

Sustainable Agricultural Land Management Techniques of the Ilongot Tribe in Barangay Ditale, Dipaculao, Aurora, Philippines

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ABSTRACT

Indigenous communities have long demonstrated the efficacy of their agricultural practices in achieving sustainable land management and successful harvests. This research focuses on narrating the sustainable agricultural land management techniques employed by the Ilongot in Barangay Ditale, Dipaculao, Aurora, Philippines by employing ethnographic research methods such as interviews, storytelling, and triangulation, this study examines the practices of the indigenous group and highlights their effectiveness. Through purposive sampling, eight (8) informants were selected for their insights. The findings reveal that the Ilongot sustainable agricultural land management techniques consist of the following key practices: (a) Respect for One's Land Territory, (b) Tengder or Pollarding, (c) Slash and Burn, (d) Sensitivity to Environment, and (e) Soil fertility conservation technique. These practices emphasize the significance of respectful relationships between individuals and their land, which form the foundation for successful agriculture. Furthermore, it is observed that the younger members of the Ilongot are currently being taught these methods by their parents, ensuring the intergenerational transmission of knowledge and the preservation of their sustainable culture. Based on the research findings, it is recommended that lowland residents consider adopting these sustainable land management techniques as a fundamental approach to address prevailing agricultural challenges in the country. Additionally, it is crucial for the government and organizations to provide culturally appropriate support to Indigenous communities. Future research endeavors should focus on documenting the agricultural practices of the Ilongot, serving as valuable teaching resources for future generations in Barangay Ditale. This research contributes to the growing body of knowledge surrounding indigenous agricultural practices, emphasizing the importance of integrating traditional ecological knowledge into sustainable land management strategies.

Keywords: *barangay ditale, ethnographic research, ilongot, land management, sustainable agriculture.*

Introduction

Sustainable land management encompasses various strategies aimed at preserving and enhancing the productivity of agricultural land while safeguarding vital natural resources such as aquifers, forests, watersheds, and biodiversity (World Bank, 2008). Indigenous communities have long demonstrated the effectiveness of their land management practices, showcasing valuable insights into sustainable farming techniques.

This research focuses on exploring the sustainable agricultural land management techniques employed by the Ilongot in Barangay Ditale, Dipaculao, Aurora, Philippines. The Ilongot people are the original settlers of Dipaculao, and their ancestral knowledge and practices continue to shape the community living in Barangay Ditale (Delos Santos, 2023). The Ilongot cultivates a



diverse range of crops such as camotes, camote-glano, camote-kahoy, gabi, ubi, squash, bananas, corn, upland rice, sugarcane, and coconuts (Wilson, 1967). The land area of Aurora Province is 323,954 hectares, or nearly 1% of the total land area of the nation. It is often mountainous because the province of Aurora includes the eastern Sierra Madre Mountains. Six rivers make up the major drainage system of Aurora, which is dispersed throughout the province: the Aguang River in Baler, the Calabgan River in Casiguran, the Ditale River in Dipaculao, the Dibatuan River in Dipaculao, the Ibuna River in Dingalan, and the Sinagnuan River in Dingalan. The province has an abundance of mineral resources, including copper, iron, chromites, manganese, gold, and nickel. Non-metallic minerals like guano, black sand, cement, marble, carbon, and silica are also abundantly found there. Additional resources found in abundance in the province include sabutan, coconut, nipa, bamboo, gravel, sand, timber, rattan, shell, buri, and nito. Natural tourism attractions abound in Aurora. Its beaches, waterfalls, mountains, and ocean are all beautiful.

Furthermore, the researchers aspire to share these indigenous techniques with modern agricultural sectors without imposing them. Lowland farmers often engage in year-round farming, depleting soil fertility and leading to decreased yields. They heavily rely on equipment like tractors, cultivators, seed drills, and harvesters, which, while reducing human labor, can adversely impact the land. Recognizing the significance of land as a crucial source of income for both lowland farmers and indigenous communities, this study endeavors to describe the sustainable agricultural land management techniques of the Ilongot in Barangay Ditale, Dipaculao, Aurora, Philippines. Ultimately, the findings may offer valuable insights into factors such as crop rotation, soil conservation, and water management as well as alternative practices that could be adopted by lowland farmers seeking to explore more sustainable farming methods that maintain long-term productivity while preserving the delicate balance of the ecosystem. Through the dissemination of knowledge acquired from this research, the researchers aim to foster a greater appreciation for indigenous practices and encourage the incorporation of sustainable principles into mainstream agricultural systems.

