



Socio-Demography and Rice Farming Practices of Indigenous Teduray Tribes in Southern Mindanao

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Abstract

This study documented the socio-demographic profiles and rice farming practices of the Indigenous Teduray tribe across four selected municipalities in Mindanao: Columbio (Sultan Kudarat), Lake Sebu (South Cotabato), and South Upi and Upi (Maguindanao). Utilizing a sample of 30 farmer-respondents per municipality (N = 120), the study evaluated the relationship between demographic characteristics and agricultural methods. Survey results revealed a mixed cultivation approach, with farmers integrating both modern and traditional rice farming systems. Access to institutional support significantly dictated technology adoption; respondents who received technical assistance from government agencies, particularly the Department of Agriculture, successfully implemented modern adaptive techniques, whereas underserved farmers remained resistant to technology adoption. Furthermore, correlation analysis demonstrated that key demographic variables specifically sex, age, tribal affiliation, and educational attainment significantly correlated with the tribe's primary rice farming practices.

Keywords: Rice farming practices, Socio-demography, Southern Mindanao, Teduray tribe

Introduction

The southern Philippine island of Mindanao is the ancestral domain of diverse indigenous groups, collectively known as the Lumad populations. Among these distinct ethnolinguistic communities are the Teduray (or Tiruray), who primarily inhabit the highlands, river systems, and coastal valleys of southwestern Mindanao. Historically segregated into mountain, riverine, and coastal clans, the Teduray have traditionally sustained their livelihoods through a combination of foraging, fishing, and swidden (shifting) cultivation, alongside specialized material cultures such as geometric basketry.

Despite a resilient cultural identity, the Teduray confront profound socioeconomic stressors as their customary lifeways intersect with rapid regional modernization and ecological shifts. Their ancient socio-political configuration governed by the traditional Timuay collective leadership structure and the tiyawan dispute resolution system frequently collides with state-led development, land encroachment, and market assimilation. Consequently, while some segments of the population have successfully integrated into contemporary economic spheres, geographically isolated upland clans face compounding marginalization (Angeles 2018).

Understanding the current socio-economic landscape of the Teduray is vital for inclusive regional development. While previous policies such as the Indigenous Peoples' Rights Act (IPRA) aim to protect and empower these communities, localized baseline data remains scarce. There is a critical need to assess their present realities including educational attainment, livelihood security, and access to basic social services to design effective, context-appropriate interventions.

Therefore, this study documented the Socio-Demographic Profile and rice farming practices of Indigenous Teduray Tribes in the Selected Provinces of Mindanao. By conducting surveys, economic vulnerabilities, and cultural adaptations of the Teduray, this research aims to identify the gaps between existing development frameworks and the actual needs of the community, ultimately contributing to more inclusive, culturally aware policy-making and sustainable ancestral domain management.

Statement of the Problem

This study was conducted to address the following statements:

1. What are the socio-demographic profiles of the indigenous Teduray in Mindanao?
2. What are the peace and order factors that affects rice farming practices of the tribal group?
3. Are there significant relationships between the demographic and economic profiles, peace and order conditions and environmental factors with the rice farming practices of the indigenous group?
4. What are the perceived issues of the tribes relative to rice farming practices?

Significance of the Study

The findings of this study will provide crucial data on the living conditions and economic realities of the Teduray people, offering valuable insights for the following stakeholders:

- The Teduray Community and Tribal Leaders (Timuay): This research serves as a documentary record of their current socio-economic status. It provides data-backed evidence that tribal leaders can use to advocate for their ancestral domain rights, protect traditional livelihoods, and negotiate fairer development programs.
- National and Local Government Units (LGUs): This study offers provincial, municipal, and barangay planners a clear baseline of the community's concrete needs. It enables local governance to craft targeted, culturally

sensitive social services, health programs, and infrastructure projects rather than generic, one-size-fits-all solutions.

- National Commission on Indigenous Peoples (NCIP): The data generated can support the NCIP in its mandate to protect indigenous well-being. It provides updated field insights to assist in evaluating Certificate of Ancestral Domain Title (CADT) implementations and formulating Ancestral Domain Sustainable Development and Protection Plans (ADSDPP).
- Non-Government Organizations (NGOs) and Civil Society: Civil groups and human rights advocates can use the results to design relevant livelihood training, literacy programs, and environmental advocacy campaigns that match the actual economic gaps of the tribe.
- Future Researchers and Academe: This paper fills a gap in localized literature regarding southwestern Mindanao's indigenous economies. It establishes a baseline for comparative studies, updates academic text on contemporary Lumad life, and suggests new pathways for studying cultural adaptation under economic pressure.

