Food Security Practices, Perspectives, Issues, and Related Community Indigenous Governance Systems Among Ifugao Indigenous Swidden Farmers

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Abstract

It was the purpose of this study to describe and determine the practices, perspectives, issues, and related community indigenous governance systems in the gamut of food security determinants among Ifugao swidden farmers. A qualitative descriptive approach using a multiple case study method was used in this study. Ifugao swidden farmers are naturally adaptive to environmental demands such as geographical variations, modernity, and changing economic systems. They apply traditional knowledge in their means of achieving food security but their practice is being rapidly influenced by the use of synthetic materials to maintain subsistence to surpass it. Living in a current capitalist system, they are trading their sense of community to give way to present convenient living. The Ifugao swidden farmers did not totally lose their sense of community in achieving food security but they considered fusing familial and civic duty in the life world. They are open to government interventions and blend with government policies when achieving food security. On perspectives, the swidden farmers espouse an integral swidden system. They are developmental, enduring, and pragmatic but spiritual. They commit to communal, familial, and individual values. They put the highest premium on the future of their children which is their strongest motivation to achieve their well-being amidst their encounter with modernity. The swidden farmers face and are trapped with physical fatigue, climate change, pests and diseases, declining biological heritage, lack of technical and financial resources, and irresponsive government policies. Insights on strengthening community indigenous governance were drawn.

Keywords: Food Security, Swidden Farming, Indigenous Governance, Environmental Perspectives

Introduction

The Indigenous peoples occupy indigenous cultural communities and possess Indigenous Knowledge, Systems, and Practices (IKSPs) on food security that enable them to survive and at the same time, demonstrate a harmonious, meaningful, and sustainable ecological symbiosis. However, IKSPs on food security among swidden farming evolve due to many factors, and capturing the changes is useful for responsive community development.

Debates are universally centered on whether swidden farming is a sustainable practice. Factors like globalization, the present economic system, poverty, and modernity have affected traditional practices that call for a better understanding. These are important for community development actors to initiate policy actions that will uplift the poor and indigenous peoples. Also, in the course of survival, IPs are facing dilemmas, for example, on government forest policies and swidden farming. Li et al. (2014) affirm that undoubtedly, swidden cultivation is the foremost land use system in the upland areas of Southeast Asia that gives numerous important basic products mostly to local poor indigenous farmers, but it is closely associated with a horde of environmental issues. Moreover, Li et al. (2014) assert that debates on the changes in swidden agriculture as cognized by various disciplines imply that swidden agriculture is highly contentious and creditable of wide-ranging research.

Fox as cited in Cairns (2015) espouses that swidden has long been viewed as an environmentally destructive practice but also many have sought to refute these claims. Researchers are no longer writing in disagreement with claims that swidden causes degradation, for example, swidden fallows are seen as a potential sequester of carbon that promotes biodiversity and sustainability. In furtherance, Cairns (2015) stresses that it is the environment for

rapid change that signaled an up-to-date review of swidden farming as it is practiced in these chaotic times. Nonetheless, policy-making, biodiversity loss, climate change, and innovations in swidden farming continue to attract immense interest for investigation.

The international literature is focused on the diminishing practice and transformations of swidden farming in the world and Southeast Asia (Li et al., 2014; Dressler & Fabinyi, 2011; Preston, 1998). Experts observed a decline and a shift from swidden farming to other land uses due to negative environmental policy, sustainability conversations, and its consequent socio-cultural and economic repercussions for smallholder farmers, especially food security. However, indigenous farmers continue to find the relevance of swidden farming in their lives as they uphold their worldviews, value their experiences, engage in livelihood diversifications, and persist in swidden farming through compromise with ecological policies. (Dressler et al., 2017; Thung, 2018; Mukul & Byg, 2020; Polthanee et al., 2021)

Despite universal differences in the terms swiddening and shifting cultivation, in Ifugao on the Island of Luzon, swidden farming or *munhabal / munhafa* is a process where a portion of the forest or barren land that was previously a forest is selected to be cultivated with upland crops such as rice, sweet potato, corn, beans, taro, yam, and other crops. Culturally, the swidden farm is found within an area that demarcates the woodlot and the rice fields. When the swidden farm is near a pasture land, it is oftentimes fenced with wood from the forest. It offers supplementary benefits such as keeping rats from going directly to rice fields (Fagyan et al., 2015). Broadly and uniquely, the Ifugao agricultural system is an example of an extensive and intensive system that comprises wet-rice cultivation, swidden cultivation, and forest management. (Acabado, 2012)

The researcher seeks to determine and describe the food security practices, perspectives, issues, and community indigenous governance system for a holistic understanding of such a group of people and to draw insights into community development. It reveals further the dynamics and socioeconomic considerations of food security, swidden farming, and community development as means of intervention. Moreover, the respondents of this study are poor and depend much on community natural resources.

In the Philippines, the swidden farmers who belong to the indigenous peoples are granted tenurial arrangements through the blending of government networks across local and state levels such as Ancestral Domain Sustainable and Development and Protection plans which convey the Department of Environment and Natural Resources (DENR) and Non-Governmental Organizations (NGOs) beliefs, terms and conditions of how IPs should use forests compelling them to reach a deal on swidden farming according to the conditions of sustainability. (Dressler, 2014)

Yet Ifugao's swidden farming practices have changed due to socio-economic and political factors which made it imperative and interesting to study. Globalization, technology, infrastructure development such as road networks; land use change, migration, education; diversification and quality of labor, population increase, and climate change are commonly observable factors of socio-economic and political change in Ifugao communities. Swidden farming as a way to food security entrenches into the niches of the province which are primarily culture, ecology, upland agriculture, and tourism. Through this study, it is noteworthy to know how one of the oldest subsistence practices to which Ifugaos owe their existence continues to survive, adapt, and find meaning in the present times. The results of the study are useful for possible interventions for these poor swidden farmers to achieve food security and thrive sovereignly in their communities amidst challenges in environmental policies, and sustainable, economic, and cultural development. More importantly, other Ifugaos may find sentimental value in it.

One of the most cited world-class scholars on swidden farming named Conklin devoted consistently to studying Ifugao. Conklin considered Ifugao a distinct Philippine field site, and also studied earlier Hanunoo swidden farming (Conklin, 1998). Specifically, Conklin classified integral and partial swiddens. Traditional swiddens are integral while swiddens done by migrants are partial (Conklin, 1957). In this regard, the case study sites of this study comprised ancient community settlements by indigenous peoples and a recent settlement by migrants in the province which became a laboratory for the contemporary understanding of the swidden practice. Ifugao is a landlocked province located in the Cordillera Mountains of Northern Luzon, Philippines. It is famous for its renowned Ifugao rice terraces made by indigenous farmers which are declared as United Nations Education and Scientific Organization (UNESCO) World Heritage Sites.

Pressingly, in this study, the Ifugao indigenous swidden farmers belong to the poorest of the poor. The respondents belong to the Philippine Government's *Pantawid Pamilyang Pilipino* Program popularly called as 4Ps and translated as Bridging Program for the Filipino Family. It is a human development measure of the national government that provides conditional cash grants (CCT) to the poorest of the poor to improve the health, nutrition, and education of children aged 0-18. With these, they deserve better attention. Finally, food security as a practice would be an interest to all as it will show how people who eked out their living in the mountainous communities were able to cope with multi-facet challenges. A multiple case study was used to document practices, unveil perspectives of unique community people, and analyze various issues that served as bases for insights on community development.

