tenure in fostering community engagement in formal economic activities, underscoring the intrinsic link between land rights and sustainable development in GIDAs, exemplified by the case of Bukang Liwayway.

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Introduction

The Philippine government has a long-term vision for the Filipino people to become a “predominantly middle-class society, where there is equality of opportunities and poverty eradicated as spelled out in the Ambisyon Natin 2040. In addition, the Philippine Development Plan (PDP) highlights its commitment to Inclusive growth, specifically in lowering poverty incidence in the rural areas from 30% in 2015 to 20% in 2022. The main strategy is the expansion of economic opportunities in Agriculture, Forestry and Fisheries, because this sector remains central in generating employment for 1/3 of the labor force in the country; therefore, addressing poverty in the rural areas (NEDA, 2019).

The Philippine Development Plan (PDP) also outlines subsection outcome 4, emphasizing the need to enhance and safeguard the rights of small-scale farmers and fisherfolk concerning access to land and water resources. This commitment aligns with Executive Order 70, which formalizes a comprehensive, whole-of-nation strategy aimed at fostering inclusive and sustainable peace across the country. In essence, this approach entails targeted interventions precisely where they are most needed, ensuring that marginalized sectors such as small farmers and fisherfolk receive the necessary support and protection.

In response, the Regional Development Council of Region 10 adopted the Convergence Areas for Peace and Development (CAPDev). As the regional banner program, CAPDev addresses "the root causes of insurgencies, internal disturbances and tensions, and other armed conflicts and threats". CapDev is a "focused, coordinated, and sustained delivery of basic services and social development packages by the government in poor, conflict-affected and geographically isolated and disadvantaged areas (GIDAs) in the region” (NEDA-10, 2019). GIDAs refers to communities with marginalized population due to physical and socioeconomic separation from mainstream society. Physical refers to isolation due to distance, weather conditions, and transportation difficulties (island, upland, lowland, landlocked, hard to reach, and unserved/underserved communities ((DOH, NCIP, DILG, 2013).

Meanwhile, Central Mindanao University, an academic institution is mandated to conduct research and extension programs; as such, the University thrust under the Research, Development, and Extension includes responding to poverty and environmental degradation through research and extension. In 2019, the University's RDE team explored potential engagement areas that will align with the CapDev. CMU sent initial communication to a couple of Local Government Units to which the Municipality of Kibawe responded. In January 2020, a multidisciplinary team consulted the municipal officials where Barangay Bukang Liwayway was identified as a site of engagement,

having met the criteria of being classified as GIDAs barangay. A week later, Municipal officials of Kibawe visited Barangay Bukang Liwayway to conduct a consultation. During the visit, a focus group discussion generated community concerns through a rapid assessment. Among the many problems identified by the participants is land tenure security.

Enhancing land rights in developing countries like the Philippines is crucial in promoting agricultural of insecure ones (Akram, Akram, Hongshu, & Andleeb, 2019). Land resources play a significant role in promoting rural livelihoods, with land tenure, whether legally or customarily defined, being a critical factor in resource management and degradation. Secure access to land is vital for farmers worldwide, enabling them to work and invest in their land without fear of arbitrary confiscation. Both formal and informal land rights are essential for improving the living conditions of the underprivileged in developing nations, impacting areas such as economic growth, agricultural production, food security, natural resource management, gender-related inequalities, conflict resolution, and local governance processes. Additionally, secure land rights drive increased productivity, reduce poverty, and contribute to global food security (Katusiime, Schutt, & Mutai, 2023).

Objectives of the study

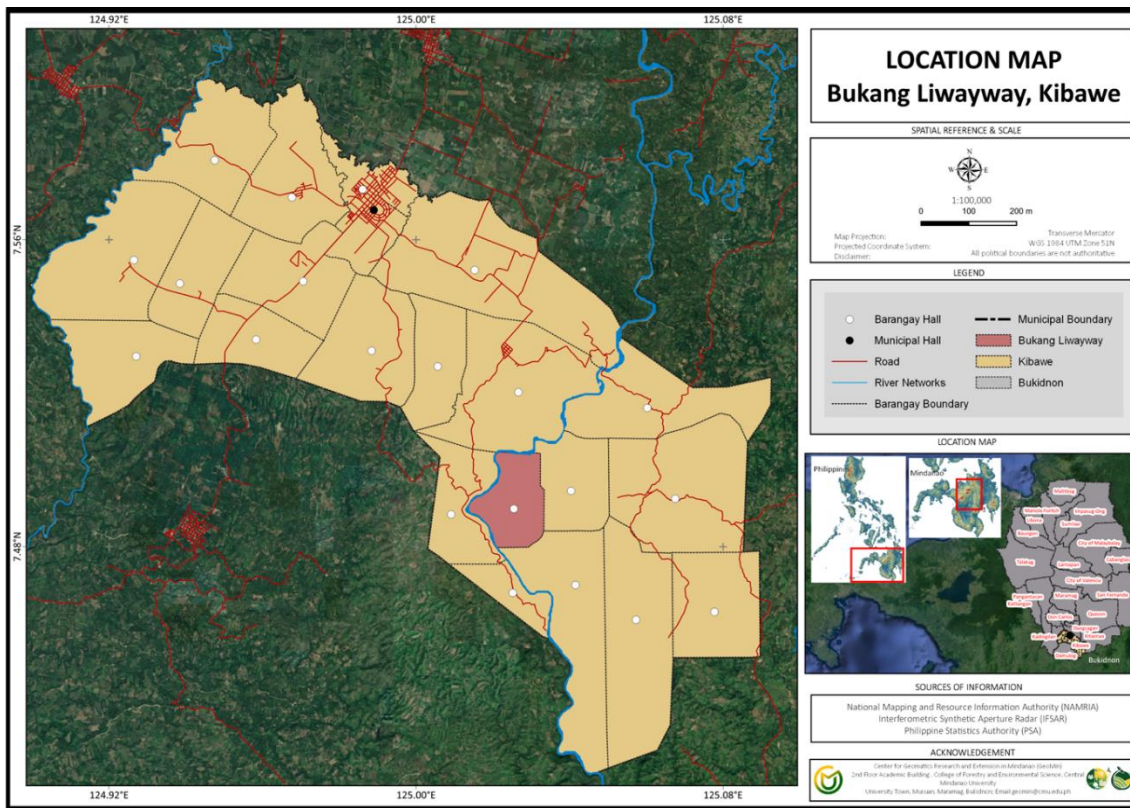
The general goal of the study is to assess the land tenure and property rights of the residents of Bukang Liwayway. Specifically, the study aims to:

- a) Determine the different land uses of the residents in the barangay;
- b) Assess the natural resource development potential in the barangay;
- c) Determine the various forms of land tenure arrangements in the community;
- d) Identify the key stakeholders in the land tenure arrangement in the community;
- e) Determine community land tenure improvement options.

Methodology

Study Site and Duration of the Study

The study site is Barangay Bukang Liwayway, Municipality of Kibawe, Province of Bukidnon (Figure 1: Location Map). Kibawe is a 2nd class municipality located in southern Bukidnon and is bounded in the north by the municipality of Dangcagan, on the south by the municipality of Damulog, on the east by the municipality of Magpet, North Cotabato, and the west by the municipality of Kadingilan with Muleta River serving as a natural boundary. Kibawe is politically subdivided into 23 barangays. The implementation of the study covered the period October 16, 2020- October 15, 2021.



Methods and Processes

The research used a Rapid Participatory Research Approach, applying various tools and techniques. Figure 2 shows the analytical and methodological framework. The research is anchored on the Ambisyon Natin (Our Vision) 2040, a long-term vision for the Philippines, aiming to guide the country towards development and prosperity by the year 2040 (NEDA, 2016). This is operationalized through the Philippine Development Plan (PDP), specifically in the context of eradicating poverty through inclusive development. Thus, this research is in response to the national development agenda while linking to the development concern of the community, in this case, land tenure. In order to achieve the objectives of the study, the researchers employed the following participatory methods and tools:

Land Use Mapping and Livelihood Scanning

Land Use Mapping, and Community Livelihood Scanning is critical in understanding issues in land tenure security. Land tenure is about the relations of people to the land (FAO, IFAD, UNICEF, WFP, & WHO, 2023). Thus, it is crucial to understand how Bukang Liwayway residents use the land, specifically in terms of livelihood. This method established people's interaction with the land regarding how they utilize it to support their daily needs. Using Geographic Information System (GIS), the team extracted a 2018 land use/land cover map for Bukang Liwayway available online

from the Environmental Science for Social Change (ESSC).

The team conducted field validation of the generated map, addressing two limitations: its 2018 timeframe and provincial scale based on remote sensing. Data gaps identified during validation were rectified for research purposes, notably correcting inaccuracies concerning sugarcane cultivation. The revised land use/land cover map was then validated in a Focus Group Discussion (FGD), where community representatives provided feedback. During this discussion, participants explored existing natural resources and their utilization by the community, as well as potential development opportunities for livelihood enhancement.

Land Tenure Mapping and Analysis

Land tenure mapping is a crucial process in understanding the different tenorial arrangements that exist in a community. While a land tenure map can be accessed easily from government agencies like the Department of Environment and Natural Resources, tenure is much more complicated, involving formal (legal) and informal arrangements. Participatory land tenure mapping is a process used to understand the different tenorial arrangements in a community. The process included the following steps:

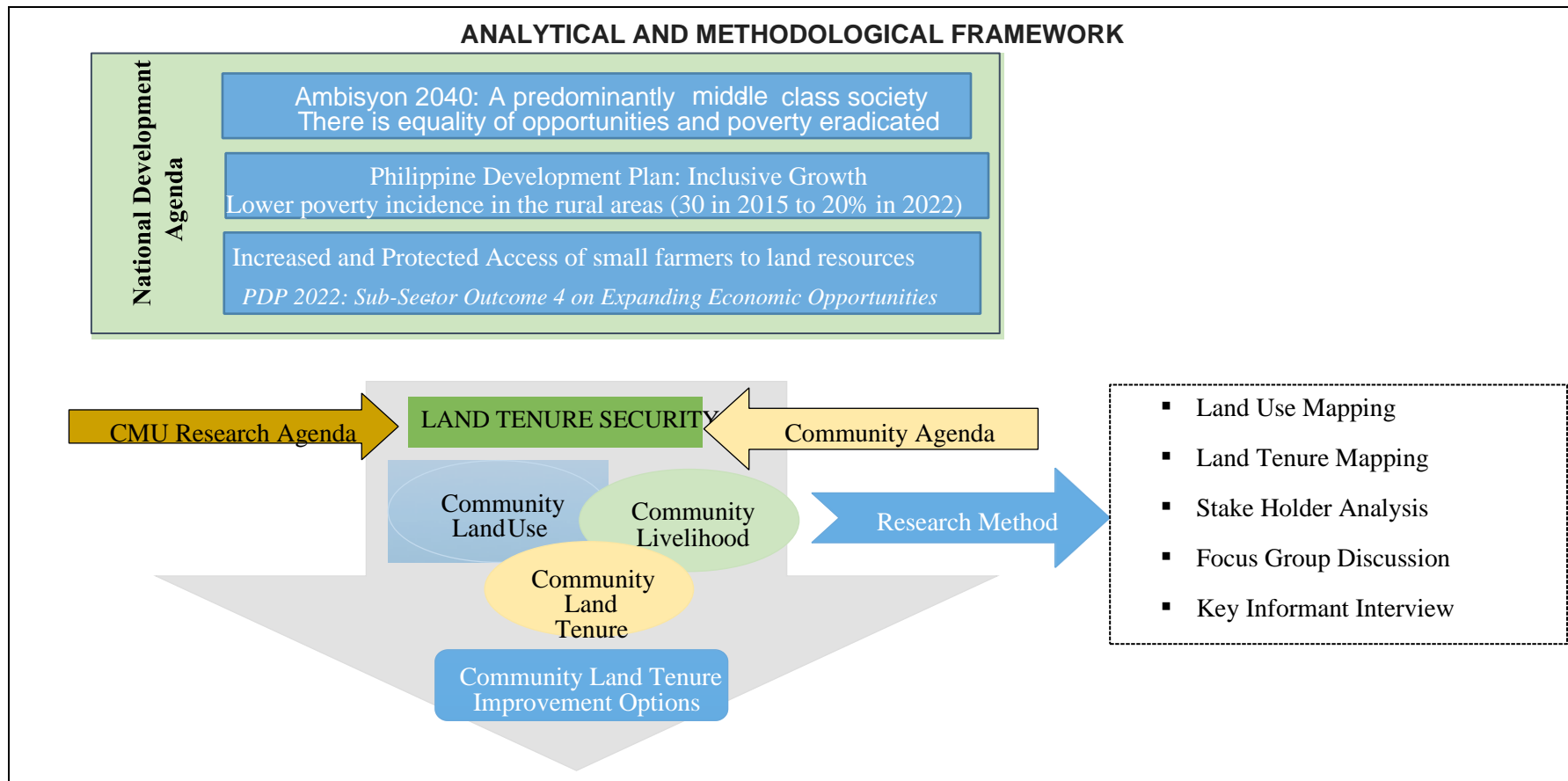


Figure 2. Analytical and Methodological Framework

- Inventory of the different households per purok;
- Requested a list of households per purok from the barangay secretary;
- Conducted a focus group discussion (FGD) participated by the representatives of the community

During the FGD, the team presented the inventory of households for validation, followed by an inventory of land tenure for each household, then mapped out the spatial distribution of land and land ownership (tenure). The participatory land tenure mapping process is an effective way to understand the different tenurial arrangements that exist in a community and can help develop policies and programs that address land tenure issues.

Stakeholder and Power Relation Analysis

Stakeholder and power relation analysis is crucial in understanding the different stakeholders and their degree of influence in land tenure. The process involves identifying and analyzing stakeholders and their interests through participatory methodologies such as stakeholder mapping and focus group discussions. Community representatives for the focus group discussion were identified using the following criteria:

- Barangay and Purok Officials
- Representatives from each Purok or Sitio who are familiar with or know each household in the Purok/Sitio
- Resource users/having strong interaction with the natural resources available in the community

Stakeholder analysis is a method of determining different stakeholders' levels of interest and influence in an effort. Once the information is available, the appropriate approach for each stakeholder is more explicit. The stakeholder analysis matrix is a valuable framework for assessing how affected and influential different stakeholders are. It involves looking at the different stakeholders and their degree of influence in land tenure. The activity used a Venn diagram.

Results and Discussion

Land Use and Land Cover

Barangay Bukang Liwayway is an agricultural community with a significant land area devoted to producing various crops. The land use and land cover analysis revealed that the primary crops grown in the area are corn (*Zea mays*), coconut (*Cocos nucifera*), banana (*Musa spp.*), rubber (*Hevea brasiliensis*), and rice (*Oryza sativa*). Tree cover is also significant, accounting for 43% of the

landscape. This tree cover is a mix of fruit trees and trees planted for timber. Around 5% of the landscape is grassland, while built-up areas constitute 1%. Figure 3 shows the spatial distribution of the general Land Use/Land Cover of Bukang Liwayway.