Methodology

Research Design

This study employed the descriptive correlational survey to determine the socio-demographic characteristics, peace and order factors affecting rice farming practices of the indigenous Teduray. Quantitative data or information were taken from the respondents.

Locale of the Study

This study was conducted in the three (3) provinces of Southern Mindanao namely: South Cotabato in the Municipality of Lke Sebu, Sultan Kudarat in the Municipality of Columbio, and Maguindanao in the Municipality of North Upi and South Upi (Fig. 1).

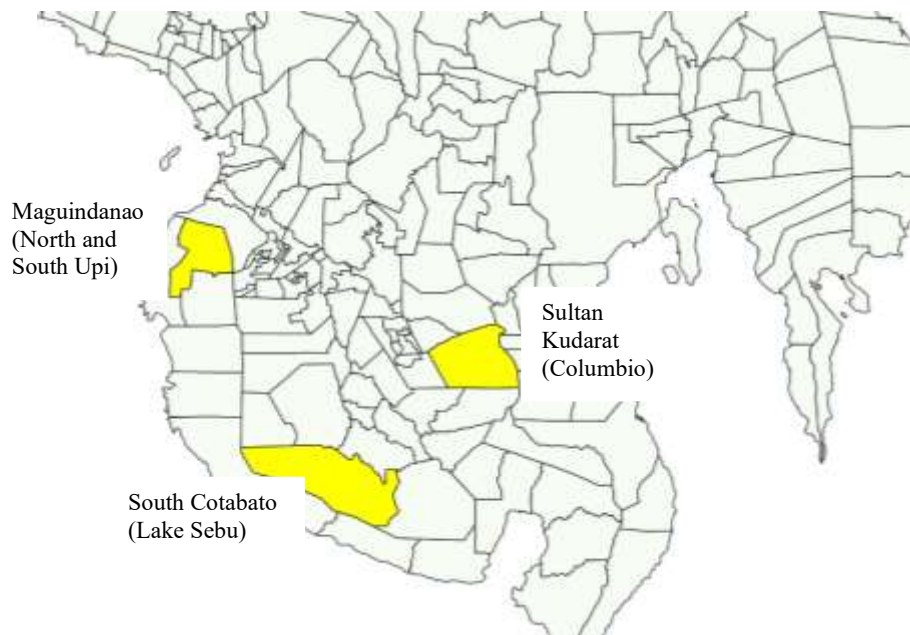


Fig. 1. Map showing the study site in Southern Mindanao.

Statistical Analysis

Descriptive statistics such as percentile, mean and standard deviation were used to determine the upland rice farming practices of indigenous teduray along with inferential statistics particularly regression-correlation analysis in projecting influences of the socio-demographic characteristics and other factors on rice farming practices of the tribal group.

Data Gathering Procedures.

Semi-structured questionnaires were used in gathering basic information such as socio-demographic profiles, peace and order condition, and rice farming practices of the respondents. It was reviewed and pre-tested before administering to the respondents. Personal interview and focus group discussion were employed also to enhance the credibility of the supplied information. There were four (4) enumerators hired; one per municipality. They were selected based on community organizing exposures, tribal belonging (Teduray) and residence of the corresponding municipality. Enumerators were deployed in each municipality for 1 month until the questionnaires were completely answered and collected.

Respondents of the Study

The number of respondents were selected based on the criteria set by the Department of Agriculture in the RSBSA wherein each municipality had 30 farmer-beneficiary. Hence, the 30 farmer-respondents per municipality were taken as respondents, with a total of 120 farmers surveyed and interviewed.

Results and Discussion

Demographic Profiles of the Respondents

Gender

It shows in Fig. 2 that there were many male respondents compared to female, an indication that in the 4 municipalities, most of the upland rice farmers are male. Female households stayed at home and performed tasks other than farming as mention by most respondents during the interview.

The farming community is dominated by males where most of the females are housewives assisting their husband in day-to-day activities at home.