Literature Review

On Food Security in Swidden Farming in Indigenous Communities

The FAO (n.d.) as cited in Fisher and Lewin (2013) states, "Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets the dietary needs and food preferences for an active and healthy life. This definition focuses on the four dimensions: physical availability of food that meets their dietary needs, economic and physical access to food, food utilization, and the stability of the other three dimensions over time" (p. 452). From the above-mentioned definition, food security when deduced from the holistic living of the indigenous swidden farmers includes the following suited food determinants: swidden farming practice as food production, alternative sources of income, food consumption and preservation, saving and investment strategies, coping strategies, community participation relative to food security, external interventions, and compliance with government policies. The activities of swidden farming are geared mainly toward the availability of food. Documenting and analyzing these activities would reveal how food is economically and physically accessed. Physical and economic factors to ensure access to food will be covered further by alternative sources of income and coping strategies. Moreover, covering activities from production to consumption as well as if these will be stable would complete the fundamental aspects of food security. Savings and investment strategies, community participation, external interventions, and policies are factors that contribute to stability.

Fisher and Lewin (2013) reveal in detail the aforementioned determinants of attaining food security in rural communities, namely: cultivated land per capita, agricultural field assistance, presence of an agricultural cooperative in the community, annual rainfall, and level of education. Factors correlated to food insecurity include the price of the crop, the price of the fertilizer, the number of household members, and the distance to markets. They mentioned that the readiness of food at the farm households' level should hinge on factors such as cultivated area, use of modern agricultural inputs, and labor availability. These sub-areas on food production are further grounded on the

theory purported by Swaminathan and Bhavani (2013) which states that since food production is the main factor of food availability, it is the foundation for food security.

Additionally, on climate change, Cororaton et al. (2015) maintain that poor rural families that depend heavily on agriculture for a basic living are considerably impacted by widespread dissimilarities in climatic situations from extended summer to the existence of super typhoons. In the parlance of education, the human capital theory views education as a form of investment where individuals compare the direct, indirect, psychic, and opportunity costs of education with the future benefits of education. (Schultz, 1960 as cited in Conchada & Rivera, 2013).

Zeroing in on perspectives, IPs have a different view of world systems which will serve as considerations for forest policy intervention. Change can never be successfully introduced when beneficiaries are not convinced of the initiated change. According to Abad and Eviota as cited in Rivera (2015), poverty is a situation produced by showing anti-development characteristics such as rejection of advancement and opposition to change, which suggests that the poor cause their dilemma for they are accountable for their actions.

Concomitantly on poverty, Swanepoel as cited in Gavino-Gumba (2010) reveals the Deprivation Trap Theory of Robert Chambers that the poor are trapped in a cycle of poverty involving five clusters of disadvantages: a) they are poor, b) they are physically weak because of lack of food and poor health, c) isolated, d) vulnerable, and e) powerless. Documenting the practices and analyzing the issues on food security while being keen on the economic considerations will unveil the reasons and issues why indigenous swidden farmers remain poor and consequently provide better insights for strengthening community indigenous governance systems.

Research Objectives

It was the purpose of this study to a) describe the practices, perspectives, issues, and related community indigenous governance systems in the gamut of food security determinants among Ifugao swidden farmers, and b) determine the practices, perspectives, issues, and related community indigenous governance systems in the gamut of food security determinants among Ifugao swidden farmers.

Methodology

The study made use of the qualitative descriptive approach using a multiple case study method. In-depth interviews were used to yield data from the respondents. There are 15 respondents per case study of the five case study groups as the first case study reached data saturation with said number in the data collection, and became adequately applicable to all the case studies. As of the conduct of the study, the following are the number of DSWD 4Ps household beneficiaries in the case study sites: 32 in Nayon Village, 133 in Namal Village, 40 in Balangbang Village, 23 in Ambabag Village, and 36 in Ducligan Village. The selected 15 respondents in each case study are household representatives. There are 75 total respondents in the five case studies. To be qualified as respondents, the respondents are members of 4Ps and should practice swidden farming and at the same time possess indigenous knowledge, systems, and practices on swidden farming. It is to take cognizance that not all roster of household 4Ps are practicing swidden farming and not all 4Ps are Indigenous Knowledge and System holders on swidden farming. Based on a government survey of their socio-economic background, they are categorized as the poorest of the poor by the government for they were considered at first as the priority among the list of poor in the community.

The government identified the 4Ps. Through strict and sanctioned screening by the Department of Social Welfare and Development, they are classified by the government as poor. Through its Household Assessment Form

of the National Household Targeting Office, the administrative agency could be able to identify the poor and the poorest of the poor based on yielded identification and socio-economic information. Having 4Ps beneficiaries as respondents of the study unburdened the researchers from establishing a profile on socio-economic demographics only to identify the poor for possible intervention based on the results of this study.

Respondents were selected through these criteria so that intervention for community development in this group of people would be possible. In-depth interviews were coupled with on-site visits, direct observation, and photo documentation. Focused group discussions were used to validate the collected data. Respondents were interviewed coupled with data analytic collection techniques. In said technique, concerns that are unclarified were asked from other respondents in the course of data gathering. Protocols were observed such as asking permission from concerned local government unit officials. It is to take cognizance that the researcher himself is an Ifugao who can speak different Ifugao dialects. Cluster thematic analysis was used to group the qualitative data from the interview according to the aspects of food security detailed in the objectives. Narratives from the interviews were used to elaborate the discussions on practice, perspective, issues, and related community governance practices in swidden farming.

Case Study Sites

As to the criteria for selection, considering that Ifugao is comprised mainly of three ethnolinguistic groups, namely: Ayangan, Tuwali, and Kalanguya. However, as known, the Henanga of Mayoyao does not support that they belong to the Ayangan Ethno-linguistic Group so they are classified as Henanga. Also, the Ayangan, Tuwali, and Kalanguya migrated to other areas of Ifugao from their original settlement, and they are classified in this study as migrants. By way of purposive sampling, the ethnolinguistic groups of Ifugao are inclusively represented, to wit: Ayangan, Tuwali, Kalanguya, Henanga, and Migrants. There are distinct cultural practices for each of the ethnolinguistic groups in Ifugao. The *Tuwali* of Kiangan represents the *Tuwali* with the village (Barangay) Ambabag as the case study site. The *Ayangans* of Banaue represent the *Ayangans* with Ducligan Village as the case study site. The *Henanga* of Mayoyao represents the *Henangas* with Balambang Village as the case study site. The *Kalanguyas* of Asipulo represent the *Kalanguyas* with Namal Village as the case study site and the *Ayangans*, *Henenga*, *Kalanguya* and *Tuwali* in Lamut will represent the migrants with Nayon Village as the case study site. The chosen villages were drawn by the researcher based on the dominant homogeneity of their population representing their respective indigenous group in Ifugao. Full representation of all ethnolinguistic groups in Ifugao in this study was ensured.

Findings and Discussion

1. The Practice of Food Security Among Ifugao Swidden Farmers

Swiddens in the case studies have different backgrounds as narrated by the swidden farmers. Ducligan is believed to be the origin of the Ayangan people in Ifugao and an old human settlement in the province. The swiddens are all in the mountains. As to locations, swiddens are located at the upper portions of the mountains, and lower portions of the mountains. The national highway going to Mayoyao traverses these mountains. A considerable part of the village was not yet reached by vehicles during the time of research.

The original swiddens in the village of Ambabag are seen in sloping areas. Today most of the swiddens are abandoned and have naturally regenerated. There were few rice fields then and swiddens were dominant. Today it is the other way around, the swiddens became very few and the wet rice fields occupied the area. Swiddens then were made on the slopes but now, they are also found at the edges of the rice fields (dolya) and hills.