Corn fields: Zea mays is the common agricultural land use in Bukang Liwayway, accounting for around 30% of the land area. The magnitude of corn production can be deduced from the volume of corn cobs around the community, a resource that has not been maximized so far. Corn farmers mostly, if not all, adapt the conventional technologies of commercial hybrid seeds and synthetic fertilizers. Except for a few households with the capacity to self-finance the cost of production, most corn farmers rely on credit from individuals both within and outside the barangay. Financing or access to low-interest rate credit schemes is a significant concern among the residents. Farmers in Bukang Liwayway mirrors the same experience in many developing nations characterized by restricted access to credit. This shortage of available credit at critical times adversely affects agricultural productivity (Yadav & Sharma, 2015).

Coconut Plantation: Cocos nucifera is another important crop in the community, covering 13% of the area. Under coconut plantations, farmers often practice intercropping depending on the available sunlight. Due to significant areas planted with coconut, there are also significant byproduct materials, such as coconut husks and shells, which, at the moment, have yet to be optimized for economic purposes.

Banana: One of the common inter-crops in the coconut plantation is banana. It is also common within the gullies and boundaries of land. Banana is one of the sources of cash crop, as seen by the daily movement of bananas being traded.

Cassava: Another crop commonly used in the mixed cropping practice is cassava, another income source. The harvest is chopped and dried before trading. These are either planted under coconut and other tree/orchard areas.

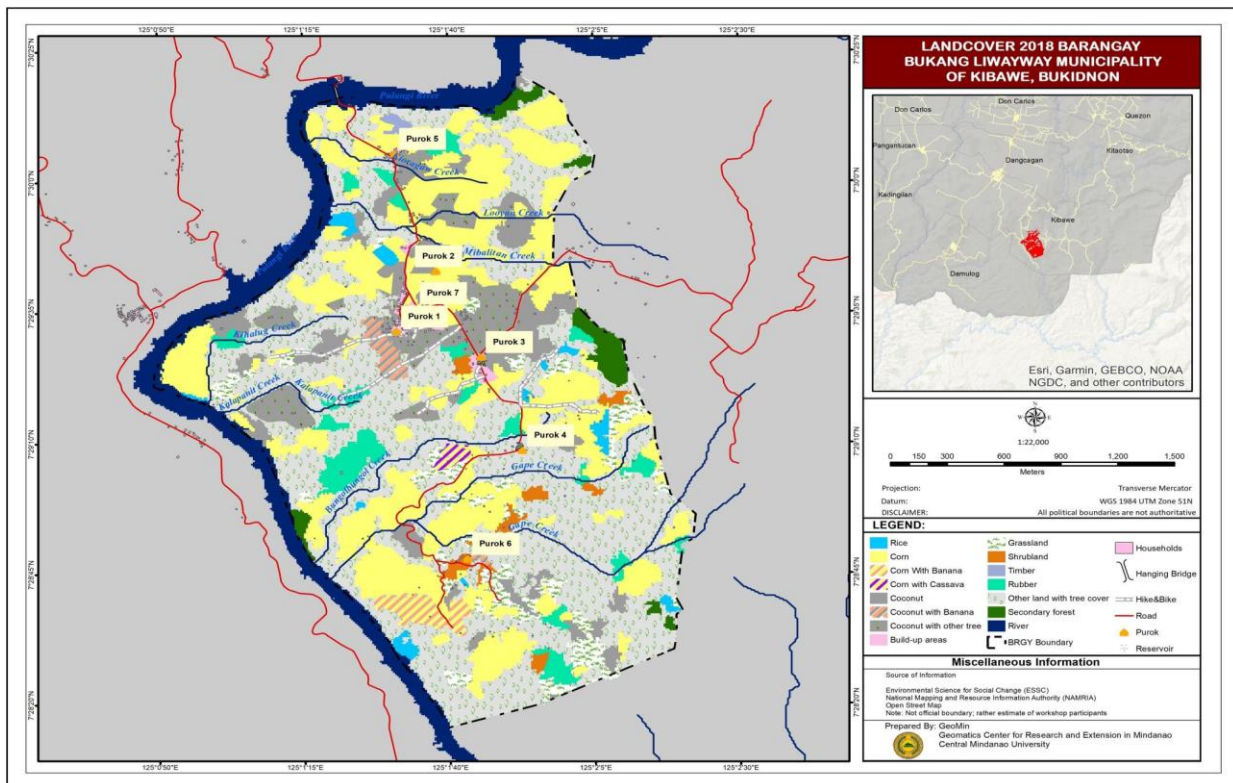


Figure 3. Land Use/Land Cover of Barangay Bukang Liwayway

Rubber: Rubber (*Hevea brasiliensis*) is a vital crop globally, especially in Southeast Asia. In the Philippines, it's primarily grown in Mindanao, with top-producing regions including Regions 9, 12 and the Bangsamoro. In 2019, these regions accounted for 85% of the country's rubber production, with a total cultivation area of 229,431 hectares (Mag-aso & Garcia, 2021). A few landowners in Bukang Liwayway cultivate rubber, representing 4% of the land area.

