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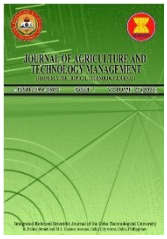

Original article

How exactly do upland farmers fight poverty?: An ethnography on upland farmers' in an upland Visayan farming village use of diversification activities as anti-poverty tool

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ABSTRACT

The elimination of poverty in all forms is a challenge that the United Nations must address (SDG 1). Poverty is a complex phenomenon and income poverty, especially in rural areas, is a paramount concern that needs to be addressed. A 12-month ethnographic study was conducted to investigate the contribution of upland farmers' diversification activities (DAs) to meet financial requirements for farm operations and household subsistence. Fieldwork was conducted during the academic breaks. This study was guided by the following questions: (a) How do DAs reduce poverty? (b) What are the different DAs undertaken by the upland farmers? The results showed that upland farmers had a relatively low time input (95.57 h) in all phases of the agricultural cycle compared to workers in the industrial sector. Furthermore, upland farmers undertook both livelihood diversification (LD) and crop diversification (CD) to meet farm requirements and household subsistence. These activities were timed during off-farm or slack periods. It is recommended that provisions for farm-to-market roads and extension services are provided to rural farmers. Towards this end, governments, through their line agencies, shall come up with policies and programs in support of farmers' economic endeavors such as training and extension and technical services to achieve the goal of a poverty-free community.

KEYWORDS: *agricultural diversification, farming practices, livelihood diversification, poverty reduction, rural poverty, sustainable development goal, upland farmers*

1 INTRODUCTION

Poverty is a social problem that haunts humanity, and its elimination is the goal of nations. It has been studied under various topics, such as the accumulation of assets such as accumulation of livestock, size of arable lands, non-farm revenues, farm inputs, cash from non-farm income, and time use (Martin & Lorenzen, 2016; Singh & Chudasama, 2020); the inability of farmers to adopt modern techniques that would lead to higher productivity and increased income (Peprah et al., 2018; Sobreviñas & Barrios, 2010); and farmers' inability to engage in gainful and profitable non-farm activities that contribute to increased income, offer a better quality of life, and enhance agricultural productivity (Admasu et al., 2022; Kurantin & Osei-Hwedie, 2022). All these studies suggested that there is a positive correlation between farmers' economic activities and higher income as a way out of poverty, and although there has been cognitive discord along this point, there is a consensus that issues on poverty need to be vigorously pursued (Bezu et al., 2012; Davis et al., 2010).

Even though there has been an improvement in the reduction of poverty, the number of people living in extreme poverty is on the rise in sub-Saharan Africa, comprising more than half of extreme poverty in 2015 (Wadhwa, 2018). The World Bank reported that approximately 413 million poor people lived in extreme poverty in that region, which is higher than in all other regions of the world. If the problem of poverty remains unaddressed and continues to persist, its consequences, such as access to safe water, education, health care, electricity, and other social and critical services, remain elusive, and socioeconomic status, gender, ethnicity, and geography would continue to determine its access (World Bank, 2018).

In the remaining decade of the fight against poverty, it has become imperative to study specific actions against poverty. In this study, farmers' diversification activities (DAs) were conceived as a poverty alleviation strategy. For example, farmers undertake diverse livelihood opportunities to improve their chances of survival and well-being (Avila-Foucat & Rodríguez-Robayo, 2018). This was done by participating in civic activities, such as becoming members of farmers' cooperatives, off-farm employment, and other wage-based activities that

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exposed them to opportunities that improved their quality of life (Kassie et al., 2017). However, the authors apprised that improvements in well-being brought by productive opportunities were influenced by indicators such as farmers' level of education, access to credit and other financial sources, possession of material wealth, fluidity in resource mobilization, expansion of social contacts, proximity to and availability of market, and the household dependency ratio. On the other hand, farmers' cultivation systems, such as intercropping, are considered an efficient strategy to improve farm yield; hence, farmers' traditional practices require support from relevant agencies. However, studies investigating this area of inquiry have produced conflicting results, bringing into question the factors of investigation, methodology used, and circumstances surrounding the subject matter (Michler & Josephson, 2017).

