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Research Paper

Integrating indigenous knowledge system to sustainable agricultural practices of Higaonon Tribein Claveria, Misamis Oriental

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Abstract

Indigenous knowledge encompasses skills, experiences and insights of people that are applied to maintain or improve their livelihood. This paper tried to describe the indigenous sustainable agricultural practices of Higaonon tribe in Barangay Mat-i, Claveria, Misamis Oriental. Ocular field visit was done to gather data through interview and focused group discussions. Using grounded theory in analysing the data, results showed that beyond simplicity of their land measurement and marking, Higaonon tribe maintained orderliness in terms of land ownership and cultivation of crops. Major sustainable crops raised include the staple rice and corn, and other root crops and fruit-bearing trees. However, the modern technological practices of agriculture hinder the tribe in sustaining their indigenous knowledge and practices in farming. As such, they were left no option, except to adapt the new sustainable farming technologies as a modified farming practice apart from what are usually used by their tribe.

Keywords: Indigenous knowledge, Sustainable agriculture, Higaonon tribe

Introduction

With the emerging global knowledge coupled with the advent of technology, a country's ability to build, mobilize and make use of knowledge is equally important and essential for sustainable development. It encompasses skills, experiences and insights that people hadpracticed it since then in order to maintain or otherwise improve their livelihood. All of which are anchored on the basic component known as the indigenous knowledge[1].

Indigenous knowledge as applied to indigenous people's (IPs) perspectives is the information passed on to from one generation to the other, enabled their cultural community survive amidst unfavorable seasons, diseases or sickness and calamities. This knowledge system has facilitated the vital communication and decision–making among the members of the tribe [2].Similarly, IPs have the capability to develop and adapt gradually to a changing environment while maintaining closely the interwoven people's cultural values. Their livelihood depends almost entirely on specific skills and knowledge essential for their survival taken cognizance particularly on agriculture; animal husbandry and ethnic veterinary medicine; use and management of natural resources; primary health care (PHC), preventive medicine and psychosocial care; saving and lending; community development; and poverty alleviation[1].

Recent anthropological studies revealed that all IPs of Southeast Asia, including the Higaonon tribe is a descendant of Austronesian migrants from Asia and spoke closely to the Austronesian languages [3]. The Higaonon tribe is one of the 18 Lumad (a group of Non-Moro Indigenous Cultural Communities in Mindanao) ethno-linguistic groups in the Philippines comprising 12 to 13 million or 18% of the Philippine population. The term Higaonon is a combination of the root words: 'HIGA' which means 'to live' or 'to lay in bed,' 'GAON' which means 'mountain,' and 'ONON' which means 'people'. They are located in the provinces of Misamis Oriental, Bukidnon, Agusandel Sur, and Rogongon, Iligan City particularly living in hinterlands, forests, lowlands, and coastal areas[4].

The Higaonons have lived and continued to live in their ancestral forest homes, practicing slash and burn cultivation as the main economic activity for upland rice and corn production. This is an agricultural system, which is characterized by a rotation of fields rather than of crops, by short periods of cropping (one to three years) alternating with fallow periods (five to eight years), and by clearing through slash and burn [5]. This agricultural cycle starts during March and April where they devote most of their time in clearing and planting [6]. Gathering of fruits and vegetables from the forest and abandoned cleared areas were also one of the practices of the Higaonon tribes to support their daily subsistence. It is worth to note that Higaonon tribe does not work individually, but they work together as family in developing their respective lands. This farming system provides a lifestyle that binds a household together, especially the Higaonon tribe [7].

It is apparent that the survival of indigenous people occupying on their particular territory largely depend on the produce from their cultivated agricultural lands and the forests since time immemorial [8]. Documenting indigenous knowledge is important for the conservation and sustainable utilization of these endemic plants otherwise, both the plants and the Indigenous knowledge might disappear in a couple of years due to the influence of modern agricultural technologies and practices and the introduction of new variety of crops. However, there are still many undocumented traditional knowledge which have not been formally studied yet [9]. As such, this study was conducted to describe and document on how IPs have integrated their indigenous knowledge system to sustainable agricultural practices in Claveria, Misamis Oriental. Results of the study would benefit in preserving and perpetuating the indigenous knowledge system of Higaonontribe for sustainable development of agricultural production.