Forest: Generally, tree cover dominates the landscape of Bukang Liwayway at 43%. However, the remaining natural forest is very limited to riparian forests. Some of the endemic tree species includes: bakan (*Litsea philippinensis*), tugas (*Vitex parviflora*), narra (*Pterocarpus indicus*), lauan (*Shorea sp.*), balete (*Ficus sp.*), and hanagdong (*Trema orientalis*). Meanwhile, much of the tree cover is mixed of fruits trees and planted trees for timber such as but not limited to gmelina (*Gmelina arborea*), falcata (*Falcataria falcata*), ipil-ipil (*Leucaena leucocephala*), mahogany (*Swietenia macrophylla*). Other non-timber forest products are rattan (*Calamus spp*), and bamboo (*Bambusa spp*), while limited, some wildlife animals are monitor lizard (*Varanus spp*), Philippine sailfin lizard (*Hydrosaurus pustulatus*), baksan, and birds.

Built-Up Areas: Table 1 shows that Bukang Liwayway has 218 households distributed in 7 Purok, with Purok 1 hosting the most households (22%), followed by Purok 5 (19%). Purok 6 is the farthest, while Purok 7 is adjacent to Purok 1. The community is a mix of different ethnicities,

including Cebuano, Boholano, Ilonggo, and Waray, with some Manobo-Pulangiye descent.

The barangay is accessible from the municipal center through a hanging bridge crossing Pulangi River. Bukang Liwayway has a Barangay Hall, a covered court, and an elementary school in the barangay center. Health services are taking place through the Barangay Health Center manned by Barangay Health Workers and a midwife. Different Purok have communal faucets with tubs for communal bathing and laundry.

Table 1. Number of Households per Purok

Purok	Households	Percentage
Purok 1	49	22%
Purok 2	15	7%
Purok 3	35	16%
Purok 4	31	14%
Purok 5	42	19%
Purok 6	22	10%
Purok 7	24	11%
Total	218	100%

Source: Barangay Secretary

Water Resources: The water resources in the community are both an enabling and hindering resource. Bukang Liwayway is bounded in the west by Pulangi River, also known as the Rio Grande de Mindanao, the longest river in the Philippine Island of Mindanao ([Panondi & Izumi, 2021](#)). It traverses through multiple provinces, including Bukidnon, Cotabato, and Maguindanao.

The Pulangi River poses logistical challenges due to its size and the required infrastructure investment, limiting transportation options between Bukang Liwayway and the municipal proper (Figure 4. Water Resources Map). Presently, access to the Barangay is facilitated via a hanging bridge over the Pulangi River, suitable for motorcycles. Despite these challenges, the Pulangi River remains indispensable, serving as a crucial source of livelihood, recreation, and domestic water supply. Traditionally, it has been a significant fishing ground for the Manobo people, alongside migrant settlers. However, the watershed areas within the barangay are relatively small, confined to its political jurisdiction, resulting in smaller streams. Through participatory mapping and field validation, at least seven streams have been identified: *Kioragaw*, *Looyan*, *Mibalitaan*, *Kihalog*, *Kalapanit*, *Bungol-bungol*, and *Gape*. These streams, along with their head source, are vital for

sustaining livelihoods and providing safe drinking water to the community.

