

Towards Inclusive Development: Situating the Socio-Economic Wellbeing and Environmental Issues of an Indigenous Cultural Community in the Philippines

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Abstract

The Municipality of Carranglan is a rural community where agriculture is the main source of livelihood. The Kalanguya Ancestral Domain (KAD) is also located in the area, and it provides a home for the Kalanguya indigenous cultural community. They have fled to the area for a variety of reasons. Despite its rural setting, Carranglan is regarded as a first-class municipality and the largest municipality in Nueva Ecija. This study described and documented the socio-economic profile, and existing issues and problems the Kalanguya Indigenous Peoples (IPs) experienced in their milieu, especially in terms of environmental protection. Recognizing and valuing their perspectives is vital for inclusive development. This study also situated the current status and conditions of the IPs, who generally live below the poverty line and face a range of plights and challenges. As part of safeguarding indigenous rights and interests, this study was undertaken after series of consultations with community elders and leaders. Key informant interviews, household surveys, semi-structured interviews, focused-group discussion (FGD), and direct observations were used to elicit information. Many of the respondents are elementary undergraduates which show that the community had lacked access to education. The following are the primary socioeconomic issues confronting IPs: insufficient access to potable water, suboptimal agricultural productivity, meager monthly income, and a dearth of supplementary and alternative livelihood opportunities. Forest fires, landslides, encroachment of illegal loggers, and concerns about wildlife resources are some of the current environmental issues they have encountered. The local population was supportive

of plans and actions targeted at improving the environment. This reveals that the IPs possess unique indigenous forest expertise that enables them to properly manage natural resources.

Keywords

Indigenous People, Rural Development, Rural Sociology, Environmental Problems and Conservation, Extension and Community Intervention, Carranglan, Nueva Ecija

1. Introduction

Land is an integral part of the lives of the indigenous peoples (IPs). It is intimately linked to their identity [1] [2]. This is particularly clear in the Philippines, which is home to between 14 and 17 million IPs, representing 110 different ethnolinguistic groups, with the majority located in Northern Luzon (33%) and Mindanao (61%) [3]. The present study incorporates data on the population of IPs in Nueva Ecija, which is estimated to be around 28,000 individuals. These IPs belong to 11 different ethnic groups, namely the *Dumagat*, *Kalanguya*, *Bugkalot*, *Ilongot*, *Ibaloi*, *Kalinga*, *Ifugao*, *Kankanaey*, *Bago*, *Aplai*, and *Aeta* [4]. Hence, we are unable to separate IPs from their ancestral domain.

In the current context, IPs have been deprived of their ability to exercise their rights within their ancestral domain, resulting in their persistent search for their ancestral territory. The displacement of indigenous communities from their ancestral lands has resulted in their inhabitation of challenging circumstances, characterized by the loss of land and resources. One viable solution to this predicament is for these communities to regain control of their territories [5] [6]. This circumstance can be attributed to three factors: 1) the impact of globalization; 2) the inadequate implementation of the Indigenous Peoples' Rights Act (IPRA) of 1997 (Republic Act 8371); and 3) the growing issue of poverty.

The present study examines the challenges faced by IPs in the *status quo*. The phenomenon of globalization is often associated with the erosion of cultural identities due to the increasing influence of a standardized, westernized consumer culture, leading to negative perceptions of globalization in the cultural sphere [7]. Globalization has had a notable impact on the lives of IPs, resulting in a complex push-pull effect that has caused disruption to their distinct indigenous knowledge systems and practices (IKSPs). This shows the contemporary challenge experienced by the IPs in which their traditional systems and practices are at risk of being forgotten. Furthermore, in a contemporary capitalist and neo-liberal society, where market forces dominate, it's unsurprising that culture is routinely commodified and bastardized.

Apart from globalization, IPs are experiencing difficulties upholding the law that was enacted exclusively to protect their rights. IPRA's primary objective is to safeguard IPs' rights and to assist them in attaining sustainable and equitable

development [8] [9]. IPRA is a crucial law for the conservation of indigenous culture and the improvement of the economic conditions of indigenous communities in the Philippines. However, in the present circumstances, there have been concerns since the law was applied haphazardly and inadequately [5] [10].

The ADB [5] also asserted that the National Commission on Indigenous People (NCIP) is deemed inadequate and incapable in fulfilling its legal obligations as a government entity responsible for law enforcement. Furthermore, it has been reported that certain employees of the NCIP who have vested business interests have engaged in unlawful activities. These activities include the manipulation and distortion of the Free Prior Informed Consent (FPIC) process, which has resulted in the authorization of businesses and mining companies to conduct exploration and operations on indigenous territories [11].

The Philippines exhibits a poverty rate of 18.1 percent, with an estimated 19.99 million individuals residing below the poverty threshold [12]. This includes IPs who are experiencing significant socioeconomic challenges, rendering them among the most marginalized, susceptible, and impoverished populations within the country. According to recent data, the Kalanguya IPs residing in Carranglan, Nueva Ecija, exhibit a poverty rate of 36 percent [4], which indicates that they generally live below the poverty line [13].