Generally, the ancestors of central Mayoyao (*ihenanga*), where the people of Balangbang belong, engaged in swidden farming that was integral. But swidden farming came first before wet terrace farming. The main crop that was planted was sweet potato. Some areas that were made into swiddens were turned later into rice fields. It took a long time for a forested area that was turned into swidden that was eventually turned into rice fields because they waited for the roots of trees to rot. These events laid down the culture of zoning for the landscapes of forests, swidden areas, and rice terraces.

The Itkas of the Kalanguya group are believed to be the earliest to inhabit the village of Namal. Their swidden farming was integral in that both rice fields and swiddens were maintained. But the land area was more devoted to swidden considering that rice fields were not enough. In the course of events, the integral system was maintained. It is however to note that those who had no rice fields ever since continued swidden farming up to their generations this time. Farmers observed that there was a decline in the production and the quality of products being taken from the swiddens. With the advent of road opening reaching a part of Namal, and with their association with vegetable production in Benguet Province, many swiddens are now being turned into vegetable production. However, because of the road opening reaching a part of Namal, many people are encouraged to open new swidden sites.

The villages where the swiddens are found are located in the mountains. In the eyes of swidden farmers, these mountains have different landforms based on their features such as sloping, ridges, sloping, gently sloping, flat, undulating, and cliffs. It was noted that though the areas for swidden farming are in the mountains, some parts of the mountains have flatter elevations, and some surfaces are rolling and undulating. Ifugao swidden farmers do not see mountains as barely uneven, rather for them, they are rich venues for agricultural activities.

Site Selection

Site selection for swidden usually starts in any of the months of March and April. Though the Gregorian calendar is now being used as a reference for planting season, in the ancient past the Ifugao calendar with the phases of the moon was used to guide socio-cultural and agricultural activities. This guided them in their swidden practices including site selection. They also used natural indicators such as the flowering of the fire tree (*Hablang*), which signals the swidden farming season.

Also, when farmers who do not have land make their choices for swidden farming sites, they seek in advance the permission of land owners to allow their lands to be cultivated which means that they may already make site selection earlier than the usual practice.

Farmers have terms to describe the kinds of potential swidden sites. What comprised the site is what is ascribed to them. For example, if the site is *cogonal*, they are called *maghinulun* in *Ayangan*, *magulun* in *Kalanguya and Tuwali.* There are also other terminologies; for example, a swidden farm that was abandoned for a short time and re-cultivated is called *ublag in Ayangan* and *kabukab* in *Kalanguya*.

Farmers select their sites for swidden based on different reasons. One is on ownership. They till the mountain or areas in the mountain they own. However, in Ducligan, there are differences in ownership and use of swidden lands: swidden as communal property and swidden as private property. In the village of Ducligan particularly in the sub-villages, Gitti and Machantal, individual people do not claim ownership. For example, a swidden is tilled by a farmer, and after fallowing, it will be planted by another farmer (*mapinpinalog*). Used as a communal property, it is to ensure that the best portions for swidden farming in the mountains are cultivated fairly by community members.

Furthermore, in the on-site selection, farmers also consider the quality of soil, climate, terrain availability of land areas and possible damages to be incurred especially at the boundaries. Speaking of the size of cultivated

land, there are many factors in the consideration of area size. The principle is the area to be cultivated depends on one's ability to exploit and maintain.

Land Preparation

Common to all the case studies are the stages of land preparation. Land preparation includes the following stages: slashing, burning, sweeping, and spraying of herbicide. The first stage is slashing. Actual land preparation for a newly opened site starts with this process usually in February, March, and April. This is called *ahiuma* in *Ayangan* or *kahiiuma* in Tuwali. The time for clearing is usually in summer or at the start of the summer season. However, due to climate change whenever the rainy season extends to March, others start the actual operation of the swidden site in April. However, for light brushes, farmers who have money at such times immediately spray the area with herbicide. The kinds of grass matter to farmers. For example, farmers experienced that the most difficult are those weeds that are prolific in seeds and roots.

Burning

Burning usually is done in March or April. Farmers are now conscious of safety measures. They make a fire line before burning. Farmers have their timing for burning to take advantage of the season, the sun's heat, and safety purposes. Farmers are now knowledgeable that burning should start from the top to bottom or from the sides to make the process safer. However, farmers price the state of the soil after burning. Traditionally, burning starts at the bottom of the mountain to make sure that dried matter and the soil are fully burned. This state is emphasized in *Ayangan* as *naghob* (burnt to the soil). According to folk wisdom, the more the soil is burned off, the better. The land is believed to be more fertile and the pests and diseases and seeds of weeds are also burned making crops robust. Farmers then weigh the damages and adopt either of these strategies. At that juncture, the swidden farmer is also a decision-maker.

Sweeping

The remains after burning are swept and gathered for another burning and the remains still are placed at the edges of the swidden farm.

Application of Herbicide or Manual Weeding

For a newly opened swidden, the next stage after burning is planting followed either by spraying or weeding to exterminate weeds. In this case, it is expected that when there is a thorough burning, fewer weeds will be exterminated. A newly opened swidden will have fewer weeds to grow. But for swidden that is to be re-operated, usually in May, after sweeping off the remains in burning, they wait first for the grasses to grow, and these are weeded manually.

In other cases, the reasons farmers do not spray herbicide are either due to financial constraints or as a way to save money. Otherwise, if they have money, farmers agree that they will apply this procedure. Spraying of herbicide becomes an integral part of the swidden cycle, though, at the sub-villages of Gitti and Changtar of the village of Ducligan the practice is less popular.

Planting to Harvesting Practices

On sowing/ planting, the traditional crops are still being planted. Usually in early May, the start of the rainy season or pouring of the first rains, after weeding the first weeds that have grown after burning especially for re-cultivated swidden, farmers begin sowing or planting. It is noted that usually for a newly cultivated swidden, sowing begins when the first rains pour on the debris-cleared swidden. It was experienced by other farmers who did sowing without having the dried vegetation burned that their plants were not robust and were pest-infested.

For corn, when the first rains poured the soil once more dried, this state is called *mabti* in Ayangan. This is the optimal time for planting corn, and the corn is expected to be robust.

Farmers sow seeds using dibble sticks to poke holes in the soil surface at the same time making an approximate distance to the next hole. As the plants grow, they are maintained through manual weeding. When the plants reach a considerable height, the weeds are removed to relieve the rice for example from possible choking. This is called *funhiyan in ayangan*. Maintenance consists of guarding against disease and pests and application of fertilizer. On harvesting, harvest time depends on the kind of crops planted. For swidden with the wider area, harvest is always a community activity. Farmer Martin summarizes his swidden activities:

"If it is the first rain, I start planting. If the swidden is ready, I wait for the rain and call for helpers. One will poke holes through a stick while others follow to plant. When planting is over, I wait for the weeds to grow. Once they grow, I weed. If the rice plants start to grow, I inspect if they are infected. If there is, I spray it with insecticide. If the first weeding is done, when the second batch of grasses grows, I clean them. If starts to bear flowers, I look for pests (changaw). If there is, I spray it with the appropriate insecticide. I start cleaning the surroundings to prevent rats from intruding. If it starts to be pregnant, I start making scarecrows to be used in driving Maya birds. I do not start to make scare scarecrows when the Maya birds watch me. If I am the first to make the scarecrow, the birds will notice that someone is guarding the swidden field, and the birds will move to the other swidden fields. If it is ripe for harvest, I call for the help of others. I may use a modern sickle as a way to harvest or harvest them in bundles which means I use finger finger-bladed knife. I bring the harvest home. I dry them immediately under the sun. If there is no food available, I subject some for threshing. If food is available, at least, I stock them for two weeks. When it is harvested and eventually dried and when immediately polished, it is easily consumed because I believe that grains are not crushed."

The Ifugao swidden farmers have maintained swidden farming as a way of life and for survival despite the challenges of the practice. This is also true in the study of Mukul and Byg (2020) that swidden is significant in the living and income, especially for indigenous farmers with fewer opportunities.