Diversification activities diffuse the risk of uncertainties such as sickness, calamities, and seasonal fluctuations, leading to crop failure and income loss (Martin & Lorenzen, 2016). Rural farmers view LD activities as a buffer for resources that can be utilized during emergencies and other forms of uncertainty, such as crop failure or extreme climatic variations (Asravor, 2018). They combined farm resources and skills in LD activities, which revolved around livestock raising, fishing, cropping rotation, and off-farm activities. For instance, in Namibia, 95% of rural farmers engaged in LD activities as an anti-poverty measure (Kamwi et al., 2018). Moreover, these activities helped reduce poverty levels in the range of 6–9% only when farmers were employed in "high return sectors" such as trade or salaried jobs (Gautam & Andersen, 2016).

In addition to increasing income and farm yield, crop diversification is a means of improving dietary intake and food security (Bommarco et al., 2018; Waha et al., 2018). In one region of China, diversified farms, on a five-year average production, were able to obtain an increased yield from 67.9% to 97% (J. Zhang et al., 2018; W. Zhang, 2022). Similar trends have been observed in South Africa (Michler & Josephson, 2017) and some developing countries, such as Malawi, Nepal, Vietnam, Pakistan, Nicaragua, Indonesia, Albania, and Panama (Kasem & Thapa, 2011; Kyi & Doppler, 2011; Pellegrini & Tasciotti, 2014). As evidenced in these studies, farmers' income was associated with the extent of diversification activities, that is, farmers with a low diversification index had low income, while those with a high diversification index had high income; in crop-diverse farms, rural farmers were cultivating high-value crops (Pellegrini & Tasciotti, 2014). As for dietary quality, crop diversification improved the diet of rural households (Islam & Alam, 2018) and have seldom experienced famine (Waha et al., 2018).

Although empirical studies have proven the benefits of diversification activities of rural farmers, there is a dearth of literature focusing on upland farmers' way of life and farming traditions, with an emphasis on upland farmers' strategies to lessen the impact of the risk associated with upland farming. Most of the discussions on rural poverty were not specific to upland rainfed agricultural communities, but to rural communities in general. Along this line of view, this study contributes to the literature on the subject matter. This is a very interesting subject matter to pursue because it can invite other studies describing and analyzing upland farmers' actual ways and means of responding to subsistence challenges. This is the research gap addressed in this study. When this gap is addressed, it exposes upland farmers' values and other cognitive constructs concerning daily activities and concerns to a much deeper analysis and understanding of their way of life. To address this gap, ethnography was used as the principal approach.

The main objective of this study is to illustrate the diversification activities (DAs) of upland farmers as an anti-poverty strategy. To achieve this purpose, the case of an upland rainfed agricultural community in the Eastern Visayas region, Philippines, was utilized. This case is unique because the research locale is a rainfed community with economic activities synchronized with the agricultural cycle, which is highly dependent on the natural forces and events. To discuss this concept, this study is guided by the following questions: (a) In what way do DAs reduce poverty? (b) What are the different DAs undertaken by the upland farmers? In this study, the authors described upland farmers' DAs, such as livelihood diversification and agricultural or crop diversification, as anti-poverty strategies.

2 MATERIALS AND METHODS

The data used in this study were the outcome of a 12-month field work in a Visayan farming village in the Philippines, which studied local upland farming practices and agroecological management conducted during academic breaks. The research locale has 57 household units with rice (*Oryza sativa*) as the main crop and coconuts (*Cocos nucifera*), sweet potato (*Ipomoea batatas*), banana (*Musa spp.*), and some vegetables as secondary crops. The locality has limited flatlands, with an estimated elevation of 25 ft. above sea level. Moreover, it is frequented by typhoons, with more than 20 typhoons visiting the country annually with 6-9 making landfall (Blanc & Strobl, 2016). Household heads were the research participants in this study. The labor types used in agricultural production, farm labor time allocation, crop cultivation, and other off-farm activities are reported in this article.

Upland farmers' labor pools, such as self-labor, unpaid family labor, collective or exchange labor, and hired labor, are part of the data used in this study. Self-

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labor is the labor type used by the household head; unpaid family labor is the labor type directly contributed by all household members in every agricultural task; collective/exchange labor, a non-formal reciprocal labor type, is organized as a response against labor bottlenecks; and hired labor is a contract paid labor that is employed for the immediate completion of a task.