The aforementioned issues present a significant risk to the well-being of the IPs. The adverse impact of corporate greed and the continuous exploitation of natural resources on the environment of the Kalanguya community resulted to detrimental impacts in their lives. The depletion of natural and mineral resources was observed to be on increase. The impact of climate change on IPs has resulted in increased challenges in their ability to sustainably inhabit their natural environment. This is largely due to the unregulated and unsustainable human activities that have been carried out in their lands, leading to adverse effects on their livelihoods. The degradation of forest and watersheds in the area of IPs communities has resulted in a pronounced decline in their quality of life.

As a result of these considerations, this research aims to examine and situate the socio-economic circumstances, aspirations, and environmental challenges faced by the Kalanguya Indigenous Cultural Community residing in the Kalanguya Ancestral Domain (KAD) located in Carranglan, Nueva Ecija. The study seeks to provide a comprehensive understanding of the community's current situation and to identify the factors that contribute to their well-being. Furthermore, this research contributes to the field of inclusive development by providing a deeper understanding of the challenges and difficulties faced by the marginalized groups.

The primary objective of this study is to characterize and describe the Kalanguya IPs' socio-demographic and economic characteristics. Additionally, the study aims to identify and document the challenges they faced, with a particular focus on issues related to agro-forest production and environmental conservation. Moreover, this study will also investigate the responses of IPs towards the challenges brought by modernity. The task at hand was to provide a platform for

individuals who have been marginalized by the *status quo*, in order to understand their concerns, experiences, and aspirations from an emic viewpoint.

2. Materials and Methods

2.1. Geographical Setting

Carranglan is a landlocked municipality located in the province of Nueva Ecija, Philippines (see **Figure 1**). According to the PSA [14], all 17 barangays in Carranglan have been categorized as remote communities. Despite its rural location, Carranglan has been classified as a first-class municipality and is the province's largest municipality in terms of land area [15].

Agriculture is the predominant economic activity in the area, with a total of 19,704 acres (28%) dedicated to farming. The study site KAD comprises four distinct barangays, namely Minuli, Putlan, Capintalan, and Salazar, as depicted in **Figure 2**.

A significant proportion of the population engages in agricultural activities. The area exhibits a diverse range of crops, with *palay* (*Oryza sativa L.*), commonly known as unhusked rice or rice paddy, being the predominant crop. The climatic conditions of the KAD geographical area, which predominantly falls under the Philippine Climatic Type I with two distinct seasons, namely the dry season from December to April and the wet season for the remaining months of the year [16].

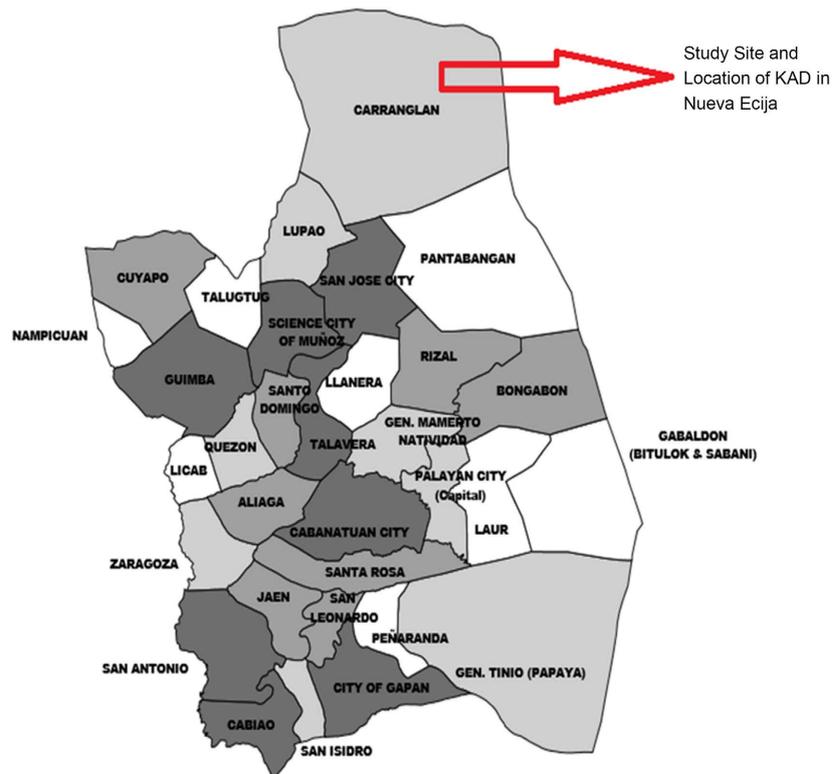


Figure 1. Map of Nueva Ecija showing Carranglan as the study site.