Materials and Methods

This study used key informant interview (KII)and focused group discussion (FGD) methods in gathering important data. Tribal chieftains were involved in the interviews, along with the tribal council members of the study area. Secondary data were obtained through historical narrative accounts from tribal chieftains and tribal council of elders. Data obtained were validated through ocular visits.

A semi-structured guide questions with open-ended options were prepared and used in KII and FGD. A vernacular dialect known as *SinugbuanongBinisaya*was used as the mode of communication. Informal interview was observed to allow free flowing discussion and generation of information. Data obtained was then analyzed through grounded theory analysis wherein the theoretical explanations resolved the participants substantive area.

Results and Discussions

Around 1938, Barangay Mat-i, Claveria of Misamis Oriental was still a thick forest with litters and mosses on the ground which people cannot enter unless walking barefoot. The place is said to be sacred and whenever people enter wearing shoes or slippers, the weather would suddenly change and subsequently, thunderstorms occurfollowed by heavy rain.

The ancestral domain in Barangay Mat-i covers approximately 60,000 hectares of forestlands. The agri-products have been their prime source of livelihood producing tomatoes, cabbage, banana, root crops, corn, rice, coffee, cacao, fruit trees and other kinds of vegetables. Timber trees are found abundantly in the remaining forestland, however, due to moratorium of cutting timber in the natural forest, no logging activities have been observed except of some cutting of trees made by the IPs to support their domestic needs.

System of Land Measurement and Distribution

Land among the Higaonontribe is ample with a vast natural resources where everyone is entitled to till and develop thereto.Measurement system that we are using nowadays is yet unknown to these indigenous people. However, they have their own system of measurement using their arm length and with a *takda* or stick in dividing the land and usednatural landmarks as their monuments or boundary.This natural landmark include a river, big trees such as acacia, and boulders. Amidst the absence of land titles, no conflictshad arises among families in the tribe because of their cultural system, belief and code of conduct as quoted, "*Di Kaw Ag Sinaha*" or don't be envious of others - if someone has a good fortune, it is because he or she is blessed.Having that belief since from their ancestors, no land disputes had took place due to the full respect afforded by the Higaonons on the land occupied/cultivated by its members including the markers they have agreed upon thereto.

Land Preparation and Planting

Nomadic style of farming was still observed to be the farming system adopted by Higaonon tribes. They were engaged in farming scheme because the *Magbabaya* or Lord God has provided his people some very fertile agricultural land for them to cultivate for a living. Its farming involves several procedures or steps such as: (1) *Sakum* or *lampas,* which means the clearing of an area subject for cultivation, (2) *Kaingin* or burning the remaining vegetation or grasses in order to fully clear the area and (3), the planting activity which participated in by all members of the family. Crops will then be harvested after months. As practiced, land cultivation or farming in the present area should persist for two (2) years only and thereafter, they would find another land area for farming. One of the elders of the tribal had explained this practices that they opted to observe the two (2) years tilling period in order for the land to regenerate or recover itself. This process is an act of reproducing new generation or regeneration and reproduction itself allowing continuing life from generation to generation. It was a natural regeneration whom the indigenous people have observed to be practical and environmentally – friendly farming system[8].

The indigenous way of land preparation is primarily in a manner of shifting cultivation including marking, slashing, cutting, felling, burning and harvesting as practiced by other Higaonon tribe in Barangay Rogonon, adjacent mountain areas of Iligan, Misamis Oriental[13].Foremost, the farmer place a mark or "*takda*" to begin clearing his swidden field following his observations either or both on the arrangement of the constellation or star or "*giya*", a full moon or "*subang*" and the high tide or "*taub*". As soon as the four (4) sticks were in placed at the corners identified on the farm, the ritual ceremony follows to be conducted by a "*baylan*" or faith healer with the presence of the *datus* and the farmer himself. The necessary offering requirements include the betel nuts "*bunga*", betel leaf "*buyo*", a bottle of ordinary rum, boiled native chicken and a handful of grains. The purpose of ritual marking is to express respect and permission from the spirits of the forest or "*lasang*" and farmlands or "*uma*". After the ritual offering, the Higaonon consulted the omen bird or "*limokun*" which they believed that it will provide a necessary answer from the spirits of the forests from whatever direction it was heard.