The other datasets were DAs. Upland farmers have two types of DAs: livelihood non-farm activities and crop diversification. The former involved income-generating activities outside the farm, such as livestock raising, trade, temporary employment as daily wage earners, and marketing farm produce within and outside the immediate locality. The latter refers to the cultivation of other crops, such as perennial crops, annual, and cash crops in separate plots, in addition to the main crop.

Participant-observation

The participatory observation (PO) technique was used in data gathering to maintain the natural setting (Kawulich, 2005) so as not to intimidate research participants or put them in a very awkward position. The PO established direct contact with the research participants and facilitated the documentation of agricultural activities from field preparation to post-harvest, including labor mobilization. However, the shared information was verified using other instruments, such as checklists, interviews, and other unobtrusive methods to document farm life and other activities. In the PO, three phases of observation were conducted: activity participation, observation, and interrogation. In the activity participation phase, the primary author volunteered as part of the unpaid labor force of the host family to learn the ropes of trade and establish rapport with the community. The establishment of rapport in this approach is a *conditio sine qua non* for a fruitful inquiry. During this process, the primary investigator took the opportunity to engage farmers in casual discussions. The second phase gave the primary researcher the opportunity to observe farmers' time use of agricultural activity and the type of labor used. The third phase gave the investigator the opportunity to ask for specific information that could shed light to the farm practices adopted by the research participants. This was accomplished using personal interviews.

Conversations

Conversations with research participants, referred to as personal interviews, were engaged to elicit information on their economic activities, specifically on the allocation of labor, marketing of farm products, decisions on farm operations, and other topics of farmers' interests. These conversations were not audio recorded; however, they were transcribed immediately after the interview session.

Conversations with participants played three important roles in gathering information. First, information not expected by the researcher was discussed during the interview process, as explained in classic literature (Bagnoli, 2009; Bloom & Padilla, 1979; Hiller & DiLuzio, 2004). This information reflects their worldviews on the key issues. Furthermore, conversations "allow(ed) interviewers to probe and the interviewees to give narratives of incidents and experiences . . . that would result in a more holistic picture of people's understanding " of the phenomenon or experience (Brannen, 2005, p. 182). Second, conversation is a valuable way to explore and analyze people's expectations, goals, emotions, and attitudes. Every instance of conversation is unique and reflects interviewees' desires, perspectives, and views (Hiller & DiLuzio, 2004). Third, inherent in conversation is the possibility of generating a large amount of information covering a wide range of topics (Cassell & Bishop, 2018).

The Instrument

Customized instruments were generated to facilitate the recording and archival system of the project. Checklists, survey forms, and interview transcripts were used. The ethnographic journal was kept by the principal investigator, and engagement with the research participants was recorded. The principal investigator wrote transcriptions of the interviews immediately after each session.

Where a piece of information needs to be quantified, especially regarding the time use of labor according to different agricultural tasks, an estimation technique was used to recall and estimate the value of such information. This technique has an inherent weakness; nevertheless, it is the least demanding form of information collection compared to other techniques, such as the diary method (Bernard & Killworth, 1993; Paolisso & Hames, 2010).

Data Analysis

The time allocation (TA) technique (Bernard & Killworth) was used to quantify the use of labor types -- self-labor, collective labor, unpaid family labor, and hired labor -- employed in the agricultural cycle – field preparation, planting, weeding, fertilizer application, and harvesting. Frequency counts, averages, and percentages were used to compute labor expenditures.

The TA technique was used to determine the labor scheduling practices of upland farmers and the mobilization of different labor types (Stone et al., 1990). Using this technique, the causes of labor bottlenecks and strategies used by upland farmers to allocate labor types were identified.

3 RESULTS AND DISCUSSION

This section answers two research questions: a) How do DAs reduce poverty? b) What are the different DAs

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undertaken by upland farmers as a strategy to finance agricultural production and maintain household subsistence?

DAs as poverty reduction strategy

Labor use, agricultural tasks, and time use. The assessment of upland farming practices is essential for the investigation of upland farmers' DAs to determine whether these activities are compatible with existing farm practices. In this study, the authors assumed that DAs are components of upland farmers' traditional farming practices and are used as complementary resources for farm operations and household subsistence.