Method

Research Design

This research employs an ethnographic research design to gain a comprehensive understanding of indigenous knowledge and methods. Ethnographic research involves immersive fieldwork, including interviews, storytelling, and triangulation, to capture the indigenous perspective and worldview (Reeves, Kuper, & Hodges, 2008). Data analysis in this study involves evaluating the collected data, identifying themes, and developing preliminary theoretical explanations based on emerging patterns and concerns.

Informants and Setting

Purposive sampling was utilized to select the informants for this study, considering their specific knowledge and expertise in sustainable agricultural land management techniques. The informants consist of 8 members of the Ilongot tribe residing in Barangay Ditale, Dipaculao, Aurora. The age range of the informants is between 40 and 69 years, encompassing various community members, including the chieftain, elders, and farmers who possess extensive experience and understanding of sustainable land management practices.

Data Collection Procedure

The research followed a systematic data collection procedure to achieve the study objectives.

Stage 1: Preliminary Visit among the Ilongot

After obtaining permission from Dipaculao Mayor Danilo Tolentino, a preliminary visit was conducted in Barangay Ditale. During this visit, the researchers sought the assistance of the Ilongot Tribe Chieftain, who provided guidance and support throughout the research.

Stage 2: Noting Significant Details from the Preliminary Visit

The researchers carefully reviewed the recorded interviews conducted during the preliminary visit. Based on the information gathered, new interview questions were crafted to delve deeper into the sustainable agricultural land management techniques practiced by the Ilongot informants.

Stage 3: Fieldwork

The researchers returned to Barangay Ditale to conduct in-depth interviews with the informants from the Ilongot tribe. These interviews aimed to gather detailed insights into their sustainable agricultural practices. All recorded interviews with the informants were transcribed, ensuring accuracy and thoroughness in data collection.

Data Analysis Procedure

Thematic analysis was employed as the data analysis technique. The deductive-semantic approach was used to validate existing literature on Ilongot agricultural practices, aligning the information obtained from the informants through interviews. The researchers classified the practices described by the informants into different overarching techniques.

The data analysis process involved the following steps: 1) Transcription of recorded interview data. 2) Identification of sustainable agricultural land management techniques mentioned by the informants. 3) Discussion and exploration of themes and patterns derived from the collected interviews.

Results and Discussion

The sustainable agricultural land management techniques practiced by the Ilongot tribe in Barangay Ditale, Dipaculao, Aurora have withstood the test of time and continue to demonstrate their effectiveness in achieving a good harvest without relying on modern machinery. These techniques emphasize the importance of maintaining a harmonious relationship between humans and the land. The Ilongot's relationship with land boundaries reflect their cultural values and deep connection to the environment.

Respect for One's Land Territory

The Ilongot in Barangay Ditale, Aurora, Philippines closely associates the concept of land property with their own cultural identity and worldviews that involve the values that operate within their community. Their lands establish their identities as it is the locale in which they develop their culture, practice their values, and fully experience the system they have established within their community (Canay, 2016). This is manifested through their distinction from other groups as being largely hunter-horticulturists. In the past, the Ilongots were in the practice of beheading individuals who trespass their ancestral domains as trespassing is seen as a grave violation of acknowledging the Ilongot's property, which is an extension of their identities. A hunter cannot lay traps within the land of another and according to one of the informants, it was common practice for them to catch only what they need, to sustain the ecological balance within their lands. However, due to changes in their environment such as the advent of Christianity, the passing of the Indigenous Peoples' Rights Act of 1997 or the IPRA law, and other external influences, their socio-political system had been reconstructed. For example, they have ceased to practice headhunting in order to keep the peace and put into practice Christian doctrine, which is an indicator of how they have adapted according to the changes that happened in their environment.

Respect is a value that is strengthened through their worldview concerning land and what could be considered as their property. The person who clears the property for usage by default becomes the owner of the land provided that the land is not another clan's territory; anyone else from the clan who has ownership over the land is free to reopen and develop it in the future. The Ilongot generally do not leave behind agricultural areas because they have little inherited property. The current generation tending to the land cares for it not only to produce their livelihood and sustenance but also to maintain it for use by future generations. An informant expressed that land signifies their love for their own families as these are the primary legacies of their forefathers. One can show his or her love for the family by nurturing the land so that it continues to provide them with food. This affirms the Indigenous value attributed to land as the symbol of life as asserted by Dr. Nestor Castro (Morales, 2012). Another informant articulated how land is analogous to the management of the Ilongot household as one would not appreciate the interference of an outsider in his household, so it is only natural that they respect the boundaries of one another. Key informants E and I, explained:

Key Informant E: *"Dito kase pag sinabi ng isang clan na wag niyong buksan yan kase bukas ng tatay namin yan, yun ay ginagalang ng ibang clan kase bukod pa sa magsasabi, bago lumaki ang mga bata samin naiistorya na ng mga magulang naming yan bago kami nagsilaki sasabihin na ng magulang naming ganito ganito wag mo pakikialaman yang areang iyan kase area ng Ogian clan yan, wag mong pakialaman ito kase area iyan ng lsideg clan, area ito ng Nangitoy clan ganun yun saamin kaya kami may pag-gagalangan pagdating sa kalupaan. At saka iyan ang mostly na ginagamit na wala mang muhon iyan ang pinaka boundary ng bawat teritoryo samin kung hindi sapa, bundok. Halimbawa kagaya niyang nakikita nating bundok na yan, yang bundok na yan dito sa gawing baba ibang clan ang may hawak niyan iginagalang iyon ng mga kabataan ngayon at saka yung mga segundang henerasyon ngayon kumbaga na kagaya na naming ginagalang yan. . . Kaya yung nasusunod sa amin ay storya ng matatanda na kung tawagin ay "tadek", pag tadek kase sa tagalog ay storya, sinusunod ng mga bata yan kase matatanda nagsasabi".*

(Here, when a clan says "Do not open that land because that was opened by our father," that is respected by other clans because aside from it being uttered, during childhood it is already told through stories by our parents before we grew up that this and that, do not trespass on that area because that is the area of the Ogian clan; do not trespass on that area because that is the area of the lsideg clan; that is the area of the Nangitoy clan. That is how it is, we respect one another when it comes to each other's land. And mostly even though there are no boundary stones, we use creeks or mountains as boundary markers. For example, that mountain that we see over there, that mountain below, a certain clan owns that land and that is respected by the children today as well as the second generation such as us. . . That is why stories are obeyed which are called "tadek," or "storya" in Tagalog, they are obeyed by the children because it is the elders who tell them.)

Casual Informant I: *Kumbaga sa isang bahay, hindi mo naman gugustuhin na ako, manghihimasok ako sa bahay mo o ikaw manghihimasok sa bahay ko. (So, to speak, in a household, you would not like it if I meddled in your house nor would I want you meddling in my household.)*

Indigenous cultural communities are distinct from local communities as they operate mostly on customary laws, as opposed to local communities which function on state laws. According to Canay (2016), it is the customary law of Ilongot families to respect the property of

other families – which affirms the responses of the informants for this research. This law is taught to the members of the community from childhood and is manifested through the fact that disputes among Ilongots are rarely caused by property encroachment. The passing down of property from one family member to another ensures that harmony within the community is maintained as the division of property is clearly established. According to IPRA (1997), they saw the land as their house of worship (religion), place of study (education), political gathering place, market and source of income, hospital (health), fortress (protection and security), and repository of their history. They are given the utmost respect because the foundation of their cultural groups is their ancestral regions.

In another article, Canay (2016) illustrated the concept of property for Ilongots. There are communal properties that signify the persistence of their community which can be forests, mountains, rivers, and cemeteries. The individual properties are respected by each member as the land signifies their economy, survival, and life itself. The concept of ownership consists not only of the right to use the land for crop production but the responsibility of conserving the land and preserving the property for the transferral of ownership to the next generation as well.

Tengder or Pollarding

The Ilongot engages in the practice of *tengder* (pollarding), which entails removing huge trees' limbs to let sunlight enter the freshly formed field according to Renato Rosaldo, as cited in an article entitled "The Bugkalot Tribe of the Philippines: History, Culture & Art, Language, Customs and Tradition [Philippine Indigenous People | Ethnic Group]". According to informants E and F,

"Noong araw ang ginagawa ng matatanda hindi pulak, inaakyat ang kahoy tinatanggalan ang kahoy na kung tawagin sa amin yun ay "tandeg", yung "tandeg" nay un ay tatanggalin lang ng dahon na ang ginagamit sa pag akyat "taburok", yung yantok lang na inassemble. . . lilipat siya dun sa kabilang kahoy ang gamit lang niya yung yantok na taburok, kakabila siya sa ibang kahoy, ngayon mabubuhay yung kahoy."

(Back then, what our ancestors did was not to cut off the limbs but the leaves and small branches only. The trees are climbed, and the branches are cut. It is called "tandeg", which entails the removal of leaves, and to climb, we use "taburok" which is "yantok" that is assembled. . . One would move on to another tree using only the "yantok" that is "taburok", then the tree will live.)