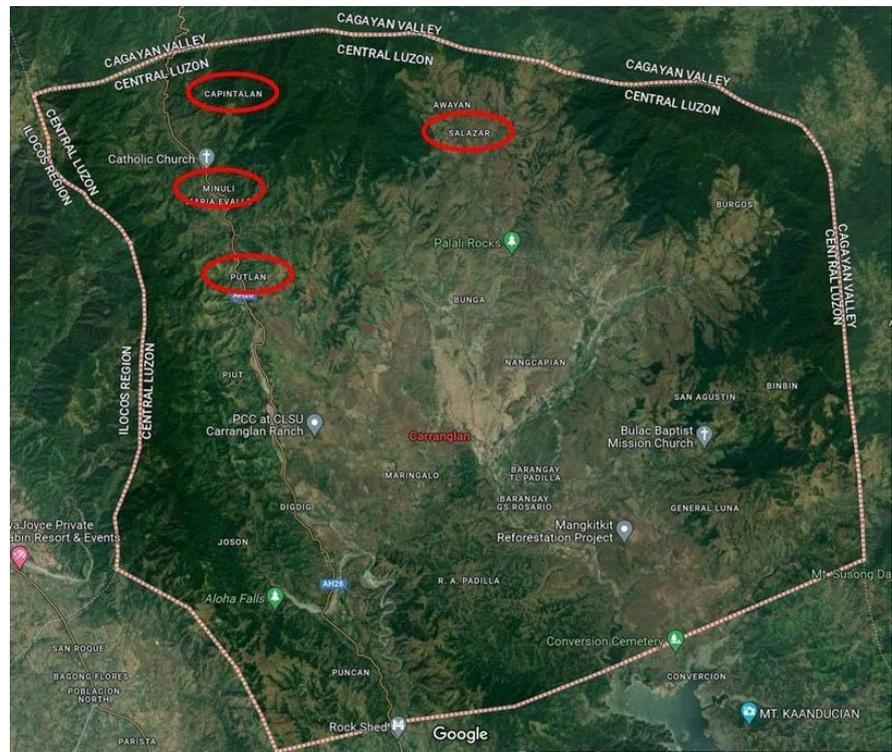


Figure 2. Municipal Map of Carranglan, specifically highlighting the four barangays that are included in the KAD.

The area's topography is typified by intricate land formations and mountainous, uneven terrain and pathways, encompassing a range of nearly level, undulating, sloping, and steep hilly landscapes [13] [17]. The annual precipitation in the mountainous region ranges from 3000 to 5000 mm [18].

2.2. Data Gathering and Data Collection

This study employs a mixed-methods approach, utilizing both qualitative and quantitative methodologies, to enhance the comprehensiveness and clarity of the findings. This research focused on the application of ethnoanthropological methodologies and the utilization of a descriptive survey approach. This study adopts the concept of “decolonizing methodology” [19] by utilizing the aforementioned method. The researchers also utilized quantitative analysis, with a focus on the application of the descriptive statistical tool.

This study employed various data collection methods, including key informant interviews, semi-structured household interviews, focused-group discussions (FGDs), and direct observation, to gather information on the socio-economic profile and environmental issues as perceived and observed by the local population. Furthermore, IPs play an integral role in every aspect of the research process as they actively generate information and knowledge [20]. The data collected is maintained with the highest level of confidentiality and is exclusively intended for research purposes. The study adhered to ethical principles and considerations in conducting research to enhance its credibility and integri-

ty [21].

The majority of the study's key informants were elders and IP leaders. The primary informants were chosen based on their length of residency as well as their familiarity with the geography and local history of their environment. The senior family member or head of the family was interviewed for the household interview. The respondents were IP residents, and their ages were limited to 18 and above, based on the notion that older people can make more independent decisions.

The study involved the random selection and interviewing of 40 respondents from four barangays of the KAD. In this study, the participants were subjected to interviews and survey questionnaires, which were presented in the Filipino language. The purpose of these methods was to gather data regarding their socio-economic background, as well as their perceptions and attitudes towards local environmental and socio-economic issues and challenges. Fieldwork, key informant interviews, and household interviews were approved by the NCIP, elders, and IP leaders in the area.

2.3. Historical Diaspora of the Kalanguya Ethno-Linguistic Group

Many IPs under the *status quo* reside not in their native milieu. They traveled to adjacent municipalities and provinces for various reasons. Based on the accounts of the *nangkaama*, who are the Kalanguya elders, the Kalanguyas were compelled to leave their homeland due to the widespread outbreak of *bohol* or *bungkillaw/bungkellew*, which is a type of plague, as well as the *ngayew*, which pertains to the practice of headhunting by neighboring ethnic groups [13] [22].

Some migrated to the provinces of Mountain Province, Pangasinan, Benguet, Nueva Ecija, and Nueva Vizcaya [22]. According to the elders' oral history, Kalanguya IPs originated in neighboring communities such as Ahin, Taboy, Tucucan, and Tinoc or Tinec. But because Tinec is now a separate municipality containing Ahin, Tucucan, and other roots of the Kalanguyas, it is appropriate to designate Tinoc, Ifugao as their origin [13].

However, the Kalanguya IPs are considerably different from the modern-day Ifugao in both their culture and their language [23]. The *status quo* recognizes the Kalanguya IPs as distinct from the Ifugao on the basis of their language, clothing patterns, agricultural prowess, and traditional cuisines [22].