Evident in the practice of swidden farming are changes like the use of synthetic materials due to modern environmental factors, safety precautions especially in the burning stage, swidden activities resulting from land use changes like the expansion of wider swiddens, and labor-related factors. The swidden farmers to achieve food security continue to adapt to these changes by using these external factors to ensure one's preservation in the communal life and the ability to cope with life's emergencies. Nevertheless, the indigenous swidden farmers persist and make the most of life amidst the swidden changes. Similarly, according to Thung (2018), swidden was essential for the survival of a large part of the populace in Kapuas Hulu. Despite the government ban on the use of fire, stakeholders described the importance of the use of fire in the swidden. To them, fire after consuming the cut vegetation, removes weeds, and ensures fertility and harvest. Swidden farmers persevere for subsistence living despite the ban on the use of fire. Polthanee et al. (2021) stated that land use change from swidden to rubber farming resulted in high vulnerability and loss in food security among swidden farmers. But the difference is that the Ifugao swidden farmers do not focus only on one alternative to swidden.

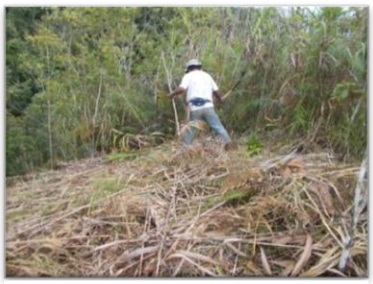

Figure 1 The slashing stage.

Figure 2 A typical site for a slashed area in a reed-covered mountain.

Figure 3 Swidden farmers are taking their break during an *uubbu*.

Figure 4 A woman shares her betelnut during a break.

Figure 5 Farmers are eating their snacks during an uubbu; taking a break no longer with traditional sweet potato but with pancakes which were brought through a traditional container.

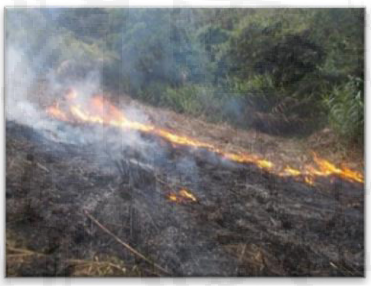

Figure 6 This is during the burning stage.

Figure 7 Weeds that grow after the burning are removed.

Figure 8 The sweeping stage of the swidden.

Figure 9 Men poke holes while women place seeds.

Figure 10 A seedling stage of upland rice. This state when seeds are sprouting is called *kamelmel*.

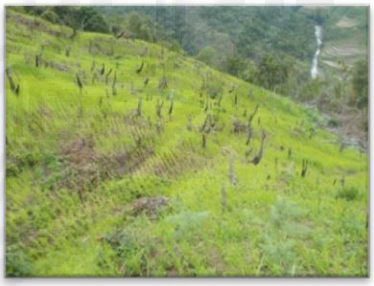

Figure 11 A swidden planted with upland rice. The trunks of trees were maintained.

Figure 12 The flowering stage of the upland rice.

Figure 13 The rice in its ripening stage (neteng).

Figure 14 The rice reaches full maturity of grains (nakateng). Noticeable are trunks of shrubs and trees still standing.

Figure 15 The uubu system during harvesting.

Figure 16 Women doing ububfu practice. At their back are pigeon peas. They are planting taro just after the first cropping.

Indigenous Knowledge Systems and Practices

Among the indigenous practices that surfaced from what the Ifugao swidden farmers can remember include a community consensus and planning to endeavor swidden farming, the emphasis on weeding, waiting for good signs, conducting the survey before operation, the performance of routine practices or work stages, and upholding work values and appropriate use of material culture which form part of the local food production knowledge. Some IKSPs coexist with some forms of agricultural practices in terms of planning, maintenance, and farmers' tender loving care practices. The original work stages in swidden farming are: 1) site selection, 2) clearing, 3) burning, 4) planting following the planting cycle for crops, 5) weeding, 6) harvesting, and 7) fallowing. Weeding was highly regarded by ancestors and the primary practice in the swidden that is given emphasis.

Farmer Agapita informs, "One among what our ancestors taught us was that when the weeds grow, the weeds must be weeded immediately".

Figure 17 In early childhood, the child learns swidden farming by observing and participating in swidden farming.

Gender Roles

Traditionally, in swidden farming, men had distinguished roles from women. Men did the clearing and building such as cutting trees, carrying heavy loads, and putting up a swidden shed while women did the weeding. This practice in the village however is now changing. Men and women do share tasks in an egalitarian manner. Gender dichotomy in the swidden has significantly changed. Women perform the tasks of men as socially known. Women with bigger children could do a variety of tasks outside the house. Child rearing affects the maximization of one's potential to perform other functions in society. Farmer Juanita clarifies, "The real work of men is slashing and burning but women are not forbidden to assist so long as they can but in terms of carrying heavy loads of trees that were cut, it is the men who do it. The traditional practices include the men were responsible for clearing and after burning, the women come to plant and weed while the men assist by poking holes through pointed sticks where the women will place the seeds".

Alternative Sources of Income

Alternative sources of income covered labor, animal production, rice field production, and selling their produce in the market. On labor, farmers however accept manual labor to augment their income. They offer services like weeding, gardening for the entire day, carpentry, and stonewalling. Women swidden farmers offer traditional functions primarily through weeding, which they learned from swidden farming, while men too offer stonewalling, carpentry, gardening, labor for construction works, and carrying of loads, etc. It was noted that women also sell their products from swidden at the market. Farmer Maria maintains, "I do swidden farming and paid labor but if there are unconsumed harvests, I sell them so I can buy other kinds of food".

In animal production, livestock raising is part of the Ifugao culture. Farmers' traditional animals are fowl like chickens and ducks. It also includes pigs and dogs. Aside from the native chickens, farmers have other types of recently introduced local chickens. Native ducks are still the ones being produced. Traditional native pigs are now less popular; lowland native pigs are more popularly grown. Some farmers maintain a combination of hybrid and native pigs. Farmers grow dogs primarily to serve as domestic guards. In rare instances, they are cooked during occasions, usually a meal, a sumptuous lunch in particular, for cooperative systems. Chickens and ducks are used to augment income and food. They are usually sold during market days.

Figure 18 A swidden farmer tends to her chickens. Feeding them closely is a part of the taming process of animals.

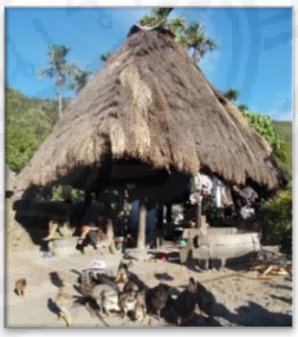

Figure 19 Chickens are fed with leftovers. Poultry animals are allowed to roam in the community to scavenge food and play to allow their faster growth and production.

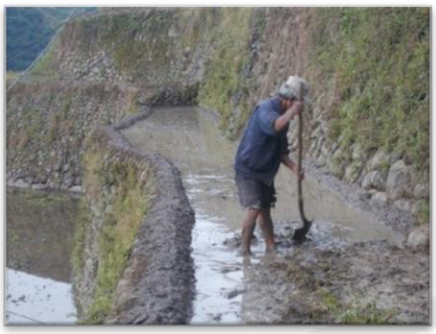

Figure 20 Farmers have to use stairs to clean dikes. The dikes are wider to be cleaned than the rice pond.

Figure 21 The paddies are well cleared and the winged beans are beginning to wrap the poles. As another source of food, a farmer would later harvest winged beans (Buligan). The rice field is optimized by planting buligan in the rice paddies.