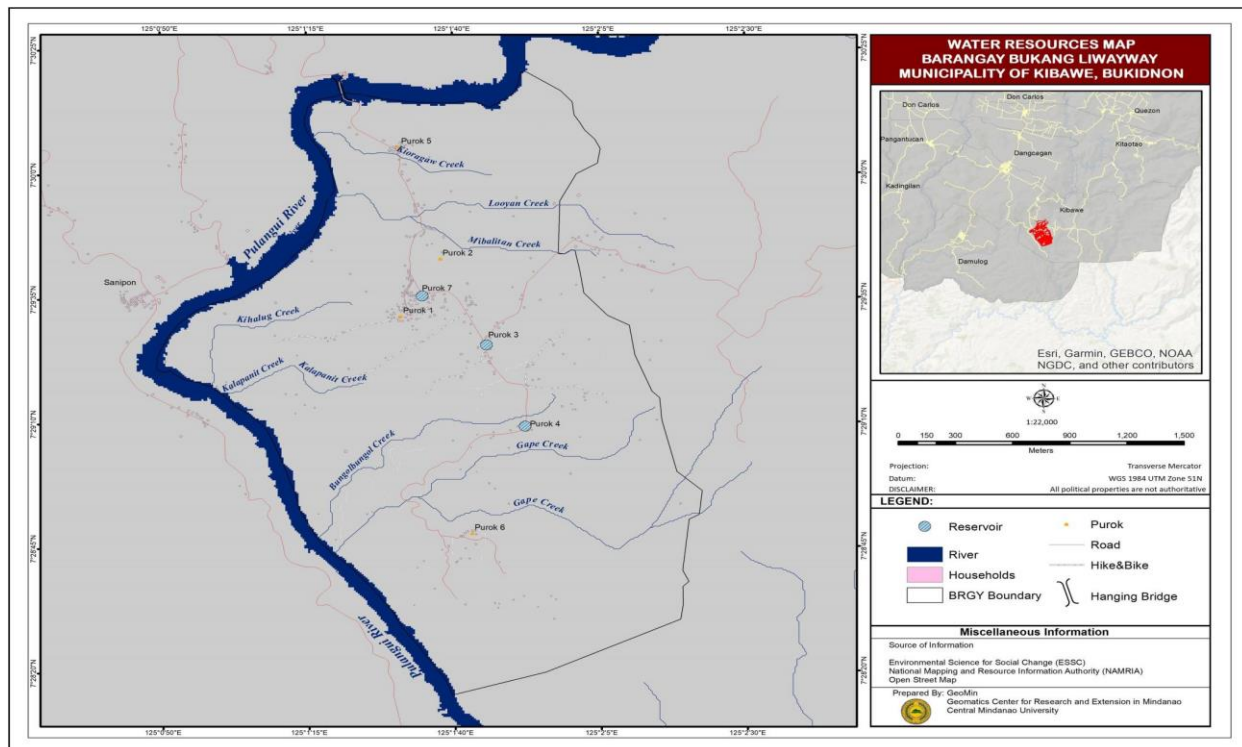


Figure 4. Water Resources, Barangay Bukang Liwayway

Natural Resource Development Potentials

The land use and land cover of a community have implications to economy, environment, and well-being of the locality. The dominance of agriculture and tree cover in the Bukang Liwayway landscape highlights the importance of these sectors in the community's economy and livelihoods. Policies and programs that support sustainable agriculture and forest management can ensure the long-term viability of these sectors and promote economic growth and development.

The presence of grasslands and built-up areas, although relatively small, can have implications for the environment and social well-being. Grasslands are important habitats for wildlife, and their loss can lead to biodiversity loss and ecosystem degradation. Built-up areas can also have environmental implications, such as increased pollution and reduced green spaces, affecting the community's health and well-being.

The limited remaining natural forest in Bukang Liwayway highlights the need for conservation and restoration efforts to protect the community's natural resources and biodiversity. Policies and programs that promote sustainable forest management and conservation can ensure the long-term viability of these resources and promote environmental protection. The presence of Pulangi River highlights the need for infrastructure development to ensure that the community can access the resources they need to thrive.

Land Tenure Arrangements in the Community

The issue of land tenure security is a critical concern in many developing countries, including the Philippines. Land is a source of food, shelter, and income and an essential aspect of social identity (Liversage, 2015). Access to land is essential for reducing vulnerability to hunger and poverty, and the absence of land tenure security can exclude people from development interventions and discourage long-term investment. Denying poor people property rights can also create difficulties for households in participating in formal economic activities, leading to development that excludes those most in need (Velasco, Regadio, & M.B., 2014).

In Bukang Liwayway, land tenure includes title, tax declaration, and tenants (Figure 5). The participatory workshop revealed that 52% of households only possess a tax declaration as a form of tenurial security, while 48% possess a land title (Table 2: Tenurial Arrangement by Households). The data suggests that the majority of households in Bukang Liwayway still need secure land tenure. Regarding land area, 49% of the community has unsecure land tenure (Table 3: Tenurial Arrangement by Ownership and Area). This lack of secure land tenure can exclude people from development interventions and discourage long-term investment, perpetuating poverty and inequality. The fact that 20% of households are tenants also indicates that a significant number of people do not have ownership or control over the land they occupy. This is understandable, given that the area falls within the timberland classification.