2.4. The "Ikalahan" and "Kalanguya" Dispute

Drawing a comparison between the Kalanguyas and the Ikalahans may require further investigation before arriving at a definitive conclusion. The two aforementioned classifications pertain to a specific cultural community and its corresponding linguistic system. According to Himes [24], there is a debate regarding the identification of the Kalanguya IPs as Ikalahan/Kalahan. However, historical evidence suggests that this identification may not be precise. As per the findings of Gordon [25], it has been established that Kalanguya is a nomenclature used interchangeably with *Kallahan*, *Ikalahan*, *Kalangoya*, *Kayapa*, *Keley-I*,

and *Keleyqiq* Ifugao languages. These languages belong to the Austronesian family.

According to Himes [24], Kalanguya has six (6) dialects, and the language and people who speak it have been referred to by a variety of names; for a long time, the groups in Tinoc, Ifugaw have been labeled “Kalanguya.” Keley-i is the dialect spoken in Antipolo, Asipolo municipality, Ifugaw, whereas Amduntog, Asipolo (Han glulo in the Ifugaw language) speaks Yattuka or Hanglulaw. Mandekey is the dialect spoken in Amlimay, Buguias, whereas Mangkehang is spoken in Tinudan, Kabayan Poblacion [24]. Mandek-ey is the dialect spoken in Amlimay, Buguias, but Mangkehang is spoken in Tinudan, Kabayan Poblacion [24].

In addition, the term “Kalahan” refers to both the ethnic group and language spoken by the residents of the southwest region of Nueva Vizcaya and eastern Pangasinan, near to Dalton Pass [26]. This investigation highlights the challenge in accurately categorizing the most suitable identifier that best represents the group. The lack of clarity in this matter results in numerous conflicts and concerns. The terms “Ikalahan” and “Kalanguya” are at the center of debate regarding the proper classification of the IPs’ group known as “Kalanguya” [22]. According to a Kalanguya leader from Imugan, Santa Fe, Nueva Vizcaya, the anthropologist Rev. Delbert Rice, who examines and conducts research on the Imugan, exacerbated the controversy [22].

According to Rice [26], the indigenous group residing in the southwest part of Nueva Vizcaya is referred to as the Ikalahan, which can be translated to “natives of the Kalahan area.” However, despite their proper name, the majority of lowlanders commonly refer to them as “Igorot,” while some other mountain communities use the derogatory term “Kalangoya.” The term utilized by Rice to refer to this group of individuals is “Ikalahans” instead of “Kalanguya”. Rice posits that the latter term carries a negative connotation as it is derived from the phrase “Kela ngoy ya?”, which can be interpreted as “What in the world is that?” [27].

However, there were objections from Kalanguyas from other regions regarding Rice’s interpretation of “Ikalahan.” This is because the term refers to “people from the forest” and is not applicable to their particular group. Furthermore, according to the accounts of elderly Kalanguya individuals, the term “Ikalahan” is often utilized in a derogatory sense: “Ikalahan, meaning having a huge poop”—an idiomatic reference to the Kalanguya diet’s heavy reliance on sweet potatoes [22].

In response to the increasing ambiguity surrounding the group’s name, the Kalanguya Tribe Organization held a Kalanguya-Ikalahan consultation at Nueva Vizcaya State University in Bambang, Nueva Vizcaya in 1993; this was followed by the First Kalanguya Tribal Congress in Loo Valley, Benguet province later that year, which was attended by 500 community leaders, elders, and young people; it was then followed by a series of consultation [22]. During a conference held in 1994, a consensus was reached among delegates representing various groups to categorize them under the collective term “Kalanguya”.

The term “Kallahan” was expressly omitted [24]. According to Tebtebba [27],

the controversy concerning the Kalanguya people's self-ascription was addressed during a historic reunion held in Tinoc, Ifugao, when Kalanguya leaders resolved to maintain recognition of their self-ascription as Kalanguya.

2.5. Kalanguya Settlement in Carranglan

Today, the Kalanguya ethnolinguistic community inhabits Northern Luzon's mountainous region. The majority of the area has been designated as forest reserves, water-sheds, or National Parks. The Kalanguya area is scattered among the provinces of Pangasinan, Cagayan Valley, Nueva Ecija, and the Cordillera [13]. The Kalanguyas settled in Nueva Ecija's municipality of Carranglan, where the community had previously built an ancestral domain. The Kalanguya Ancestral Domain (KAD) was located in the municipality's four (4) barangays, namely Minuli, Capintalan, Putlan, and Salazar.

According to Tebtebba [27], the Kalanguya originated in Tinoc, Ifugao, and traveled southward, settling in numerous provinces. They are prevalent in the eastern portions of Kayapa, Aritao, Santa Fe, and Ambaguio in Nueva Vizcaya, as well as the barangays of Capintalan, Minuli, Putlan, and Salazar in Carranglan, Nueva Ecija. The group's ancestral land encompasses 38,000 hectares in Nueva Vizcaya and approximately 10,000 hectares in Nueva Ecija [18].