Figure 22 A swidden farmer goes to the village center but brings some native onions to be sold in exchange for salt and lard.

Figure 23 The indigenous skills of stonewalling is a paid labor used in this government project.

Mukul and Byg (2020) found similar findings that indigenous Chepang swidden farmers in Nepal particularly engage in swidden cultivation, sedentary agriculture, small business, and others to ensure their major income sources. Said study and this study show work diversity among indigenous swidden farmers to ensure food security. Unique in the findings of this study is that the descriptive result captures the humanistic elaboration of the lived experiences of the Ifugao indigenous farmers depicting the worth and enjoyment of their labor in their culture.

Food Consumption and Preservation

Food consumption and preservation cover acquisition, storage, preparation, serving feeding/eating, and waste processing. On acquisition, farmers undergo processes when harvesting their products. When unearthing root crops, they weed first the area before harvesting. For distant swidden that are not accessed by public roads which is mostly the case, farmers have to move the products physically. On post-harvest activities, after the harvest, drying is done especially for grains while tubers like sweet potato and taro root fruits are not dried. Drying as a way to lengthen the storage of harvest is through direct sunlight, natural air, or smoking.

The segregation of seeds is considered in harvesting. The harvests from the swidden are brought home primarily for consumption. In this case, the swidden as a subsistence cultivation system is reflected. However, surpluses are sold for cash. With this, farmers admit that swidden farming alone is not enough to buy machines, appliances, or lands, which are the indicators of modern living for them. The surplus is turned into cash primarily used for basic needs. Farmer Jose discloses, "If the food is enough, I sell the remaining for cash so I can buy other needs like salt".

On preparation, food preparation before a meal involves washing dishes and pots, fire building, and cooking for the menu. The menu follows three preparations: 1) the preparation for rice, 2) the preparation for viand, and

3) the preparation of condiments. The staple food among farmers is rice. Farmers prepare rice intending to have the right mixture. Farmers also prepare different foods for their babies. Porridge added with vegetables could be given to babies. Ancestors however did not make porridge. One or more viand can complete the meal. The farmers prepare their food before consumption using different techniques for different harvestable crops. Food preparation is still a trace of old customs and an introduction to the modern world. For example, boiling is a traditional practice while doing sauté is modern. On traditional cooking, according to Conchita, "I cook rice, I boil vegetables, prepare the salt, and eat afterward". On contemporary cooking, Farmer Tomasa informs, "I cook and I like to sauté with ginger". On waste processing, swidden farmers eat what is left from the previous meals but the spoiled food is not thrown away. It is given to animals.

Figure 24 A swidden farmer just arrived from the swidden carrying a basket (allawin) full of mongo beans.

Figure 25 Mongo beans are being spread evenly for air drying upon taking them from the swidden. After this, it will be sun-dried once sunshine appears.

Figure 26 Some mongo beans are placed in a jar and kept as seeds.

Figure 27 Chopping of wood for firewood by a father.

Figure 28 The swidden farmer successfully cooked her mongo beans where she derives soup.

Figure 29 An Ayangan father feeds his child.

Figure 30 The sweet potatoes are strained in a strainer called hangcha.

Savings and Investment Strategies

Savings and investment strategies cover monetary ways of savings, education, acquired assets, and cooperatives. In monetary ways of saving, farmers save cash when it is available. Farmers invest in their farm implements, animal production, lease lands, education, and membership in cooperatives. They however are not fond of depositing their money in commercial banks. For example, on education, farmers invest their money or proceeds from the swidden and other sources of income through animal production, purchase of materials, and education with the hope of a return on investment and better outcomes. However, the primary goal of farmers as

parents is for their children to have jobs in the government or other reputable institutions. Farmer Nena mentions "Given that I already earned my pay for a day, it is spent for kitchen needs. It is given to the children for their schooling. The remaining is used for necessary expenses when doing labor or used in looking for a job".

Coping Strategies

The actual practice of coping strategies covers borrowing money, disposal of animals, asset lease/sale, and household size. On borrowing money, in times of difficulty, the first thing that farmers do is borrow money. There are lenders in the community who lend with interest. However, others lend without interest. Traditionally, Ifugaos borrowed first from their closest family members, but this time, some farmers reveal that they prefer to seek even from non-family members who are close to them. Farmer Sixto reveals, "I borrow money just like the others, and I work to pay my debt".

On household size, traditionally, greater children were considered a kind of wealth among Ifugaos. The belief was, that the more children you have the wealthier you are since power before when there was no government in Ifugao was based on the influence of the family. To be more influential such as the ability to demand and punish would require a bigger family/clan population. This has been changed this time. Fewer children who are well-financed and cared for are better than having too many children who turn out to be problems in society. Farmers adopt strategies to cope with their household size. Relatives are also accepted by family members to live and form part of their household.

Community Participation Relative to Food Security

Community participation relative to food security covers mainly cultural practices, civic practices, and government-initiated activities. In cultural practices, food security is achieved through the community even in the present cash economy. Culturally, due to the absence of technology, farmers cooperate to ease work and for works that could not possibly be done individually. Aside from the cooperative system in the swidden, swidden farmers participate in community cultural activities that encompass life cycles such as weddings, funerals, and life cycle celebrations. These activities involve food as avenues for cooperation in the form of meals eaten together by the community, meat shared with relatives and those who had a vital role, pigs or water buffalo bought through the contribution of family members, chickens and ducks shared by neighbors as meals, and many more. In Ifugao culture, being wealthy is not merely possessing properties, but rather one's wealth should be shared with people in the form of celebrations.

Figure 31 Men are preparing for the mealtime. Men place the meat in the stick to facilitate efficient distribution and ensure security.

Figure 32 These are chunks of meat given to the researcher upon visiting the village which happened that there was an event. The first layer is the skin and the fat part; the second layer is the lean meat and the third layer is the intestinal part. All parts are in one stick. This means that all the said parts are equally savored, distributed and tasted by all community people.

On Civic Practices and Government-initiated Activities

On civic practices and government-initiated activities, institutions of the government primarily through the village (barangay) government which is the lowest and basic tier of local government are primarily responsible for the delivery of basic services such as agriculture. There are activities that the barangay government initiates that involve the participation of farmers. Among this includes the participation in annual town festivities that center on the agro-trade fair. They are attended by the general public. It is during these events that farmers are given the chance to commemorate their folkways. Also, they earn from these activities through their swidden products.

On civic participation, there is a growing consciousness of civic participation. Swidden farmers are usually integrated into the farmers' organization. However, as swidden farmers, they do not have a specific organization. The school also seeks the assistance of community people to prepare the school before the start of classes. Farmers with expertise such as weeding, cleaning, and stonewalling participate in this activity. In so doing, the children are unburdened from being mobilized at the beginning of classes to prepare for the school facilities. They could now immediately start their classes on the first day of classes.

External intervention is focused on government-based assistance. On government-based assistance, farmers revealed that the most impactful infrastructure intervention is the concreting of access roads, the construction of cemented pathways in the sitios, and the cementing of irrigation systems. On the other hand, the most felt interventions in the social parlance are the 4Ps and Philhealth or National Health Insurance Program. They also felt the increase of dole out government programs (*Ayuda*) Farmers elaborate on how these programs help in letting their children go to school and a way for social protection. The external interventions to swidden farmers relative to food security come mainly from the government through the LGUs and administrative agencies such as the Department of Environment and Natural Resources, the Department of Social Welfare and Development, and the Department of Agriculture. There is also the presence of NGOs like the Peace Corps and foundations.

Figure 33 The community people are listening to a lecture on health.

Figure 34 Senior citizens participate during a town festivity, and so with farmers.