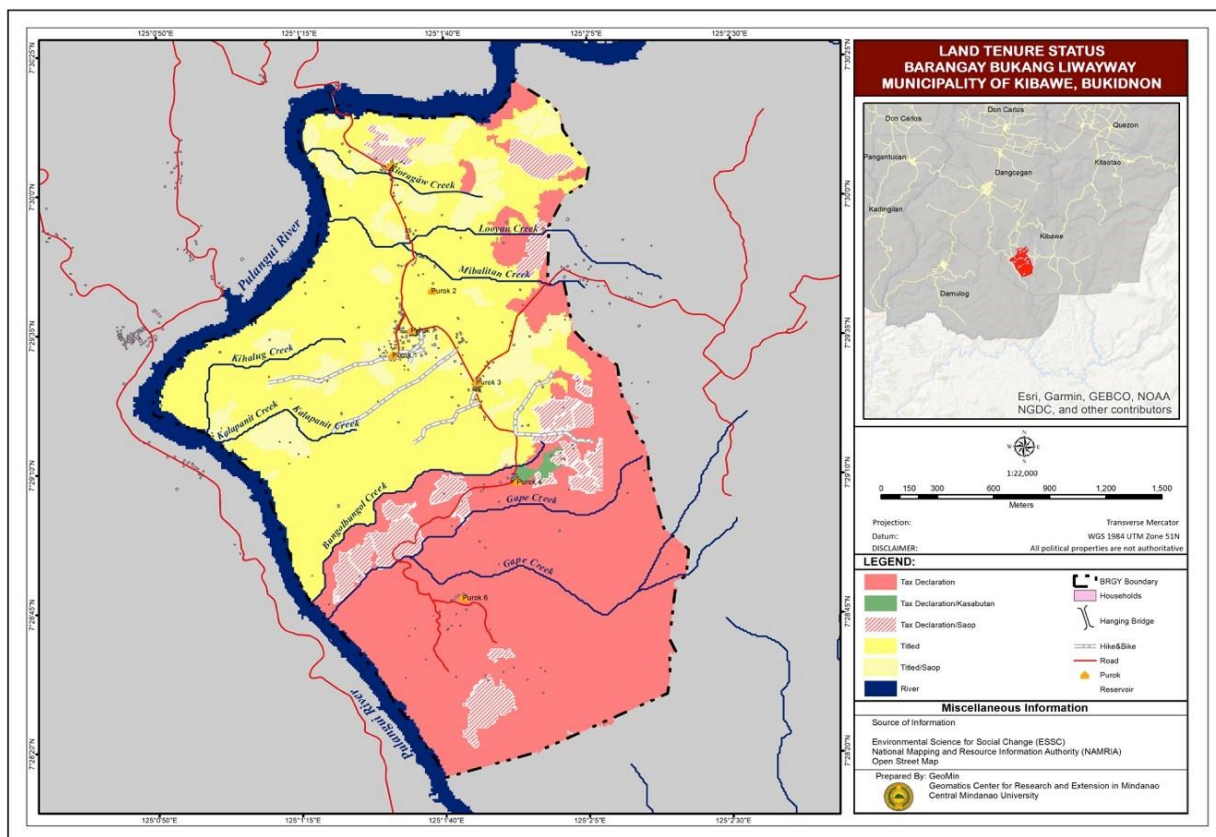


Figure 5. Land Tenure Map of Barangay Bukang Liwayway

Table 2. Tenorial Arrangement by Households

Land Tenure	Landownership				Sub-Total	
	Owner-Tiller		Tenant			
Tax Declaration	173	46%	22	6%	195	52%
Titled	127	34%	52	14%	179	48%
Sub-Total	300	80%	74	20%	374	100%

Table 3. Land Tenure by Type of Ownership by Area (hectares)

Land Tenure	Landownership				Sub-Total	
	Owner-Tiller		Tenant			
Tax Declaration	258.54	42%	42.70	7%	301.24	49%
Titled	242.38	40%	67.18	11%	309.56	51%
Sub-Total	500.92	82%	109.88	18%	610.80	100%

However, insecure land tenure can exclude people from development interventions and discourage long-term investment, perpetuating poverty and inequality. Studies indicate that

agricultural land yields better results when tenure rights are secure, compared to situations where they are uncertain or insecure.

Interestingly, there are 74 households representing 20% who are tenants, 52 and 22 households are tenants from titled and tax declarations lands, respectively

To address the issue of insecure land tenure, the government and other stakeholders can implement policies and programs that promote secure land tenure, such as land titling and registration, land use planning, and land reform. These policies and programs can help ensure people have Access to secure land tenure, which can promote economic growth, social stability, and environmental protection.

Recognizing the importance of sustainable peace in the country, the Philippine government has reaffirmed its commitment to inclusive development by issuing E.O. 70, which institutionalizes the Whole-of-Nation Approach to attaining inclusive and sustainable peace. The concept of CAPDev is critical in addressing the root causes of insurgencies, internal disturbances, tensions, and other armed conflicts and threats. It is a promising approach to achieving inclusive and sustainable peace and development in GIDAs such as Bukang Liwayway. However, political will is needed to push for its implementation. Without addressing the issue of land tenure security, the vision of a "predominantly middle-class society, where there is equality of opportunities and poverty eradicated" will remain elusive in many GIDAs barangays such as Bukang Liwayway.

Secure land tenure is essential for sustainable development, providing a foundation for economic growth, social stability, and environmental protection. Insecure land tenure, on the other hand, can lead to conflicts, displacement, and environmental degradation. The lack of secure land tenure can also limit Access to credit, markets, and other resources, hindering economic growth and development (USAID, 2023).

To address the issue of insecure land tenure, the government and other stakeholders can implement policies and programs that promote secure land tenure, such as land titling and registration, land use planning, and land reform. These policies and programs can help ensure people have Access to secure land tenure, which can promote economic growth, social stability, and environmental protection.