3. Results and Discussions

3.1. Socio-Demographic Profile

The majority of respondents are men, with twenty-nine (29) males and eleven (11) females. The majority of responders (34) were married, while six (6) were single. They ranged in age from twenty-five (25) to seventy (70). Furthermore, the majority of IPs are adults, with an average age of 47.14.

The limited access to educational opportunities is indicated by their level of educational achievement. There were two elementary undergraduates, and a few primary school graduates (17). Six (6) IPs completed secondary school, whereas six (6) did not. It's also sad that only one (1) IP completed tertiary education. The availability of vocational training in a specific industry is beneficial because it allows individuals to diversify their skill set. A total of eight (8) people received certificates of completion for a vocational course.

There were numerous religions in the KAD. The majority of IP respondents are Roman Catholics (12), with ten being Born-Again Christians. When we asked if they still adhered to their previous animist beliefs, the majority responded that they had already stopped. Some ceremonies and habits were also abandoned along with their former religious commitment. Farming is the primary source of income for the majority of respondents, with thirty-two (32) IPs engaged in agricultural production.

The study found that a significant proportion of the respondents reported having no additional skills beyond farming. Out of the forty participants who responded, only ten reported proficiencies in planting vegetables and fruit trees.

Thirteen (13) respondents said they were unaware of any such talents. Only four (4) of them are proficient in the process of broom making. This is a significant indication that they lacked training programs and income-generating enterprises. However, we must remember that they require initiatives that are environmentally sustainable and, most significantly, programs that are appropriate for them that provide for mutual learning and adaptation.

As a result of the limited availability of the aforementioned supplementary skills, the IPs expressed a desire to broaden their skill sets via training and capacity-building initiatives. The IP community in the area expressed their desire to receive diverse forms of training to enhance their knowledge, increase their productivity, and augment their income. The IPs wanted to have training programs that encompass forest protection, organic fertilizer production, welding, food processing, vegetable production, fruit tree production, native animal production, computer training, and tilapia fish production.

According to the respondents, training is an important component in providing individuals with the necessary knowledge and competencies. Furthermore, acquiring relevant training may lead to an increase in individuals' earnings, thereby improving their overall quality of life. Carabao, cattle, goat, native pig, and native chicken are among the most common farm animals in the area. The majority of respondents raised native pigs (see [Figure 3](#)).

3.2. Monthly Income

The majority of IPs in the area are subsistence farmers. Based on the data gathered from the forty respondents, the average income is 6690 pesos. Out of the total number of respondents, six individuals reported having zero income. According to PSA [12], PHP 12,030 was the poverty threshold, indicating that this amount was required to cover a family of five's essential food and non-food expenses for a month. This means that IP recipients live below the poverty line. Despite the socio-economic challenges faced by the Kalanguya community, a significant proportion of its members tend to have large households. The data indicates that the households have a range of sizes between 1 and 13 individuals, implying that some of the IPs live alone. The study found that a significant proportion of adult children of elderly IPs reside in independent households with their own families, while some continue to depend on their elderly parents for assistance.

3.3. Health and Healthcare Services

When the IPs in the area are unwell or have been ill, they tend to rely on traditional medical practices. According to Nakashima and Rou'e [28] approximately 80%, relies on traditional medicines to fulfill their primary healthcare requirements. Based on the analysis of the IP's practices, it has been observed that they utilize a diverse range of botanical species with medicinal properties to address various health conditions.



Figure 3. An IP feeding his native pigs.

They employ various medicinal plants such as oregano, *lagundi*, *kutsay*, *lup-lupiit*, *banaba*, *sambong*, and *luyang dilaw* for their potential therapeutic effects. Oregano is traditionally used for alleviating sore throats, coughs, and colds, while *lagundi* is known for its cough-relieving properties. *Kutsay* is utilized for treating blisters, *lup-lupiit* for sprains, and *banaba* and *sambong* for urinary tract infections. *Luyang dilaw* is used for sprains and hypertension management.

These medicinal plants are common in both their domestic and natural environments. The medicinal plant is commonly subjected to aqueous extraction to obtain its bioactive constituents for therapeutic purposes. Because the majority of IPs lived in a mountainous ecological context, they have convenient access to these medicinal plants. Respiratory illnesses, such as coughs and colds, are highly prevalent among the IPs in the area. Additionally, they also experience asthma. In elderly individuals, age-related conditions such as arthritis, rheumatism, and stroke have been observed. According to the IPs, they contracted illnesses and ailments on the job and due to weather variations. In today's environment, there are various areas to bring in IPs who are ill.

They may transport the patients to clinics, herbalists, and hospitals. The majority of IPs in the area have access to Barangay Health Centers. It is between 0 and 7 kilometers from their homes. The majority of respondents indicated that they could walk to health centers. Rural health centers, on the other hand, are located a considerable distance from the IPs' homes, ranging from 1 km to 80 km. Although it is still accessible on foot, the majority of IPs responded that it is more accessible if they ride a motorcycle or jeep.

The accessibility and proximity of large hospitals to their residences are limited. It varies in length from 12 to 110 kilometers. Patients are transported to major healthcare facilities using either a jeep or a bus. It is evident here that, despite their distance from hospitals, opt to refer their patients to medical practitioners and utilize hospital services.