Compliance with Government Policies

Compliance with government policies covers mainly environmental policies. Swidden farmers are aware that some environmental policies like the burning of forest areas are prohibited. DENR personnel visited them to explain information related to this. They mentioned that when these policies were mentioned to them, they insisted on the need to survive through practices that would meet between the preservation of the environment and the people. Farmer Matabye asserts, "The DENR discourages swidden farming but in Ifugao, it cannot be totally removed because it is the source of income".

2. Perspectives on Food Security Among Ifugao Swidden Farmers

Views on the Value of the Swidden

Farmers have varying views on the value of the swidden. Swidden is a main source of food and livelihood. Swidden farming is life for them. Swidden farming supports more activities of life than wet rice field production because it provides a diversity of needs such as food, viand, support for animals, and cash. On the other hand, swidden is viewed as a supplemental source to add up what is lacking as they see that employment is not continuous. A swidden farmer does not view establishing a swidden as equivalent to destroying a forest just for a swidden to be established. Rather, the forests are regarded highly. Farmers assert that production sites are demarcated such as those purposely for swidden farming. They also observe the fallowing of swidden to allow regaining of fertility. Perspectives on other sources of income include labor as a whole and animal production. On the value of labor, for example, swidden farming is a necessity for living, and it is a way for them to reach self-fulfillment. Food consumption and preservation cover acquisition, storage, preparation, serving, eating, and waste processing. On acquisition particularly on the value of prudence in food acquisition, the need to diligently acquire food in the swidden is given importance because neglecting the said practice will leave the farmers nothing based on their experience. Farmer Gloria discloses, "For me if I did not inherit a rice field. I have to find a swidden so I have a source of living for my family because it is not a joke to be living with people. For me who does not have any work in the government, swiddening is important because it is the only work, I know". Moreover, Farmer Mario, states "The swidden is used as a way to supplement what I earn".

Results of farmers' perspectives on swidden land use and changes were underscored by Mukul and Byg (2020), that the number of farmers who wish to continue swidden is higher in the case study village of Shaktikhar compared to Jogimara Village. Although, in said study, there was a decline in swiddening among indigenous farmers, swidden farming remains significant in their lives.

Views on Monetary and Non-monetary Ways of Saving

On monetary and non-monetary ways of saving specifically on the value of monetary ways of saving, saving money is important for emergency purposes. A swidden farmer will have the reserve to fall back on. On the value of education, education is highly valued as the best form of investment for their children. Education is seen as a necessity to exist in society this modern times. Education is a way for them to redeem their past. Education is believed to be a way for their children to be employed so that they will have better lives. They do not want their children to be like them.

Views on Coping Strategies

Coping strategies cover the value of the credit, asset sales/leases, climate change, and household size. On the value of the credit, credit lines were emphasized. Credit lines are valued by farmers because they are answers to monetary problems needing immediate attention at moments when a farmer has nothing. On household size, the value of the number of children that a couple has was given importance. Farmers see that couples should multiply (*mahlag*), that is, to produce a generation to achieve the purpose of marriage. Farmers observed that there is a greater tendency for a couple without children to separate. This emphasizes the binding force that children give to couples. Farmers value children because of their futurity. Their children will take care of them in their old age.

Views on Community Participation

Community participation covered the value of cultural practices and civic practices. Farmers value cultural practices relative to food security because it becomes the avenue to strengthen the sense of community. The cultural practices provide the face-to-face encounter to understand the behavior of others, and to nourish relationships. Likewise, these cultural practices such as cooperative activities make work in the community easier and faster.

Views on External Interventions

Views on extremal interventions covered mainly the value of government-based assistance. On the value of government assistance such as 4Ps, farmers see 4Ps and other assistance programs as a source of relief for their financial problems and life problems. They value these programs because they directly benefit their children. On the value of forest policies, farmers perceive that the prohibition of swidden farming under environmental laws should be taken in an understanding of the situation. Farmers assert that there is a cultural land use plan for the community such as the traditional forest zones and the production sites such as the swidden and the rice fields.

3. Issues, Problems, and Difficulties Encountered in Food Security Among Ifugao Swidden Farmers

Environmental Degradation

One of the issues raised is environmental degradation. The more swidden is cleared, the more trees are cut if the swidden is not replanted by trees, though their ancestors taught them about forest management. Farmers admit that water and topsoil were more abundant before. The trees cut were changed to grasses, and the water-producing trees have decreased in number every time a new swidden is opened. Farmer Anna explains, "The soil slips or erodes. This time the soil is softened so that when it rains, the mountain easily erodes".

In the study of Mukul and Byg (2020), they mention in their results that indigenous swidden farmers of Shaktikhar village considered swidden farming as environmentally unsustainable land use. Both showed the possible negative environmental impacts of swidden farming especially on spatial and landscape parlances. But in this study, the good integral forest management system among Ifugao swidden farmers models possible sustainable practices, and the same with the good practices of indigenous swidden farmers that can be empowered to abate environmental degradation.

Fatigue and Hazards

When the size of the cultivated land was discussed, the effects of swidden farming emerged. These are fatigue and hazards. Farmers see hazards that a swidden farmer may incur including possible accidents, and exposure to insects, animal bites, poisonous plants, fire, and smoke. Farmer Mathew depicts, "The task is really difficult that one needs sacrifice with the continuous difficulties he/she faces".

Problems from Planting to Harvesting like Pests and Diseases

Among the problems from planting to harvesting include pests and diseases, depleted soil, typhoons and heavy rain, climate change, back-breaking heavy loads, the emergence of new weeds, the fading cooperative system, and the changing role of children in the swidden. For example, on pests and diseases, traditional crops are also attacked by pests and diseases. This holds not only in swidden but both vegetable and rice field production. Moreover, a lot of the heirloom traditional crops became extinct. Farmer Monang testifies, "The sweet potatoes are affected. They are eradicated. It has been three years now. What they plant now is taro but few plant it". Farmer Entoman explains, "The problem today is that for three years the sweet potatoes have been attacked by a virus (tungro) such that when we plant, the sweet potatoes die. It grows well and looks healthy but later dies with its stems rotten".

Health Issues

With the influx of convenience food, farmers have fear in preparing food. For example, viand which is easily prepared, and food enhancers that are used for the food to appeal to children, are believed by farmers to be detrimental to one's health. Eating vegetables is not rewarding for children.

Difficulties on Savings

Saving is a difficulty for farmers due to meager resources. Farmers in the sub-villages express that the town center is far for them to deposit money for savings. On education, farmers agree that despite government intervention, they lack resources to provide the necessary needs of their children. Farmers are stressed about how to pay the borrowed debt.

Lack of Community Participation

In civic and government-initiated activities, a lack of community participation was highlighted. Government or civil society-initiated activities are not natural to the culture of the Ifugaos; they may attend or not these activities. People are also preoccupied with activities that sometimes would not permit them to attend these activities.

Government Assistance-related Problems

Swidden farmers who are members of the 4Ps complain that beneficiaries of the program are selective. Moreover, farmers complain that deductions from government assistance due to disobedience are heavy for them. On the other hand, with assistance from a forestry institution, farmers noted that mono-crop fast-growing tree production of G-Melina which was earlier given through government support, reduced social equity such as decreasing the level of water derived and not allowing crops to grow beneath the trees. Farmer Celia narrates, "We have abundant water before even during summer but now we have a scarce volume of water in the brook and the river. My observation is the coming in of G-Melina which has so many effects even though it is very helpful just like it is a source of firewood, but it brings so many disadvantages".

Forest Policies

Finally, farmers mentioned that they do not see problems with government personnel who implement forest policies because they adapt them to the situation of the villages, like protecting the forest-intensive areas, and not

focusing on swiddens being tilled by farmers. To them, problems will only arise when the law is fully enforced, that is when swidden farming is prohibited as a practice.