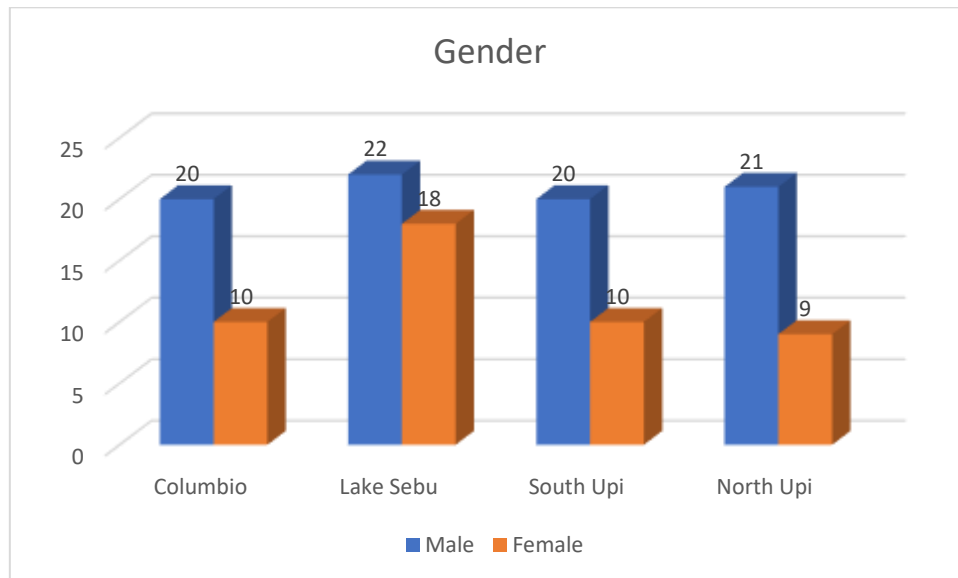


Fig. 2. Gender distribution of the respondents

Age

Upland rice farmers in the different municipalities were highly distributed or dispersed in terms of age in which 31-40 year old dominates (Fig. 3). This indicates that most of the upland rice farmers in the area were at middle age. Older farmer is also evident in Columbio and Lake Sebu municipalities.

Young household members also assisted their elder relatives in farm works while engaging other activities such as attending basic education and social gatherings particularly observed in the municipalities of North Upi and South Upi.

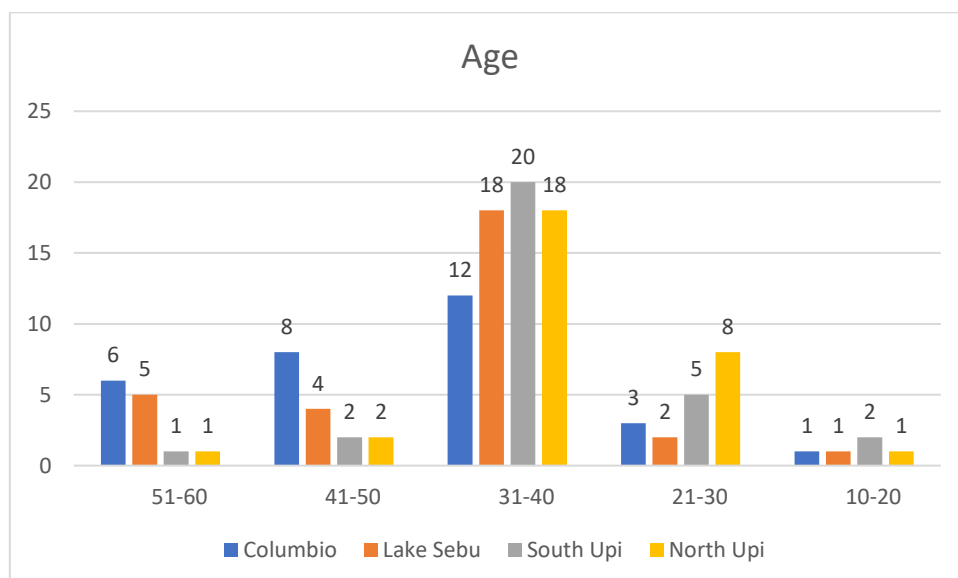


Fig. 3. Age distribution of the Mamalu descendants Rice farmers

Marital Status.

The researcher also found out that most of the farmer-respondents in the 4 municipalities (91%, 67%, 53%, and 40% respectively) were married. The rest were single, widow, and separated (Fig. 4). This probably indicates that married farmers spend more time in the farm to earn money for their household members and families.

As usual married farmers tend to spent most of their time in tilling their agricultural land in order to feed their household members.

Single residents spent most of their time in social activities because they do not have children to support and feed.