There were four good directions which indicate favourable answers from the spirits. First, directly in front or "*saatubangan*". Second, 45 degrees to the left or "*sawala*". Third, 45 degrees to the right or "*satuo*" and fourth, directing overhead or "*diritsotungodsaulo*". A call coming from any other direction is interpreted as bad. If a bad omen is heard from the "*limukon*", they leave that corner where they conducted ritual and proceeded to another corner of the field to clear it and to erect a stick for the offering site. If a bad omen is heard again, they go to the third corner and so forth until they have tried all four corners including the center of the subject farm site. In an event that a good omen is heard, no further marking is required, and once the field is marked and the ritual of slashing or "*lampas*" is finished, the clearing and cutting stage of the cultivation cycle begins.

Each man has a single well - sharpened bolo or "*sundang*" and hoe or "*piku*" which is carried with him most of the time upon cultivation activities. Slashing is deliberate and relatively slow. Each farmer has a carefully selected sharpening stone which he takes with him to the working area. While slashing, the bolo usually needs resharpening after each hour of use. The slashing work can be done by men and boys aged ten (10) years old and above. The clearing and cutting stage of the cultivation cycle involved two separate and well defined activities such as the slashing or "*lampas"*using a sharp slashing tool or "*sanggot*"and the felling or "*tumba*" in which the large trees are brought down. A Higaononfarmer see to it that no plants are left standing except for wild plants and treeswhich

produce/provide fruit and medicinal properties.It shouldbe protected and circled with bamboo slats about three meters in diameter. When the field is burned, this ring discouraged the fire from reaching the protected plant.

Felling of trees or shrubs usually begins sometime in February and is finished throughout the neighbourhood by late March and April. Usually, each swidden owner devoted about one-fifth of his farm field himself, and then offered one (1) community work day or "*bayanihan*" to other neighbourhood laborin order to expedite the completion of site preparation. The burning or "*pagsunog*" stage constitutes the last activity of the cycle. This burning process includes, drying of the cut vegetation, selecting of the day and hour for burning, levelling of upright branches, firing of the site and finally re-burning of what was not consumed by the main firing.

Broadcasting or "*pugas*" of corn grainsor "*lugassamais*" would start as soon as rainy season started. The greatest concern and attention is devoted to the cropping of corn and rice as the major staples of the Higaonon diet, a vast of the other plants are also cultivated in swiddens. Rice and corn are considered to be the two most significant of all crops planted which were given the greatest amount of concern and attention. The planting of these two basic food crops is done in sequence, corn is planted first then rice. Care is given to the selection and care of corn seed.

Non–grain plants which are viewed as secondary crops and are planted at times when primary concern is not focused on the major grains like abaca and banana "*saging*". Other crops are also planted during or after the main grains like purple yam or "*ubi*", gabi or "*taro*", peanuts or "*mani*, legumes or "*batung*", pepper or "*sili*". The harvesting or "*ani*" period will start as mature brown husk are seen in the fields. The various secondary crops also begin to mature and the harvest of the first corn is generally finished by August and the harvest of rice by October. The secondary crops like fruits and vegetables and tubers may continue to yield for several months. The tasting or "*tilaw*" commenced for corn and rice to determine whether ready for harvesting. Corn is harvested at different times due to the difference in maturation period brought about by the weather. Harvesting of corn is always done by women using a very short but sharp knife or "*hait*". The owner of the field does the filing of the newly cut panicle bundles from the field to the stock house.The best large seed and well-formed cobs – are chosen and set aside from the rest of the harvest. These are hung on bamboo storage rack under the heat of the sun for drying.