The complementary nature of the DAs with the agricultural undertakings of upland farmers is reflected in the allocation and mobilization of the labor force used in the different agricultural tasks (Table 1). The data showed that upland farmers spent an average of 95.57 hours per cropping cycle or 191.14 hours for two cropping cycles per year. This relatively low time input, compared to the industrial time use of at least 40 hours per week (2080 hours annually), is exacerbated by the practice of the fallow period, not to mention the slack period between agricultural tasks. It was during the fallow period that no crops were planted on the land, allowing the land to rest so that the land can "gain back" its fertility. Research participants would often say that "land too needs to rest to restore fertility". During fallow and slack periods, upland farmers undertook various DAs.

Table 1. Percentage of change of average labor time input (man/hours) expended by upland households in an agricultural cropping cycle

Labor Types	Field Tasks					
	*FP	*PL	*HR	*MA	*HA	Total mean hours
Self	33.70	1.37	11.65	2.50	4.13	53.35
Family	3.68	0.39	5.75	1.64	7.71	19.17
Cooperative	1.21	1.84	0.56	0.13	0.84	4.58
Hired	4.43	5.60	2.14	0.07	6.23	18.47
Total Mean	43.02	8.90	20.10	4.34	18.91	95.57

Legend:
FP= field preparation/paddy repair
*PL = planting/replanting/transplanting
*HR= weeding/pest management.
*MA= fertilizer application.
*HA = harvesting

The narratives of a research participant evidently confirmed the allocation of labor types:

"In total, we spent little time on the farm. Most of our time is spent on paddy repairs and self-labor. However, it is not our practice to count the number of hours spent on self-labor. We count time expenses when we will hire additional manpower to perform a task such as during harvesting, paddy repair if needed, planting, and fertilizer application, or with the use of collective labor".

Table 1 further showed the application of labor types in the different field tasks or agricultural tasks, namely the unpaid family labor, self-labor, collaborative/exchange labor, and the hired or contract labor. Self-labor is a personal labor used by the upland farmers themselves; unpaid family labor is the labor contribution of every abled member of the household; collective labor type is the labor contribution of members in a labor exchange group which every member must reciprocate whenever assistance is called; hired labor types are individuals who are paid to perform some tasks requiring immediate action.

In the agricultural cycle, five tasks were involved: field preparation/ paddy repair, planting/ replanting, weeding/harrowing/pest control, fertilizer application/manuring, and harvesting. In every task, upland farmers mobilize the corresponding labor type.

The data showed that in field preparation or paddy repair, weeding/harrowing/pest control, and manuring/fertilizer application, upland farmers relied on self-labor (53.35 h), followed by unpaid family labor (19.17 h), hired or contract labor (18.47 h), and collective or exchange labor (4.58 h). During planting and harvesting periods, upland farmers used hired/contract labor, as evidenced by their time use of 5.60 hours and 6.23 hours, respectively.

As observed, upland rice farmers adopted synchronized farming to be "on time" and "stay on time". Hence, to "stay on time" entails repercussions on the farming practice, thus, an additional labor force is required to be able to "stay on time". In this connection, the use of self-labor, contract labor, collective or exchange labor, and the unpaid family labor types are resorted to "be on time" and as a response to probable labor bottlenecks brought about by labor scarcity.

Of all the agricultural tasks, field preparation and paddy repair took most of the upland farmers' time with the use of hired/contract and unpaid family labor types because rice paddies were destroyed most of the time during typhoons. In general, upland agriculture is a personal and family undertaking as evidenced in the reliance on self and unpaid family labor types with 53.35 hours and 19.17 hours, respectively. All other labor types were support labor types, which made upland farmers "to

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be on schedule" in the conduct of farm activities.

The drudgery of labor is another factor in labor mobilization. For instance, research participants identified the planting/ transplanting/ replanting phase as physically arduous. To this end, they resorted to either hiring labor or calling for collective labor. In a conversation with a research participant, "As much as possible, I do not use pesticides on my farm. If I was forced because of the situation, I hired someone to do the pesticide application for me. That's how everyone does it here."

From these data, cooperative labor or exchange labor is a potential labor type for reducing overhead expenses. In farmers' practice, exchange labor is money-free; thus, overhead expenses can be reduced to some extent. The data show that cooperative labor is the least utilized labor type by upland farmers. Interviews with research participants showed that some of them were members of informal organizations (locally known as *salibot* or *alayon*), whose members were obliged to render services to every member in the group when called for. However, they were hesitant to use this labor type for reasons only known to them.