Casual Informant C and B affirmed that statement and mentioned that "Style lang ng pagtanim ay pagtatabas. Kung ikaw magpapatanim, maghuhunting ka para may ipakain ka sa tribo mo"

(The style of planting is trimming. If you are the one planting, you will hunt as well so that you will have something to feed your tribe.)

Moreover, Casual Informant F expressed his concern that, "Hindi pinupulak yan pero sa ngayon kase marami na ang nagpupulak yung mga di na kayang umakyat gawa ng wala na ring practice yun yung mga nagpupulak ngayon ng kaingin."

(The limbs are not cut off but nowadays a lot of us do so, especially the ones who are unable to climb trees anymore because it is no longer practiced. Those are the ones we cut off for "kaingin").

Wilson's (1967) research found that the Ilongots, who are skilled tree travelers, only cut off branches when performing *kaingin* and leave the main trunks of the trees standing, supporting the informants' claims. The benefits of pollarding include a healthier tree, fewer chances of heavy branches falling, and a surface covered in rotting fruit, stems, and leaves. Additionally, it makes it

possible for the plants to produce fruit more effectively and prevents the tree from getting sick. It can be inferred that the Ilongot value trees, what they provide, and their capacity for regrowth because they use this method to sustain the life of the tree.

Slash and Burn

The techniques used to prepare the land for planting crops such as ube, upland rice, coconut, and banana are the same as they were even before the Ilongot settlement in Ditale was civilized – they cut off dried branches instead of the common practice of cutting off the trunk of trees, scatter them within the area of the land to be used and then burned to fertilize and prepare the soil. The burning is watched over by whoever will plant it as well. The fire is not dangerous as it dies down by itself and does not scatter fresh leaves if the area is scaled properly. In their own words, Key Informant A and Casual Informants B and C said,

“Kapag nasunog, tapos lalinisan na, iipunin ang mga kahoy na hindi nasunog. Nagbabantay ang mga babae at lalaki. Kung sino man ang magtatanim, sila ang magbabantay.”

("When there is a fire, after it is cleaned up, the wood that was not burned will be gathered. The women and men are watching over the fire. Whoever plants, they will take care of it.")

This is supported by Rosaldo's assertion that men are also responsible for clearing the field of debris because undergrowth must be uprooted and branches removed. Furthermore, Wilson (1967) supports the informants' assertions that when clearings are made, the brush is burned because the kaingin system of farming is practiced. Using the farming method known as "slash and burn," which entails chopping down vegetation from a forest or woodland and burning it, a field known as a swidden is produced. For this kind of farming, the time between burns must be sufficient for the region to regrow dense, woody vegetation. The advantages of slash-and-burn farming for the Ilongot tribe include sun exposure, new plant growth, no need for pesticides or fertilizers, polyculture, or intercropping.

Duldulao (1981) focused the attention of his paper on the different types of kaingineros as he asserted that their involvement will aid in national development. Furthermore, he described that the negative effects of kaingin cause the decrease of wood resources which are necessary to build all kinds of materials, soil erosion, brownouts, and droughts largely due to the fact that kaingin negatively affects the capacity of uplands to absorb and conserve rainwater. On the other hand, it is generally believed by the Ilongots that their slash-and-burn technique is different from other forms of kaingin because it is sustainable. Since they only plant once a year, the negative effects of burning wood is minimized. Furthermore, they ensure that they only burn the area that they need to use in planting and that the plants that are not supposed to be burnt are safe from the fire. Animals are also hunted in moderation, in order to sustain the ecological balance of their environment.

Sensitivity to Environment

The Ilongots of Barangay Ditale, Aurora rely on their intuitions honed by experiences in planting crops. As people living within proximity of nature and whose survival is directly connected to the condition of the land (Gabriel & Mangahas, 2017), their sensitivity to their environment is manifested through their established schedule of planting their crops.

Aside from the climate dictated by the month, they use natural elements as signifiers of the time by which they must prepare their land such as the moon. Once the “tag-araw” or the summer season starts, they estimate the end of the season based on the date or the state of their crops from the previous season and prepare their land for planting accordingly.

Casual Informants C and B narrated that, “Yong buwan. Tinatandaan po namin kung anong buwan gumaganda ang tanim namin, yon po yong tinatandaan naming buwan at doon na po kami nasanay. Mayo po minsan.”

(The month. We try to remember what month our crops were fruitful; we note that month and which we are used to. Sometimes, May.)

Casual Informant F added, “Tantyado na namin ang panahon, halimbawa iyong tag-ulan sa ganito, dapat ngayong tag-araw, maglinis ka na para masunog hindi pwedeng abutin ng ulan iyon. Ngayon pag nasunog na, nalinisan na namin, hihintayin na namin iyong ulan”.