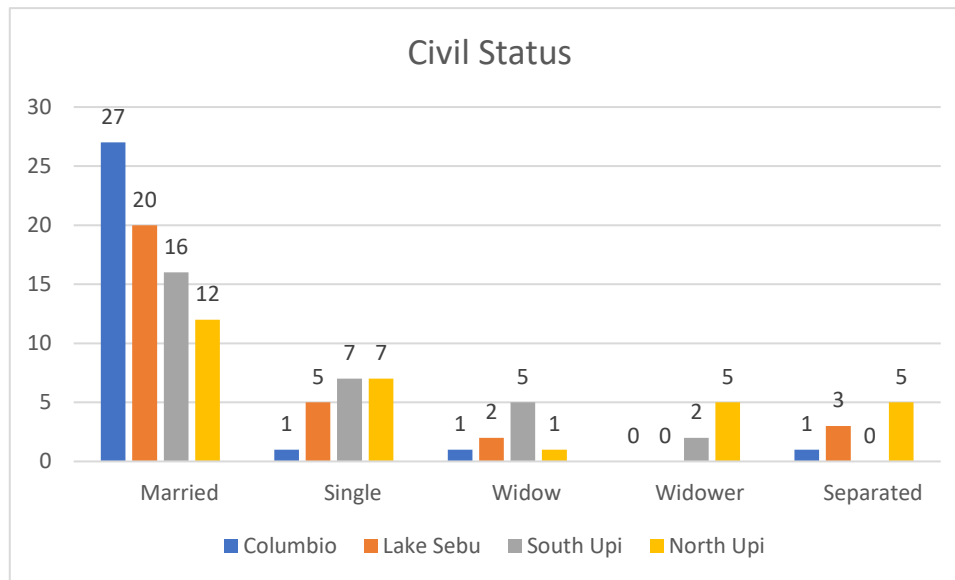


Figure 4. Marital Status of the Respondents

Tribal Affiliation.

The researcher targeted those barangays that are beneficiaries of Agriculture-related programs and found out that they are mixed of Muslims and Christians. Teduray were only found in Columbio (27%), South Upi (94%), and North Upi (97%) in Fig. 5. However, there are barangays in the municipality dominated by B'laan which are not included in the survey.

As stated, Lake Sebu is home to T'boli tribes with unique farming practices. Some of the rice areas were terraced and still practicing slash and burn method of land clearing.

The South Upi municipality is known to be a haven of Teduray tribe believed to be the direct descendants of Datu Mamalu. In the survey conducted there were 28 respondents who claimed to be members of the Teduray tribe. The rest were B'laan and other tribes.

North Upi and South Upi is predominated by Teduray tribes since time immemorial. This was so because historically, Mamalu opted to stay in the uplands became the ancestors of the highlanders including the Teduray tribes. However, there were barangays in the municipality where Teduray and other tribes intermarried. So, in Fig. 5, 29 respondents were member of the Teduray tribe, the rest were mixed of B'laan and Manobo.

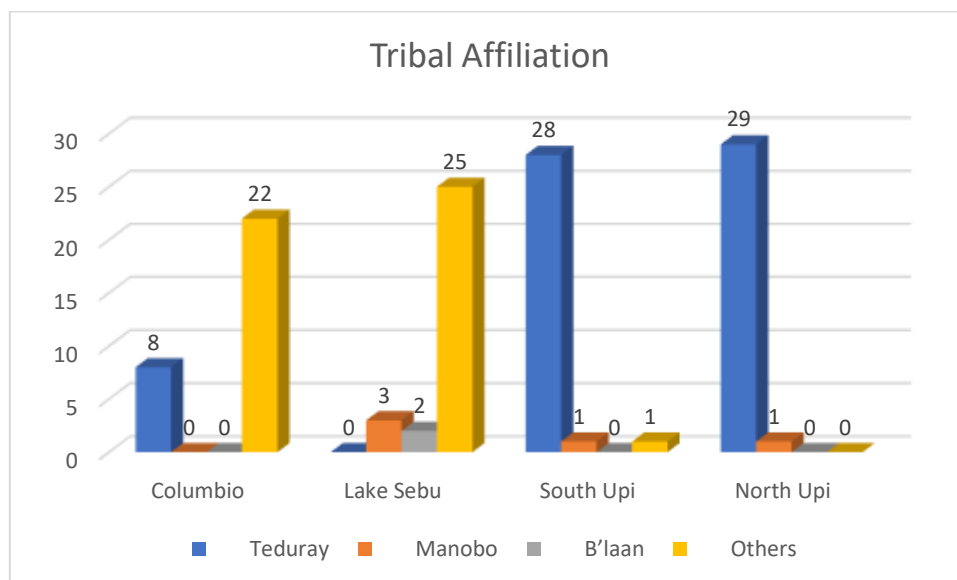


Fig. 5. Tribal Affiliation of the Respondents

Highest Educational Attainment.

Interestingly, the researcher found out in Fig. 6, that rice farmers included in the respondents were mostly elementary level (37%) in Columbio and 50% in South Upi. In Lake Sebu and North Upi, it was found out that most of the farmers were uneducated (43% and 50% respectively). This indicates that educated people in the municipalities who graduated college degree opted to seek white collared jobs.