Participants' narratives indicated their management of labor allocation relative to a task. As articulated by the research participants.

"As much as possible, we must minimize the use of hired labor. This entails excessive expenses. If possible, we would only use our personal labor and the labor contributions of family members. Thus, the more household members there are, the better the farm is. However, the more heads to maintain, the more overheads to maintain. Hence, an extra source of income is required to support our daily needs. Although we have cooperative/exchange labor, we cannot rely on this because some members deliberately miss their responsibility to the group. That's why we seldom use it".

Different DAs undertaken by upland farmers as poverty alleviation tool

Diversification activities of upland farmers. With a relatively low time input compared to the normal annual working hours in the industrial sector, upland farmers can allocate some amount of time for income-generating activities to support farm operations. During fallow or slack period, livelihood diversification activities provide additional cash for both farm operations and household subsistence. Upland farmers undertook livestock raising, fishing, carpentry, trading, and cultivation of various crops as income-generating activities (Table 2).

Livelihood activities. Table 2 shows the various livelihood activities undertaken by the upland rice farmers. Most upland farmers undertake livestock raising (68%). Several chickens, cattle, pigs, and goats were common livestock raised by upland farmers, which were sold in nearby markets or self-consumed. Livestock raising plays an important role in every upland household, and domestic animals could be a good source of cash and protein for families.

Table 2. Economic profile of the upland farm household other than rice farming

Variable	*f*	%
Livelihood options other than rice farming	50	88
Livestock-raising	22	39
Vegetable raising	22	39
Wine (tuba) gathering	8	14
Carpentry	8	14
Fishing	6	11
Selling	1	2
Lumbering		
Livelihood options combinations		
Fishing-vegetable raising	13	23
Fishing-livestock-vegetable raising	3	5
Fishing-livestock raising	1	2
Livestock-carpentry	1	2
Livestock-vegetable raising	1	2
Lumbering-vegetable raising	1	2
Selling-vegetable raising	1	2
Vegetable raising-*tuba* gathering	1	2
Fishing-selling-livestock raising	1	2
Livestock raising-vegetable-carpentry	1	2
Vegetation cultivated other than rice		
Banana-coconut	10	18
Banana-coconut-legumes	6	11
Coconut-legumes	4	7
Banana-coconut-rootcrops	3	5
Banana-coconut-legumes-fruit trees	3	5
Banana-legumes	2	4
Banana-rootcrops	2	4
Coconut-rootcrops	2	4
Coconut-legumes-corn-rootcrops	2	4
Banana-coconut-legumes-fruit trees-rootcrops	2	4
Banana- cacao	1	2
Legumes-corn-rootcrops	1	2
Coconut-abaca	1	2
Banana-legumes-corn-rootcrops	1	2
Banana-coconut-legumes-fruit trees-buri	1	2
Coconut-legumes-abaca	1	2
Banana-coconut-abaca	1	2
Coconut-legumes-fruit trees	1	2
Coconut-legumes-fruit trees-rootcrops-abaca	1	2
Banana-coconut-fruit trees		

Beside livestock-raising, some upland farmers sought temporary employment doing carpentry work in a nearby locality (11%) as semi-skilled workers. As semi-skilled workers, their wages cannot be higher than their skilled counterparts because of the lack of necessary skills and training required for highly technical and complex tasks. Similar results have been reported previously (Hosseini et al., 2022; Nguyen et al., 2022).

Upland farmers undertook small-scale fishing, mostly during slack or fallow periods (11%). This is the source of cash. Upland farmers sold a portion of the catch of the day in a nearby market and used the rest for

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household consumption.

In some cases, upland farmers undertook livelihood activities with other household members to augment potential income. For instance, in fishing-vegetable gardening (54%), fishing was performed by upland farmers, whereas vegetable gardening was performed by a household member. Like all others, some of the produce was converted to cash, and the rest for household consumption.