(We already have the season estimated. For example, the rainy season is this, if this is the dry season, you must prepare the land for slashing and burning. It must not be caught by the rainy season. Now, after the land is burned and cleaned, we will wait for the rain.)

Indigenous peoples in West Africa are thought to have taken advantage of weather patterns like rain, thunderstorms, windstorms, and dusty winds to predict the weather and prepare for future land use, just like the Ilongot tribe in Barangay Ditale (Hansungule and Jegede, 2014). Additionally, residents in Tirani and Chorojo decide on things like sowing time, placement of cultivation plots, and crop kinds according to what they observe as “signs of weather” (Boillat and Berkes 2013). It has been established that they can determine when to plant using only their empirical senses, without the need for sophisticated gear.

Soil Fertility Conservation Technique

To maintain the fertility of the soil, the Ilongot’s land management involves planting only once a year, approximately every May as they plant crops that last their families for a whole season – given that harvested crops are stored properly. They also do not use any chemicals, such as fertilizers to supplement the land’s fertility or pesticides to repel pests. This is because the informants strongly believe that preparing the land by slashing and burning not only makes the soil fertile for planting but also keeps the soil healthy. In Informants B and C’s own words, they expressed that the following:

“Two seasons lang. O Dalawang beses lang tinataniman. Ngayon at next year pwede taniman. Papalipasin ng ilang taon bago taniman ulit. Kabalan.”

(“Only two seasons. Or just planted twice. Now and next year it can be planted. It will be a few years before it is replanted. Anxiety”)

Moreover, they added that, “Walang fertilizer na ginagamit, Natural lang na taba ng lupa. Pangalawang tanim lang tapos babalikan ulit. Hindi gaya sa kapatagan na umaasa sa fertilizer. Walang chemical”

(“No fertilizer is used, only natural soil fat. Only second plant after returning. Not like the plains that rely on fertilizer. There is no chemical.”)

The research of Renato Rosaldo (1998), which stated that according to one Ilongot, they sow their crops according to the seasons in June and July to start harvesting them in October or November, confirms the veracity of these responses. People plant during the rainy season because it will help their crops grow more quickly. They do not exploit the land, which is why they have fertile soil.

Relating this to their agricultural practice of not using any chemicals, this signifies the importance of the natural and organic way of living that they attribute to a healthy life or a healthy land. However, challenges arise from the exposure to elements that differ in nature from what their ancestors have persisted with. For the Ilongots in Brgy. Ditale, it is crucial for them to practice

sustainable land management to keep living harmoniously with their environment. Aside from the scarcity of access to new agricultural technologies, their traditional agricultural practices persist within their community because it is the primary knowledge passed down from one generation to another. The techniques of the Ilongot documented in this research bring to light the indigenous way of life that is rooted in the symbiotic relationship of the people with their environment which they must conserve, protect, and take care of, for this directly translates to their own survival and persistence.

Conclusions and Recommendations

The relationship between the Ilongot people and their land is characterized by caution, proper timing, and sustainable practices. They demonstrate careful tree maintenance, ensuring the removal of rotting branches without harming the entire tree. They also exercise vigilance in controlling fires during land clearings to prevent damage. Moreover, they pay attention to natural cues and select optimal planting months based on their observations, demonstrating their understanding of the land's cycles. The Ilongot's practices highlight the importance of responsible land stewardship and the avoidance of land abuse.

The findings of this study suggest that the sustainable agricultural land management techniques of the Ilongot tribe can serve as a valuable resource for farmers in the lowlands. By adopting select Ilongot strategies, lowland farmers can address their current agricultural challenges and incorporate more sustainable practices into their land management approaches. This integration of indigenous knowledge and practices can contribute to improving agricultural sustainability and resilience.

To learn more about the Ilongot tribe's agricultural methods, more study is advised. The goal of this research should be to record and conserve their native habits and knowledge of how to handle the land. This priceless expertise can be passed down to future generations by documenting and disseminating their practices, which will advance our collective understanding of sustainable land management.

Governments and organizations are encouraged to provide culturally appropriate support and aid to Indigenous communities for their agricultural needs. This support should be tailored to respect and integrate their traditional practices, ensuring that Indigenous communities have the resources and opportunities to sustain their agricultural systems while preserving their cultural heritage.

In general, the Ilongot's sustainable agricultural land management methods provide insightful and instructive information for advancing sustainable land management and building a healthy interaction between people and the environment. We can strive toward a more sustainable future for agriculture that respects and protects the land for future generations by accepting and learning from their traditions.

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