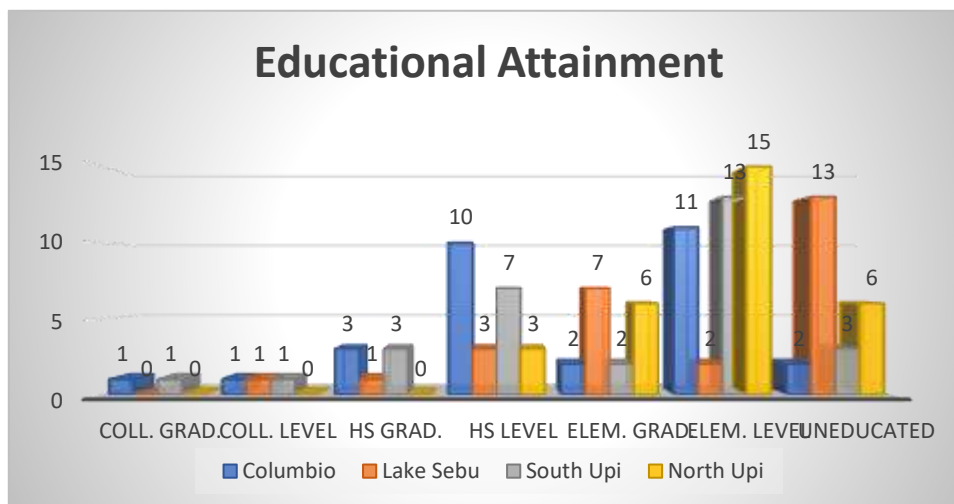


Fig. 6. Educational Attainment of the Respondents

Rice Farming Practices

Farm Size and Landholdings.

Most of the rice farmers interviewed in Columbio (19), Lake Sebu (17), and South Upi (20) has 1.5 hectares of farm areas for rice production (Fig. 7). Other farmer owned 1.0 and 2.0 hectares, respectively. Furthermore, there are few owned 2.5 hectares and others, respectively.

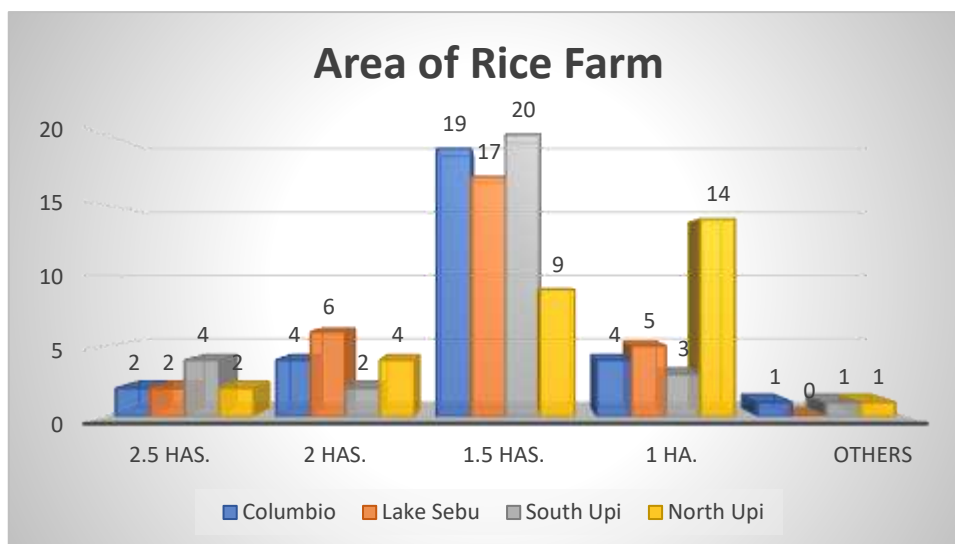


Fig. 7. Farm Size/Landholdings of the Respondents

Years in Rice Farming Experiences.

The researchers also found out rice farmers in Lake Sebu for 20, 15, 10, and 5 years were 30, 5, 10, 5, and 10 farmers respectively. (Fig. 8). Eighteen (18) rice farmers in South Upi had 20 years' experience, 5, 6, and 1 farmers with 15 years, 10, and 5 years farming experience, and Columbio has 9 farmers with 15 years experience, 5 with 10 years rice farming experience, and 11 with 5 years' experience. This finding was due to social status where most of the tribal were not able to earn higher education but with land holding that are potential for agriculture production. Hence, they spent most of their time in farming activities.