As narrated by a research participant during casual conversations:

"I have to maintain other source of income (*Pa-extra, extra*). In support of my farm, I also worked as a carpenter or helper (*pahinante*) in construction work. I do almost all types of work. Any work as long as I earned support for my needs. I have gardens; I do fishing; my wife has also helped me. Although my earnings are not that big, at least, my extra work has helped me. . . As much as possible, this pa-extra extra should not conflict with farming. I cannot ask for higher pay because I have low education and the payment is weekly. I can earn more if any of my household members will earn too, like my wife. She sells our produce while I do errands. In this way, we were able to save money on farms and subsistence needs."

Crop diversification.

Upland farmers cultivated other crops either as an intercrop or as a serial crop. Usually, upland farmers undertook perennial-cash crop combinations (Table 2). They maintained perennial crops such as coconuts and bananas (*Musa spp*.) on their farms. These crops are not labor-intensive; hence, upland farmers use self-labor or unpaid family labor to maintain these crops. These two crops are considered high-value crops (HVCs) (Espino & Atienza, 2001).

The most common perennial crop cultivated by upland farmers is coconut. It is intercropped with one or more cash crops, such as bananas, vegetables, and mung beans. Known for the diversity of their use, coconuts play a significant role in upland farmers' households. Fruit, husk, water, shells, and kernels are all used and can be transformed into economically valued goods. Additionally, fronds and stems are used in various industries. This unique feature of the coconut palm gives coconut farmers incentives for economic sustainability even when there is a decline in demand for a particular item (Suriya, 2016).

Banana (*Musa spp.*) is a perennial plant that replaces itself and is an important cash crop in the Philippines (Briones, 2018). At the micro level, bananas are important crops at the household level, considering their demand at the macro level. It is an essential source of income for many households as well as a source of nutrition (Basan, 2017). At a national level, the Philippines exported 1.8 million metric tons of fresh bananas in 2017, amounting to almost USD 1.1 billion. Briones et al reported that the Philippines consumed 53 kg per capita.

As for the crops planted, research participants expressed that their secondary crops and HVCs gave them extra income to spend on the farm and subsistence needs. They said:

"Sales from vegetables gave us cash which we use in multiple ways. We usually sell our vegetables and other produce either from farms or gardens on market days. Mostly, our wives are the ones selling our products. . . Aside from vegetables, sales from our fruit trees also helped us earn more. However, not all the time because of seasonality, except for some such as bananas. Most of us have bananas and coconut trees We were told to cultivate high-value crops as our cash crops. Indeed, this has greatly helped us. The only limitation is that we only have a small area to cultivate these crops. If only we will be given a big area for this, maybe it can help us a lot."

To combat the effects of poverty, proper allocation and use of resources are important management strategies. In this case, farm labor and various DAs were the available resources for upland farmers. Upland farmers have two sets of DAs: livelihood diversification activities and crop diversification. Upland farmers embarked on raising livestock, temporary employment, fishing, trade, and other services. For the latter, they intercropped perennial crops, annual, and high-value crops (HVCs) as cash crops.

Increasing income begins by minimizing overhead expenditures using self-labor, unpaid family labor, and collective or communal labor. The utilization of these labor types minimized financial liabilities, such as payment of rents and wages, and the amount saved was appropriated for the purchase of farm implements and other inputs required for farm operations and other purposes. The practice of cost-cutting by identifying areas that would entail high costs has been discussed in previous studies. The identification of factors that would provide a better understanding of overheads could lead to sound financial management (Chan, 2012; Hussain & Ahmad, 2018). In the present case, farmers adopted a synchronized farming system in which labor shortage was possible. To anticipate labor shortages that could delay the implementation of agricultural activities, upland farmers resorted to hiring labor to speed up the completion of tasks, such as paddy repair or harvesting. To cut costs, upland farmers strategized the mobilization of their available labor force, such as self-labor, unpaid family labor, and collective or exchange labor groups. As reported in previous studies, hired labor is used for exhaustive tasks or tasks requiring immediate action, such as, field preparation/paddy repair, planting, and

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harvesting tasks. Similar findings have been reported in previous studies (Boserup, 1966; Pretty et al., 2011; Stone et al., 1990; Waha et al., 2018).