Figure 35 This is a close-up view in the late afternoon of a mountain turned into a swidden.

Figure 36 The swidden farmer brings together the cogon grasses that were earlier sprayed with herbicide to be burned.

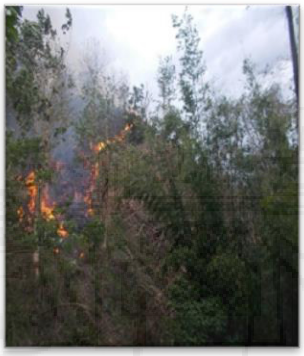

Figure 37 A portion of the mountain is about to be cleared by consuming fire. A swidden farmer guards the fires. Starting burning above will make the fire make the fire manageable but with less intensity to consuming cut vegetation which makes it less advantageous to the swidden farmer because it is believed that burned to the soil state will yield robust crops. This is the swidden at its burning stage. One may view an indiscriminate burning of an ecosystem but to a swidden farmer, he merely wants to see the extent of the soil burned and the amount of stuff remaining to be cleared.

Figure 38 The farmer is dismissed from work at nearly nighttime. Swidden farmers value working even to such a time to evade the intense heat of the sun from about noon time to early afternoon.

Figure 39 A swidden farmer prepares his insecticides to be sprayed on plants. This application of synthetic materials has brought ill effects to the health and ecology of the community.

Figure 40 Areas with no access road demand backbreaking loads from swidden farmers.

4. Related Indigenous Governance Systems in the Community

Ubbu/Ububfu/Uubu System in the Swidden

In the community indigenous governance system, the practice of *ububfu in Ayangan*, *ubbu in Tuwali*, and uubu in Kalanguya is a cultural practice whereby a farmer in the swidden seeks the help of two or more farmer friends depending on the bulk of work to be done at the swidden and will be reciprocated in the same manner by the farmer who invited them. This is the same with other works in the community such as works in the rice field. The pragmatic practice is founded on the principle that an individual cannot stand alone. The practice of a community governance system starts during the slashing stage and it is performed in the swidden farming work stages, especially on the most difficult tasks. Farmer Tayaban elucidates,

First, we have to survey the land area if it is favorable for farming. Now, we conduct the clearing. It can be by the *uubbu* system or simply we will do it as a family activity. If we have a wide land area to farm, we utilize the *uubbu* system. Usually, the clearing activity starts in the months of February to March so by the first week to the middle of April, we can already burn the cut vegetation and is ready for planting. This stage can be done also through the *uubbu* system. It goes the same with the maintenance of the swidden farm, depending on whether the owner is having a hard time maintaining his/her swidden. *Uubbu* system is favorable because it is efficient. Mostly, planting is done in the last week of April until May. Some do plant even until the middle of June. But the most appropriate time to plant is May so that the plants cannot be affected by the typhoon and the rainy season. During harvest season, *uubbu* system is also utilized. The *uubu* system is widely utilized in Barangay Namal in all the swidden work stages. If harvested, the rice grains for example would be transferred to the house of the owner through the *uubbu* system.

Danga/Changa, Man-li, and Baddang Systems

The indigenous governance systems consist of the following. When compared, ubbu is a reciprocated labor as discussed earlier. Danga or Changa is based on purely volunteerism and the nature of work extended may include house construction, indigenous engineering, carrying of logs, and other works in the community. Baddang is a general term for volunteer work or contribution especially during emergencies, and said help may come in the form of money, material, or labor depending on the nature of one's need. Many of the community problems related to food security have been resolved through this indigenous governance even up to this time. Traditionally, the Ifugaos do not have a government but community issues, problems, and concerns were resolved through indigenous governance systems under kinship systems.

Unique to other ethnolinguistic groups is the presence of the *man-ili* system among the Kalanguyas. Here, people in a hamlet or sub-villages organized themselves to do cooperative and mutual support. They help one another at the swidden, in repairing irrigation systems, during deaths and weddings. Today, the same way of

governance still functions. They contribute to assisting a family whose members will celebrate a wedding. They also bring firewood, make temporary sheds, prepare banana stocks as plates, winnow rice, cook, and perform other activities according to their gender. The strategy is at least one among the family members is sent to represent his/her family in the work at hand. During these activities, the host who calls for help usually provides the meals for the worker. Also, during weddings done at a distant place where the members of the *man-ili* cannot physically work, they send their contributions say 100 pesos per household.

The *man-ili* in Namal comprises usually 50 households. The difference between the *man-ili* now and before is that now they have already their written constitution and by-laws and elect their officers while traditionally the rules were unwritten, and leadership was in the hands of the council of elders under consensus decision-making and qualifications were based on wisdom, articulation, integrity, and performance.

However, due to the cash and cashless system, the ushering of new paid kinds of jobs in the economy, and the presence of superior technology, there is a declining practice of this culture. The indigenous governance system has changed from a community norm to a decision-making process of a swidden farmer in a community where labor is becoming popular. Farmer Cecilia went on to say:

"When I was young, I witnessed how people before were accustomed especially the young ones to the indigenous governance systems like ububfu. That was the practice before that when there is a big work to be done that needs people, the people are readily available to be called upon. Today, people prefer daily paid labor. They refuse *ububfu* system. This time there is a problem just like the calling for people to clear a blocked irrigation system. The tradition was that after the planting of rice, the people gathered to go and tap the water for irrigation. But today, people rely on the funding of the government. Before it is December, they already do seeding but this time it is already February when they do seeding. It is already January when they do the transplant. The rice field is also clean but this time because there is assistance from the government, they do not clean and the same is when the terrace erodes, they wait for assistance from the government. These are the reasons why people are spoiled and the spirit of volunteerism was gone yet these farmers are supposedly obliged to do".

The important and unique indigenous governance in achieving food security Iike the *ubbu*, *danga*, and *baddang* practices among the Ifugaos are fading due to the present economic system, but these can be preserved by the government and civil society by interfacing them with the implementation of government and civil society programs, projects and activities in the community. Interventionists may also encourage indigenous governance systems to be used in the evolving private individual works in the community, and superior technologies that are to be encouraged and introduced are those that preserve group or community work.

Figure 41 Farmers converse with a sense of humor as they gather inside a swidden shack to have their coffee break during an uubu.

Figure 42 The trail is maintained by community people through danga.

Figure 43 In the spirit of the Filipino Bayanihan or Baddang in Ifugao, through the DepEd Brigada Eskwela Program, classrooms are prepared by parents before pupils come for the opening of classes.

Figure 44 Men are removing a big stone. This difficult instance in a distant community where superior technology is absent will necessitate the help of others.

Figure 45 The *Ubbu*, a cooperative practice, during the planting stage.

Figure 46 Together the men and women farmers eat their sumptuous lunch during an *ubfu*.

Conclusions

On swidden practices, Ifugao swidden farmers adapt to varying geographical constraints to attain food security. Living in a modern capitalist system but in provincial life, they are losing their community indigenous governance practices to give way to the cash and cashless system and convenient living. They mainly apply traditional knowledge in their means of food production, but their practice is being altered by hybrid practices primarily by the use of synthetic materials and modern implements. Swidden as a way of life significantly contributes to food security but only to a matter of subsistence. Swidden farmers, therefore, adapt to daily wage labor and use their traditional knowledge and skills to cope with modern living including current food security. Their swidden is a springboard to gain a considerable amount of money by providing feeds for their animals at the same time the source of their protein and to celebrate their successes. They use their traditional knowledge to produce and preserve food not only ensuring having three square meals a day but to obtain surplus and availability at the longest possible time. Their dream for their children, the center of their value system, is for them to be employed in modern institutions. Therefore, by all means, they invest in their education and future of which food security is a part, and reflect further their prioritization. They use meager resources and skills to cope with life's struggles. The Ifugao swidden farmers did not lose their sense of community in achieving food security but considered first filial functions over civic obligations in the life world. They are open to government interventions and blend with government policies when achieving food security, though government policies are not inclusive of traditional swidden farming.