Agricultural Products and Marketing

Higaonon are known of being thrift. All produce from the farm are brought to the *nipa* hut or "*payag*" for storage. After several weeks, when the rains begin to come morefrequently, theseed cobs are transferred from the storage rack to the house, where they are hung abovethe hearth or "*abuhan*". There the heat from the cooking fires continues to dry them and the smokediscourages weevils or other insects from attacking it. Corn seed, like rice seed is never shared. If a family lacks seed forcorn planting, or if it wants a particular variety of seed which he does not have, its members must join inthe harvesting to obtain some sharesof best seeds for the next planting season. Each family has budgeted in its storage enough rice and corn for daily subsistence until the next season. Vegetables and fruits are harvested in the farm from time to time considering that it will not last long.

Higaonon has a way of sharing and bartering. During lean months, they shared or bartered to each other some foods so that they can all survive as one (1) tribe during the scarcity period. Root crops such as "*kamote*", "*gabi*" and "*ubi*" are the best alternate foods used to eat by them during less or no supply of corn and rice supplemented with several vegetable leaves such as camote tops or "*udlot*", "*kamunggay*", "*saluyot*", "*alugbati*", "*pako*" and many others.

Marketing system of the Higaonon tribes are so simple. They usually sold their vegetables by bundles at an amount of PhP 100 to 200 while excess corns in half to one (1) sack are brought to Poblacion proper and disposed off at the prevailing market price. Despite of being situated away from urban centers, yet some small business enterprises went up to their areas to buy their farm products at farm gate price. These products include banana, root crops, vegetables and corn [9].

Government Interventions

The Local Government Unit of Claveria together with some National Agencies namely, the

Department of Environment and Natural Resources (DENR), Department of Agriculture (DA), National Commission on Indigenous Peoples (NCIP) and other National Agencies came in to provide any form of assistance from the Government. Having such interventions, slash and burn cultivation or *kaingin* was discouraged and sustainable agriculture and forestry practices were introduced without setting aside those best indigenous practices.

For tree farming, they were encouraged to continue their retention system in the farm wherein trees and medicinal plants are left undisturbed. Per DENR Memorandum Circular No. 89-17, the system practiced by the Higaonon tribe is called Assisted Natural Regeneration or ANR. It is the most economical and cost – effective method to accelerate the re – establishment of vegetative cover that approximates a natural forest in terms of species diversity and composition.

Applications of organic fertilizers were introduced in order to hasten and produce quality farm crops. Their indigenous knowledge and skills were enhanced more thru trainings and focus group discussions among themselves. Wetlands were developed into fish ponds in order to have a sustainable supply of fishes throughout the year. Simple business and marketing was provided by the Local Government Unit to uplift the socio - economic status of the tribes.

Conclusion and Recommendations

Beyond the simplicity of their land measurement and marking, they are able to maintain orderliness in terms of land ownership, cultivation, harvest and marketing of produce. Even if they have considered rice and corn as their major product, they have also planted root crops and fruit bearing trees. The agricultural practices of the Higaonons in Barangay Mat-i of Claveria, Misamis Oriental, have resemblance with the Higaonons in Barangay Rogonon, Iligan City. Slash and burn and nomadic style were used. It was only stopped when the DENR came in and explained the effects of kaingin. As for the use of organic fertilizers, Higaonons of Barangay Mat-i learned to use it when it was introduced to them. This only means, that the tribe beyond their effort of sustaining their indigenous knowledge and practices in farming, learned to accept and adapt the practices of the modern world since they believed that it would benefit them as unanimously agreed among the tribal council members.

Generally, development in any field is equated with change, and this change left best indigenous farming practices to be sustained by the tribe. To be permanent and effective, it must be truly appreciated as good. Goodness to any people or tribe is in consonance with their religious, ethical and moral values that are embodied in their culture, their way of life. There is much to be changed in the ways of life of indigenous people or tribes in Mindanao, elsewhere in the Philippines and in the world. To effect a change, some values, which are integral parts of their indigenous cultures, must be changed. However, the change must be done by them out of realization of the good. Therefore, the LGUs and national agencies should consult first the tribal council for any interventions to be made in the future. This is to minimize racial discrimination as well as preserving the best agricultural practices of the tribe to be sustained for the present and future generations as these did not pose any threat to the integrity and perpetuity of resources.

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