Second, upland farmers consider off-farm employment as a buffer capital to sustain upland agricultural enterprises. Off-farm livelihood opportunities assured farmers of additional cash inflow. While cultivation of the main crop was performed during the farming season, livelihood activities were performed during the off-farm season, field fallow, and slack periods. In scheduling of income-generating activities, upland farmers blended their on-farm activities with off-farm activities, as in the case of Timorese farmers (Fisher et al., 2018). The authors explained that farmers' DAs complemented farming activities, arguing that the seasonal integration of Mn mining and farming was a natural blend of complementary activities "with farming providing household food requirements and some income, and mining providing income security when crops failed" (Fisher et al., 2018, p. 9).

Third, crop diversification and commercialization of produce were other profitable activities that contributed to increased income. Crop diversification provides upland farmers with the opportunity to select a particular crop of commercial value, such as coconuts, bananas, and vegetable-like legumes, which could promise high returns. In the present case, two important crops, coconuts and bananas, were cultivated by farmers in combination with other crops, such as vegetables and legumes. Both crops were classified as perennial crops and were intercropped with other HVCs. In conjunction with this, studies discussing crop diversification have reported that households venturing into HVCs are less likely to remain poor (Birthal et al., 2015; Pellegrini & Tasciotti, 2014) and have many opportunities to vary food consumption (Altieri, 2018; Chandrakant et al., 2016).

Upland farmers' decisions to diversify reflect their values and priorities which were acted upon through the utilization of their resources e.g., both human and non-human and the apportionment of tasks. Attempts to understand farmers' values and aspirations require an understanding of their cultural milieu, which is concretized in their practices. Paramount to their concern is the welfare of the household; hence, they cannot afford to put their households at risk by adopting farm methods or any activities with which they are unfamiliar; thus, the reason why farmers hold on to their farming tradition. To hold on to practices with which they are familiar is for them the most rational action to undertake (De Buck et al., 2001; Gladwin, 1980; Greiner et al., 2009). For this reason, upland farming is characterized by tradition, with cultivators' values, needs, and rationality embedded in their farming practices (Casiño & Casiño, 1976; Eder, 2003, 2010) which would become the basis for the perpetuation of their practices.\

4 CONCLUSIONS AND RECOMMENDATION

Upland farmers' farm management to overcome economic challenges is based on the diversification of their resources, that is, livelihood and crop diversification. In undertaking DAs, maintenance of farm schedules is a necessary strategy to avoid conflicts that may put farm enterprises in a disadvantaged position. For instance, if labor bottlenecks cannot be addressed, crop failure is possible, which upland farmers cannot afford. Hence, upland farmers' management of land, labor, crops, and capital is a result of complex interactions among several interdependent components that cultivators have access to--- both human and non-human --- to maximize the attainment of goals. In this manner, upland farmers control many alternatives at their disposal, which minimizes risk. Overall, the agricultural management of upland farmers is aimed towards the implementation of agricultural goals for households, that is, increased income and the minimization of risks associated with upland agriculture. In the present discussion, undertaking numerous DAs has been proven to improve the economicconditions of upland farmers, at least to some degree.In this context, it is vital to extend support to improveupland farmers' stakes, such as formal organization of exchange labor groups or cooperatives, upgrading farmers' skills, farm subsidies in the form of farm inputs and implements, utilization of HVCs, land tenure assistance, and a farm marketing center to ensure that the price of farm commodities will be competitive. Like any other study that discusses the many positive contributions of diversification activities to farmers' lives, encouraging farmers to undertake diversification activities requires government support. Towards this end, policies and intervention programs aimed at improving stakeholders' lives need to be designed and vigorously implemented to achieve a poverty-free community.

LIMITATION OF THE STUDY

There are some limitations to this study that must be recognized. First, the study was limited to a specific locality, and similar situations are possible which may affect the generalizability of the findings. Although this study aimed to investigate the practices of upland farming communities in their fight against poverty, there is a need for cross-cultural comparisons to determine different farming practices as anti-poverty strategies. To obtain a picture of upland households' activities to meet their economic obligations, data from other upland localities need to be investigated. Second, household

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income was not considered in this study because the research participants considered it invasive of their privacy, which the researcher had to respect. Third, this study relied heavily on the self-reports of upland farmers, whose data need to be compared with official reports of both government and non-governmental agencies.

ETHICAL CONSIDERATIONS

This study was approved by the Research and Development Council of the university. Prior informed consent was solicited individually from the research participants not only during the interview sessions, but also on the actual work conducted on the research participants' farm.

CONFLICT OF INTEREST

None declared.

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