3.4. Environment and Sanitation

The majority of IPs owned their homes. Their homes are made of concrete and other durable materials. The study findings reveal that their primary source of water comes from their surrounding environment. Specifically, 18 participants reported that their primary source of water is wells, while 9 participants rely on rivers for their water supply. Furthermore, 13 participants reported that they have access to a local water system. This indicates that the IPs do not have access to potable water.

The Nueva Ecija Electric Cooperative (NEECO/II/III) provides electricity to the area. Twenty-eight (28) IPs reported utilizing liquefied petroleum gas (LPG) for cooking, while twelve (12) said they were still using wood.

Regarding waste management, most IPs collect their garbage and proceed to either segregate or compost it. The preceding assertion implies that they have undergone a restructuring of their way of life to accommodate the contemporary societal obstacles, consequent to modifications in the historical temporal and spatial context. Today, the IPs in the area live in a more modernized setting.

3.5. Environmental Protection

The natural habitat, characterized by mountainous topography and forested regions, is a valuable resource for the IPs. They relied on the natural resources around them for their food and means of subsistence. A number of IPs make money from the lumber, *yantok*, and orchids that grow in their mountains. Because of this, it is essential that IPs take care of it. They have implemented and imposed a range of regulations and guidelines in their area.

Signages and warning signals were put to promote environmental preservation and natural resource conservation. Furthermore, they have been assigned a variety of duties in relation to their responsibilities within the environment. In this regard, IPs have specialized knowledge in environmental preservation and conservation. They have unique indigenous forest expertise that allows them to effectively manage natural resources. The research reveals that IPs have a close and respectful relationship with the natural world, lending credence to the idea that they function as environmental guardians and preservers.

However, it was altered as a result of different external influences and the effects of modernity. During colonization, the western modern forestry supplanted the environmentally sound indigenous method of forest management as the prevailing expertise. Maohong [29] posited that indigenous knowledge was disturbed in three steps: first, *kaingin* was mistakenly blamed for deforestation where indigenous knowledge was rationalized and made available; second, the colonial authority claimed all woodlands as state property where uplanders were forced to move to communities in the plains or become illegal dwellers in the woods. Third, after 1910, the Philippine forestry school established by the American colonial government introduced modern Western forestry; its core was to view the forest as a timber factory, with the goal of maximizing timber output and commercial value while ignoring ecological value and integrity [29].

Additionally, the IPs appoint individuals who will patrol and watch the area to prevent tree cutting and to establish fire lines to prevent forest fires/wildfires. This technique is an effective way to deter the encroachment of illegal loggers and businesses with direct interests in their properties. Indeed, they are environmental stewards. This shows that the IPs have a system of community-based environmental protection initiatives.

3.6. Problems Encountered

The IPs in the area encountered a variety of issues, which can be classified into three categories. These concerns include 1) land ownership 2) agricultural and livestock production, and 3) environmental protection. According to the IP respondents, they are having difficulty with their ancestral domain since they lack documents or titles establishing their land rights. To address this critical issue, ancestral domain land titling must be mandated and appropriately executed.

Their primary issue with agricultural output is low. Additionally, the manufacturing process, such as threshing and harvesting, is too slow. They are still using traditional equipment in their agricultural production (see **Figure 4**). They also face difficulties selling their animals and are impacted by the nation's low income and poverty. To handle these issues from an IP's standpoint, they must acquire and adapt to new and current technologies/equipment, as well as apply fertilizer in their crops to increase yields. In order to address their animal problems, they are hoping for market connections that will purchase their native pigs and chickens.

In environmental protection, the issues of a steadily deteriorating environment caused by businesses, such as mining firms, and intruders, such as illegal loggers, remained relevant. Despite widespread public awareness campaigns by various government and non-government organizations on the value of trees and the environment in our society, these types of behaviors continue to occur. Massive forest fires exacerbated the pressure on the areas of the IPs. With the devastating effect of climate change on the IPs' life and the enormous poverty that most of us suffered, these are the primary issues they highlighted. If we examine these issues more closely, we realize that the IPs share a common dilemma that is still instigated inland and their desire to protect their ecosystem.

4. Discussions

4.1. Economic Incapacity

We collected and reconciled the data we gathered through interviews and focus groups, as well as secondary data from prior research and our analytical findings, in order to hear the voices of the marginalized IPs. Additionally, this way, it will be easy to recognize the challenges they encountered in their daily life and how to address them. Based on our observations, the IPs in the study area were facing a common and collectively shared problem. This is the issue of economic capacity.



Figure 4. IPs engaging in agricultural activity as part of their daily routine.

Their mean income, based on the 40 IPs we interviewed, is only 6690 pesos. If we analyze this data, we observe that the majority of respondents were living on a subsistence level and were mostly below the poverty line. The IPs, on the other hand, claim that they are not poor, but that they are in difficult circumstances as a result of the loss of land and access to resources. They can only get out of this situation if they reclaim control of their territories [5].