On perspectives, contrary to being destructive, the swidden farmers are developmental but not the same as deep ecologists. The swidden farmers approach difficulties in attaining food security with forbearance. They have always been inclined to what is convenient and efficient. They are selective in applying the culture of their ethnolinguistic

group when it comes to food security guided by the value of pragmatism. The Ifugao swidden farmers do not only take importance for material possessions such as food, land houses, animals, and forests but other finer and intrinsic things such as a sense of family, community, and the sense of worth that labor gives while achieving food security. On the other hand, food and its availability are not merely utilitarian but involve rather social interdependence, spirituality, and the free individual swidden farmer. All of these pursuits in food security are anchored on their children who give them hope and a sense of futurity. Interventions therefore that deal with family and children's welfare attract their attention, but civil society life is not natural to them.

Aside from physical fatigue and inherent difficulties that swidden farming brings, the modern Ifugao swidden farmers are currently confronted with ecological problems primarily by the proliferation of insects, pests, and weeds, and the effects of climate change. Their indigenous governance is eroding. They lack the capital and technical know-how (agriculture knowledge, entrepreneurship, and business management) should they want to leap from the routines or cycles that entrap them from attaining modern prosperity.

Highlights from the results of the study were creatively deduced for possible intervention programs to improve the socio-economic and political conditions of swidden farmers. Weaknesses reflect the need for environmental education and inclusive policy, capacity development for entrepreneurship, business, and management while the strengths and opportunities include the availability of indigenous governance systems, many multi-sectoral partners, and ample external opportunities. Thus a framework could be creatively drawn with the following salient points: 1) Possibility of education on ecology, 2) Possibility of capitalizing on human empowerment through existing cooperative and mutual systems such as *ubbu*, *danga*, and *baddang* as unique governance systems, 3) Possibility of seizing opportunities in the current wave for organic agriculture, 4) Possibility for entrepreneurship, skills development and business education and capacitation, 5) Possibility for strong multi-sectorial support: government, civil society, and business, 6) Possibility for continuous research and development, and 7) Possibility for cultural preservation and development.

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References

Acabado, S. (2012). The Ifugao Agricultural Landscapes: Agro-cultural Complexes and the Intensification Debate. *Journal of Southeast Asian Studies*, *43*(3), 500-522. https://doi.org/10.1017/s0022463412000367

Cairns, M. F. (Ed.). (2015). *Shifting Cultivation and Environmental Change: Indigenous People, Agriculture and Forest Conservation*. New York: Routledge.

Conchada, M. I. P., & Rivera, J. P. R. (2013). Assessing the Impacts of Food and Non-food Grants on Poverty Alleviation in the Philippines: The Case of Pasay City. *Malaysian Journal of Economic Studies*, *50*(1), 53-78. Retrieved from https://mjes.um.edu.my/index.php/MJES/article/view/2868

Conklin, H. C. (1957). *Hanunoo Agriculture, A Report on an Integral System of Shifting Cultivation in the Philippines (Forestry Development Paper 12)*. Rome: Food and Agricultural Organization of the United Nations.

Conklin, H. C. (1998). Language, Culture and Environment: My Early Years. *Annual Review of Anthropology*, *27*, xiii-xxx. https://doi.org/10.1146/annurev.anthro.27.1.0

Cororaton, C. B., Inocencio, A. B., Siriban-manalang, A. B., & Tiongco, M. (2015). A Conceptual Framework for Estimating the Impact of Climatic Uncertainty and Shocks on Land Use, Food Production, and Poverty in the Philippines. *DLSU Business & Economics Review*, *24*(2), 13-31.

Dressler, W. (2014). Green Governmentality and Swidden Decline on Palawan Island. *Transactions of the Institute of British Geographers*, *39*(2), 250-264. https://doi.org/10.1111/tran.12026

Dressler, W. H., & Fabinyi, M. (2011). Farmer Gone Fish'n? Swidden Decline and the Rise of Grouper Fishing on Palawan, Island, the Philippines. *Journal of Agrarian Change*, *11*(4), 536-555. https://doi.org/10.1111/j.1471-0366.2011.00309.x

Dressler, W. H., Wilson, D., Clendenning, J., Cramb, R., Keenan, R., Mahanty, S., ... Lasco, R. D. (2017). The Impact of Swidden Decline on Livelihoods and Ecosystem Services in Southeast Asia: A Review of the Evidence from 1990 to 2015. *Ambio*, *46*, 291-310. https://doi.org/10.1007/s13280-016-0836-z

Fagyan, V. G., de Castro, M. L., Basilio, F., Dulinayan, V., Baliao, R., & Dimog, N. (2015). Pamaptok Tuh Binoltan Caring for our Heritage'. In S. Ngohayon, M. L. D. Fang-Asan, & L. Dulawan (Eds.), *Voices from the Cordilleras Guardians of the Forest, Stewards of the Land*. Philippines: Cover and Pages Publishing.

FAO. (n.d.). *Indigenous Peoples*. Retrieved from https://www.fao.org/indigenous-peoples/en/

Fisher, M., & Lewin, P. A. (2013). Household, Community, and Policy Determinants of Food Insecurity in Rural Malawi. *Development Southern Africa*, *30*(4-05), 451-467. https://doi.org/10.1080/0376835X.2013.830966

Gavino-Gumba, B. (2010). Economic and Social Dimensions of Rural Poverty in the Poorest Province of the Philippines. *The International Journal of Interdisciplinary Social Sciences: Annual Review*, *5*(6), 361-380. https://doi.org/10.18848/1833-1882/CGP/v05i06/51758

Li, P., Feng, Z., Jiang, L., Liao, C., & Zhang, J. (2014). A Review of Swidden Agriculture in Southeast Asia. *Remote Sensing*, *6*(2), 1654-1683. https://doi.org/10.3390/rs6021654

Mukul, S. A., & Byg, A. (2020). What Determines Indigenous Chepang Farmers' Swidden Land-Use Decisions in the Central Hill Districts of Nepal? *Sustainability*, *12*(13), 5326. https://doi.org/10.3390/su12135326

Polthanee, A., Promkhambut, A., Aditto, S., & Phasouysaingam, A. (2021). Impact of Changing Swidden-based Farming to Rubber-based Farming on Food Security in Luang Namtha Province, LAO PDR. *Sustainability*, *13*(14), 7617. https://doi.org/10.3390/su13147617

Preston, D. (1998). Changed Household Livelihood Strategies in the Cordillera of Luzon. *Journal of Economic and Human Geography*, *89*(4), 371-383. https://doi.org/10.1111/1467-9663.00036

Rivera, J. P. R. (2015). A Repeated Cross-section and Pseudo Panel Analysis of Alleviating Poverty in Developing Economies: The Philippines Case. *Journal of Economics and Economic Education Research*, *16*(1), 235-257.

Swaminathan, M. S., & Bhavani, R. V. (2013). Food Production & Availability-essential Prerequisites for Sustainable Food Security. *The Indian Journal of Medical Research*, *138*(3), 383-391. Retrieved from https://journals.lww.com/ijmr/fulltext/2013/38030/food_production___availability___essential.21.aspx

Thung, P. H. (2018). A Case Study on the Persistence of Swidden Agriculture in the Context of Post-2015 Anti-Haze Regulations in West-Kalimantan. *Human Ecology*, *46*, 197-205. https://doi.org/10.1007/s10745-018-9969-y