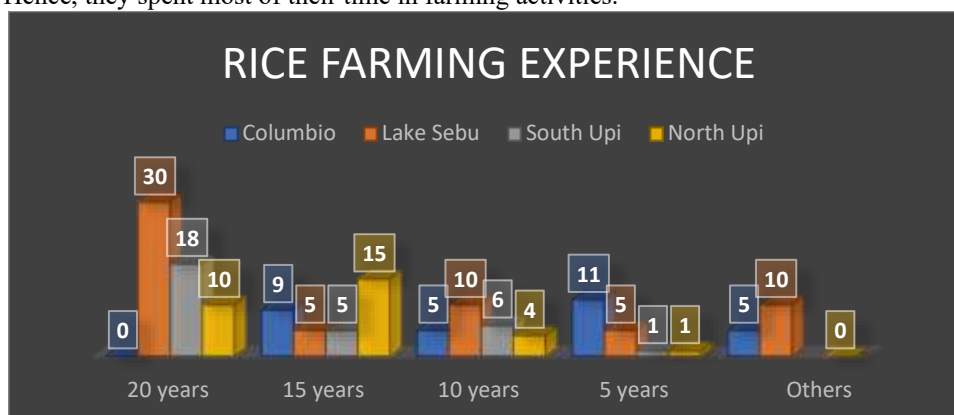


Fig. 8. Rice Farming Experiences of the Respondents

Farming Support Received

When the researcher asked them about the type of support, they received and they revealed in Fig. 9 that the Department of Agriculture (DA) provided them with rice seeds, fertilizers and chemicals alone. Very few were given the required agricultural machineries. The Department of Agriculture usually provides Expenses of the Respondents

assistance to those duly organized and accredited associations and cooperatives in the form of farm machineries and other needed inputs.

The support provided by the DA were seeds, fertilizers and chemicals. These are the basic needs of farmers for their rice farming. However, there were few farmers who received farm machineries particularly those members of the organization.

There were also support and assistance received by most farmers in South Upi. They were seeds, fertilizers, chemicals and some farm machineries. However, farm machineries were given only to organized farmers duly accredited by the DA. These support and assistance help the farmers in enhancing and improving their farm productivity.

In the survey conducted the thirty respondents were divided in their claim saying that they received rice seeds, fertilizers, chemicals, machineries and other farm inputs, Fig. 9. Most of these farm inputs and farm implements were provided by the Department of Agriculture to the farmers who were active members of cooperatives or farmers association duly registered and accredited by the agency.

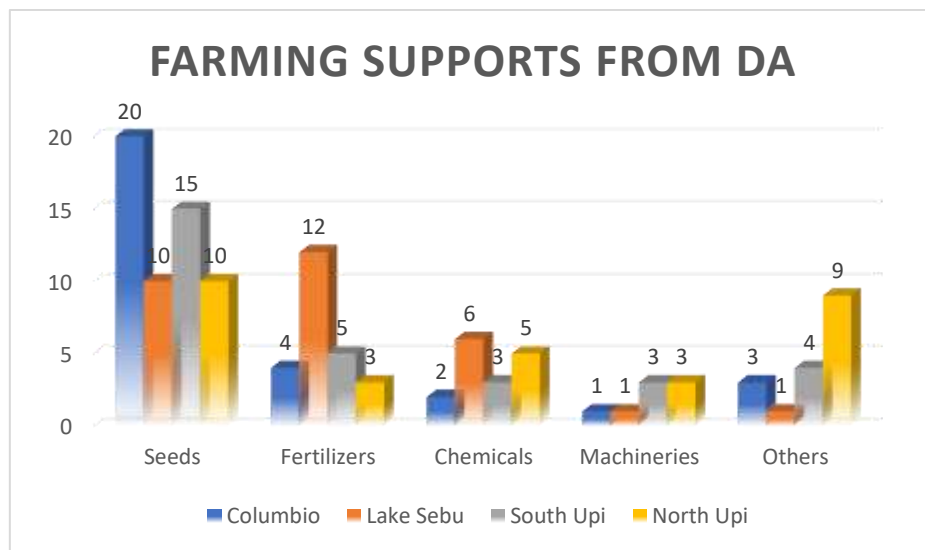


Fig. 9. Farming Supports Received by the Respondents from DA

Peace and Order Conditions.

As usual, municipalities dominated by warring and rebel groups especially those with camps were often encountering instability. Columbio is adjacent to the municipality of Paglas and Buluan who were previously experiencing chaos due to localized conflicts between two opposing clans. This was the revelation of 22 respondents in Fig. 10.