This understanding of poverty is on the outsiders' point of view and outsiders' concept of development where the indicator of poverty refers mainly to material aspects such as money, house, adequate clothes, and transportation; other aspects include the inability to seek medical attention from hospitals, absence of formal schooling, and the characteristic of being lazy [5]. IPs will be able to sustain their subsistence economies as long as they retain control of their ancestral lands and waters.

However, IPs have been denied the chance to exercise their rights on their ancestral domain in today's context. The majority of IPs in the area desire an additional source of income. However, the IPs in the area lack the capital necessary to establish a business and are also concerned about where they will sell their products. Additionally, they lack the necessary skills and training to extend their knowledge, which they can employ in their daily lives to improve their quality of life.

Additionally, they jointly encountered the concept of *hirap ng buhay* (everyday struggle). Historically, the IPs offered pigs in their ceremonies, but in today's context, they rarely do so. They have begun to incorporate native chicken into their ceremonies and feasts. Rather than using pigs in ceremonies, they will sell them to meet their household's necessities. This is one of the difficulties faced by the IPs in the area; they are unable to sell their animals to the market, which is why they devise alternate methods of marketing their products.

They engage in barter transactions, exchanging their goods for other com-

modities. The IPs in the region trade three kilograms of pig flesh for fifty kilograms of rice husked or, in some circumstances, other things such as household utensils. When we study the scenario described above, we can observe that multiphasic difficulties exist. The first issue is marketing their livestock; this is one of the primary concerns of the IPs in the area because it takes them so long to sell their animals; consequently, they use them for personal consumption in the majority of situations.

Second, we may still see the historical interchange of *ilaya-ilawod* (upland-lowland) relationships, in which IPs barter their commodities for other commodities. This implies that their indigenous tradition is still relevant and is what they are accustomed to. Thirdly, although if the IPs in the area engage in a variety of jobs, implicitly interpreting them as industrious people, their lives remain engrained in the grassroots.

4.2. Concerns on Agroforest Production

According to the IP respondents, their main source of watering their crops is rainwater. This technique results in a low harvest in their agroforestry production, resulting in a low income. This is one of the key concerns of the IPs in the area. Additionally, from the IPs' perspective, they must acquire and adapt to new and current technologies/equipment in order to address general challenges in their agroforest operations.

They must incorporate fertilizer (organic/commercial) into their crops to increase productivity. The dilemma here is that if someone provides them with the technologies and equipment they require without adequate forethought and examination, it may result in further damaging changes to their specific culture and tradition.

4.3. Collective Solidarity

The IPs in the area emphasized their community's key qualities, stating that they can overcome life's struggles and difficulties as a result of these characteristics. *Bayanihan*, *pagtutulungan* (assisting one another), cooperation, and unity are some of their community values. The IPs assert that these characteristics naturally occur in their community, particularly during the planting season. They added that while *bayanihan* and unity are always present in their individual communities, the IP respondents reported that the said characteristics were particularly strong during the planting and harvesting seasons.

4.4. Concerns on Wildlife Resources

Hunting was formerly a natural attribute of IPs, but with the emergence of government initiatives and legislation, this practice had already waned. Republic Act 9147, often known as the Animal Resources Conservation and Protection Act, makes it illegal to gather wildlife resources and to kill or damage wildlife species [30]. In this sense, a question that will boggle our thoughts is whether the IPs are

committing a crime by hunting wild animals.

According to the Wildlife Law Enforcement Manual of Operations [30], collection by IPs may be permitted for traditional use and not primarily for trade, and killing and destroying wildlife species may be permitted when performed as part of established tribal groups' or ICCs' religious rituals. In this instance, the said law safeguarded the IPs' rights to do their practices. Additionally, as long as the IPs use the animal for traditional purposes and religious rites, they were permitted to hunt.

The appreciation of the environment as a source of sustenance and nourishment is among the various reasons why IPs hold a collective sentiment towards their natural surroundings. However, the impact of commercialization has led to the selling of ornamental plants, which has resulted in a gradual decline of orchids in the forest. According to Burke *et al.* [31], the perception of globalization among indigenous communities is predominantly negative, as it is viewed as a mere catalyst of market expansion and the commercialization of indigenous culture.

The encroachment of outsiders into indigenous lands and the illicit cutting down of trees for personal gain, coupled with the extensive extraction of mineral resources by mining companies, and the overall exploitation of natural resources by businesses, are unfortunate circumstances. In light of these circumstances, patrols have been assigned to guard the mountainous and forested terrain. The Department of Environment and Natural Resources (DENR) is among the government entities that provide assistance in safeguarding their environment.

4.5. IKSPs and the Challenges of Globalized Modernity

IPs exhibit high levels of efficiency and resourcefulness. They utilize the available resources and objects in their surroundings to treat illnesses and maintain their field, leading to the development of their unique Indigenous Knowledge and Skills Practices (IKSPs). IPs in the area employ a range of traditional medicinal practices to address health issues, particularly those affecting their livestock. This shows that despite the current state of globalization and the significant challenges posed by modernity, the IPs residing in the area continue to uphold their unique cultural IKSPs.