Stakeholders in the Land Tenure of the Community

This section discusses the different land stakeholders in Bukang Liwayway through a simple stakeholder analysis using two variables: interest and influence (see Figure 7: Stakeholder Diagram). The analysis was carried out through a participatory process using a Venn diagram. The figure shows

the different stakeholders and their corresponding interests represented by their location, size, and distance from the circle's center. The stakeholder analysis is a useful tool to identify and understand the different groups that may be affected or have an effect on land issues in Bukang Liwayway. By identifying the stakeholders and their interests, it is possible to develop strategies and policies that take into account the needs and concerns of all parties involved. The following are the stakeholders identified by the participants in order of their interest:

- Landowners: Staking a claim over land means that the person is interested in the property. Participants noted that landowners have the highest interest when lands are involved;
- Barangay and Municipal Officials: Meanwhile, any transfer, agreements, or arrangements about land or involving land conflicts will have to pass through the Barangay Council. Thus, Barangay Officials are the next group interested in land issues, besides the local tax generated out of the transaction;
- National Commission on Indigenous Peoples (NCIP): A government agency mandated to process ancestral domain/land titles to indigenous peoples;
- Department of Environment and Natural Resources (DENR): A government agency responsible for governing and supervising the exploration, development, utilization, and conservation of the country's natural resources, including land.
- Tribal Leaders: On the other hand, particularly in rural communities, tribal leaders have a strong interest in land
- Department of Agrarian Reform (DAR): A government agency responsible for redistributing agrarian land in the Philippines.

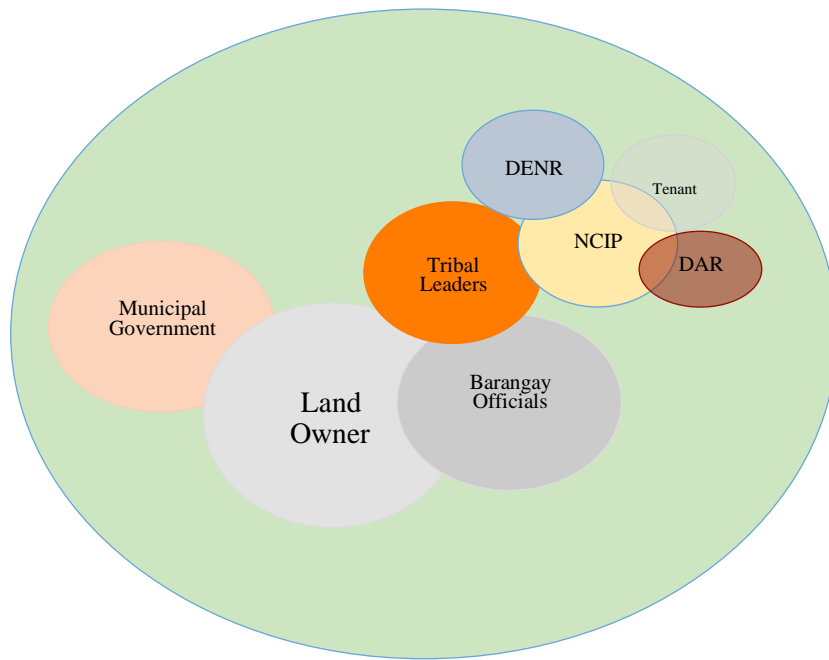


Figure 6. Land Tenure Stakeholders in Barangay Bukang Liwayway (revise the figure)

Community Land Tenure Improvement Options

In addressing the issue of land tenure in the community, the study engaged an examination of relevant policies and options. Personnel from the National Commission for Indigenous People (NCIP) and the Department of Environment and Natural Resources-Community Environment and Natural Resource Office (DENR-CENRO) in Don Carlos were invited to gain insights and guidance. Through this collaborative effort, two viable options for improving land tenure in Bukang Liwayway emerged:

- **Forest Management Stewardship for Migrant Settlers:** This option involves implementing forest management programs that grant stewardship rights to migrant settlers residing in forested areas. By formalizing their tenure rights, migrant settlers can engage in sustainable land management practices while contributing to forest conservation efforts;
- **Ancestral Domain Claim for Indigenous Peoples:** Recognizing the ancestral domain rights of indigenous peoples is another crucial avenue for securing land tenure. This option involves facilitating the legal recognition and titling of ancestral domains, ensuring indigenous communities have ownership and control over their traditional lands. This not only safeguards their cultural heritage but also promotes sustainable resource management practices aligned with indigenous knowledge and customs.

These two options represent distinct approaches tailored to the specific land tenure challenges faced by different segments of the community. By exploring and potentially implementing these

strategies, Bukang Liwayway can take significant steps towards addressing land tenure insecurity and fostering equitable and sustainable development for all residents.

Conclusion and Recommendation

The landscape of Barangay Bukang Liwayway characterized by diverse agricultural crops and tree cover, underscores the pivotal role of these sectors in the community's economy and livelihoods. Sustainable agriculture and forest management are imperative for ensuring their long-term viability and fostering economic growth. Additionally, addressing the issue of secure land tenure is crucial, as a significant portion of households lack this security, hindering development interventions and perpetuating poverty and inequality. Two viable options for improving land tenure include forest management stewardship for migrant settlers and ancestral domain rights for indigenous peoples.

Furthermore, while the concept of Capacity Development (CapDev) has begun to materialize in Bukang Liwayway through research and extension programs, greater efforts are needed to fully address the community's needs. Collaboration with municipal, provincial, and regional-level programs is essential to empower local residents and align initiatives with the national development agenda, particularly Ambisyon Natin 2040. By enhancing coordination and expanding initiatives, Bukang Liwayway can move closer to achieving sustainable development and improving the well-being of its residents.

COMPETING INTERESTS

The authors have no competing interest to declare.

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