In terms of peace and security, Lake Sebu has limited number of rebel groups operating in the premises of the municipality. However, there were RIDO existing in the municipality as revealed by 14 respondents. Arm conflict is a normal phenomenon in the neighboring areas of Maguindanao province such as Lake Sebu.

Despite productivity of South Upi, there were also presence of rebel group in the area. Occasional gun fighting was heard in the vicinity of South Upi in the recent years.

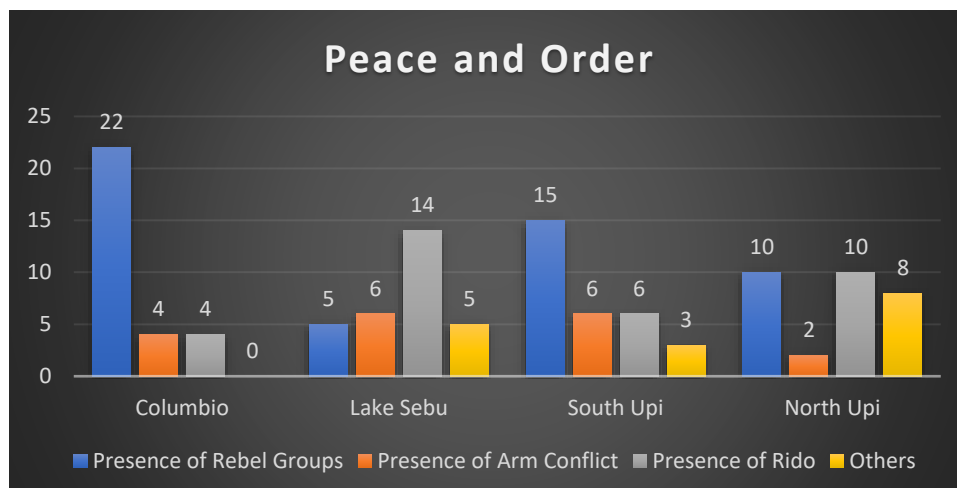


Fig. 10. Peace and Order in the Study Sites

Rice Farming Practices and Methods Adopted.

It was a fact that traditional rice farming is still prevailing in the municipality of Columbio due to lack of enough support from the concerned government agencies. Input support and technical assistance from the Local DA office were not enough to upgrade the rice farming activities of the farmers in the municipality. This was the revelation of the 20 respondents in Fig. 11. However, there were also farmers practicing modern farming techniques, particularly those who received assistance from the DA. In fact, in Fig. 12 twelve (12) and ten (10) out of the 30 respondents claimed that they were practicing modern and combination of traditional and modern farming techniques in Columbio, 15 and 10 in Lake Sebu, 10 and 16 in South Upi, and 8 and 16 in North Upi.

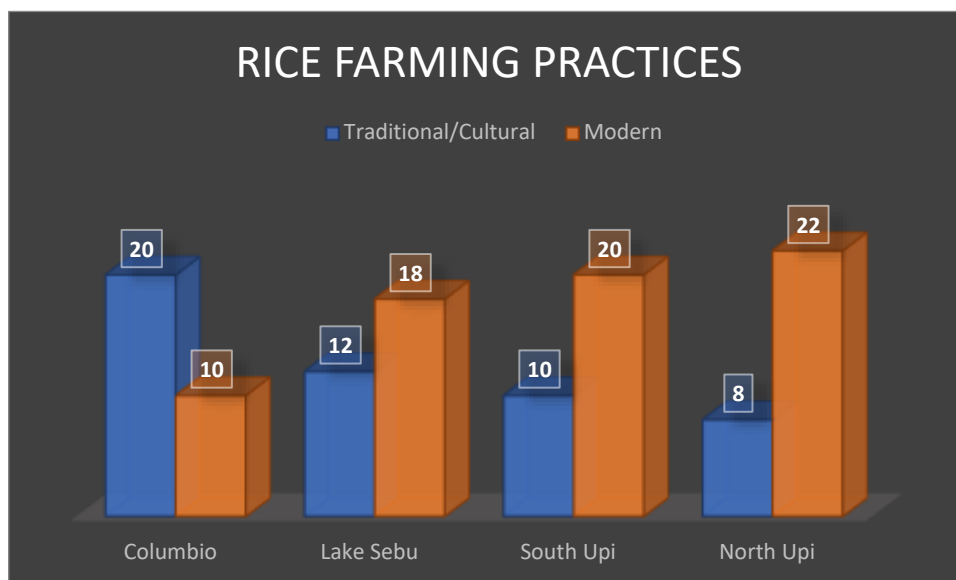


Fig. 11. Rice Farming Practices Adopted by the Respondents

North Upi like South Upi in the province of Maguindanao still practiced and adopted mix of modern and traditional rice farming systems. They used to grow traditional upland rice varieties such as the popular Dinorado or “Bulaw”, the aromatic and glutinous rice varieties.