However, the dualistic nature of modernity has led to the evolution of certain systems, beliefs, and practices, with both positive and negative propositions being offered. According to Smith [19], the phenomenon of globalization and the emergence of a new world order pose unique challenges for indigenous communities. Certain cultural practices were discontinued as a result of societal transformations. The area has witnessed the establishment and practice of various religions.

The omission of animist beliefs from their rituals and customs has been observed. Daguitan [32] reported that the Kalanguya community has adopted modern farming techniques and Christianity, leading to the abandonment of traditional practices. The impact of modernity has led to the potential loss of

numerous traditions and practices. Furthermore, the elderly participants in the study recollect that the woodland was in a state of pristine wilderness and remained untarnished during their formative years. However, in contemporary times, the forest has undergone significant degradation and exploitation. The current soil conditions have become increasingly acidic, leading to a decrease in crop productivity.

Moreover, there was a surge in pest population and emergence of novel pests that caused significant damage to agricultural lands, including *aligots*, a reptilian species. Enkiwe-Abayao *et al.* [33] asserted that the emergence of pests causing more severe damage than in the past is a perceived adverse consequence of climate change.

Collectively, the IPs held a strong belief in the importance of land as a crucial aspect of their existence. IPs share similar experiences of colonization and the suppression of their territories and cultural practices, resulting in the denial of their sovereignty [2]. In the current era of technological advancement, there are several concerns that arise, including the future prospects of IPs rights and knowledge sharing platforms. Will IPs persist in adhering to their beliefs and systems? Are the IKSPs at risk of being lost over time? It is evident that without the recognition IPs rights to their territories and resources by the government and society at large, there can be no assurance of sustainable development or security for these communities.

Burke *et al.* [31] argued that the land plays a crucial role in the self-definition of IPs, as well as in the survival of their identities. They further contended that the land is conveyed through various media and is a fundamental aspect of indigenous cultures.

4.6. Actions Being Made

The IP respondents have a variety of needs in their areas in order to live more comfortably and sustainably. The demands of IPs in the study area can be classified into three broad categories: healthcare system; livelihood programs; and agricultural intervention. The vast majority of respondents indicated that they need items and equipment largely to strengthen their healthcare system.

According to the IPs, they need more ambulances to facilitate patient transportation to hospitals. They wish to upgrade the facilities at their respective health centers, and they require free medicines and the conduct of regular medical check-ups in their area.

Apart from improved healthcare, IPs need livelihood training and programs to supplement their income to enhance their quality of life. According to them, livelihood projects are not only for additional income but also for initiatives that cater to and enhance their identity and culture.

The IP respondents continue that they need an intervention in terms of agricultural assistance. Having government assistance in the form of free fertilizers, seeds, and agricultural goods such as rakes, pick-mattocks, and shovels is a big

blessing for them. They claim that they can maximize their land's productivity by utilizing this equipment.

Furthermore, some of the IPs' issues include access to safe drinking water, teacher and student cottages, farm-to-market routes, land distribution, strengthening their ethnic group's legislation, titling their ancestral domain, and improving phone connection in their community. In today's context, the area was home to a variety of initiatives and development proposals. The purpose of these programs was to empower and improve the lives of residents living in the watershed.

It is important to note that if the proposed projects in the indigenous communities are not thoroughly examined, they may have more negative implications in the long run than positive ones. As a result, before embarking on initiatives, it is vital to do a thorough study in order to establish and appreciate the immediate needs of the IPs from their own perspective (emic perspective).

While it is good that various institutions have taken the lead in empowering indigenous communities by offering project support services, we must understand and recognize that they must be given projects that are not only feasible but also suitable and appropriate for them.

5. Conclusion and Recommendation

This study examined the socioeconomic and demographic status of IPs residing in the Kalanguya Ancestral Domain in Carranglan. The IPs face significant socioeconomic challenges, including insufficient access to potable water, suboptimal agricultural productivity, meager monthly earnings, and a dearth of supplementary and alternative livelihood opportunities. Despite the influence of modernity on their lives, their IKSPs, traditions, beliefs, and culture remain.

Moreover, this study revealed that despite their efforts to conserve the environment, IPs in the area preferred hybrid rice varieties over traditional rice varieties due to their higher yields. Furthermore, to enhance agricultural productivity and increase crop yields, they adopted chemical and commercial fertilizers. However, they safeguard their environment by installing signage and employing guards to protect the mountains, trees, and natural resources. In addition, the present study highlights the vitality of acknowledging and addressing the challenges, actual experiences, and viewpoints of IPs in promoting and fostering inclusive development. In this sense, we anticipate that this study will serve as a tool to empower and assist them in improving their current circumstances, as they play vital role in attaining inclusive and sustainable development.

Based from the findings of the study, the following implications were developed: 1) there is a need to enhance the extension and development services provided by both the government and private sector in order to spur growth and development; 2) the proper implementation of IPRA (RA 8371) is crucial in protecting the rights of the IPs; and 3) relevant sectors and agencies should establish formal programs that integrate IP issues and concerns in order to capacitate and empower the IPs.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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