However, there were also few farmers gradually adopting modern rice farming technology, particularly those who received support and technical assistance from the Department of Agriculture and other government agency.

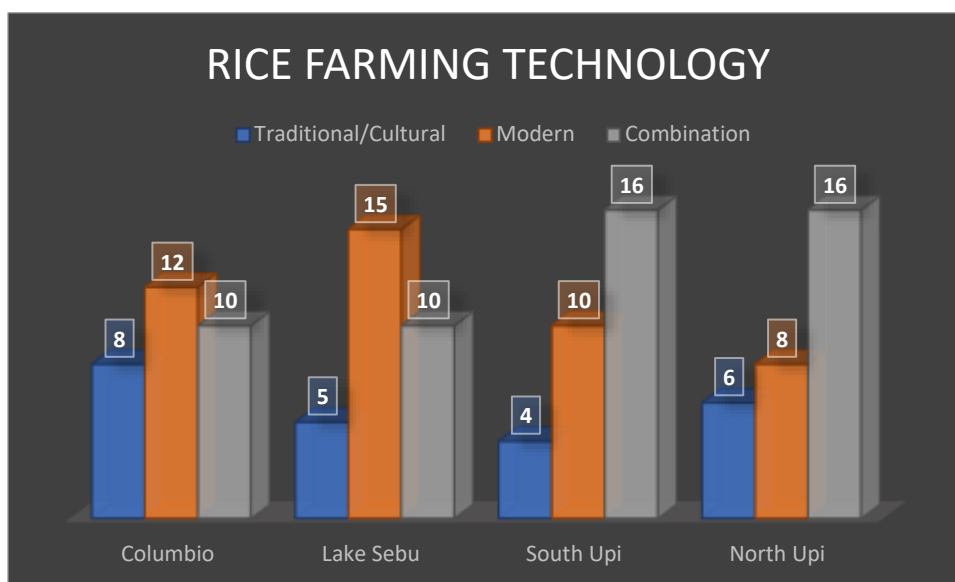


Fig. 12. Feasible Rice Farming Technology

From Fig 13, it was obvious that all farmers in the four (4) municipalities still adopted the basic method of rice farming from Plowing up to Grain storage. They only vary in land preparation because some farmers still used carabao while others used farm tractors such as Kuliglig and Bao-Bao (Floating Tiller).

Farmers in the municipality of Columbio were divided in their land clearing method for rice production. Half of the respondents revealed that they were practicing slash and burn and use of bolo in land clearing.

On the other hand, plowing using carabao and plow is still the option of most farmers in the municipality of Columbio. Others are more advance because they used floating tiller and Kuliglig. They are farmers who received support from the DA.

Wooden harrow is still the feasible mode of harrowing adopted by most farmers in Columbio. Mechanical harrow is rarely used because very few farmers were given the farm machineries.

Rice farmers still practiced soil levelling after harrowing by using wooden leveler (Pakalas), but there were also farmers who did not do soil leveling.

In the upland areas of Columbio most of the rice farmers adopted Direct Seeding method of planting. Others were practicing transplanting and broadcast method, especially those in the irrigated areas.

After planting those farmers in the non-irrigated areas are dependent on rainfall to irrigate their rice field. The case is different in the irrigated areas wherein farmers depend on irrigation water to supply water in their newly planted rice fields.

Despite adopting the semi-traditional methods of rice farming in the municipality of Columbio, there are farmers still using commercial fertilizers to boost their harvest and increased farm productivity.

Moreover, the use of commercial insecticides, pesticides and herbicides were rampant in the municipality of Columbio. Farmer claimed that natural method of pest management cannot control the infestation in the rice field but using commercial pest management could control infestation.

Harvesting the rice using Bayanihan was still the practice of many farmers in this municipality other than Partida or combined harvester. Bayanihan method invites neighbors to join the activity.

Foot threshing is still a popular threshing method in some areas of the municipality. But economically abled farmers prefer to use mechanical thresher or combined harvester because it is more efficient. The only disadvantage is that it deprives the neighbors particularly those marginal famers to join the threshing.

Solar drying is the most efficient drying method adopted by most of the farmer respondents in the municipality of Columbio. Most of the barangays in the municipality have solar dryer provided by many government agencies.

Farmers preferred to store their dried Palay at home or within their small bodega/warehouse. Storage will not mean hoarding but to reserve as household consumption for the next harvest season.

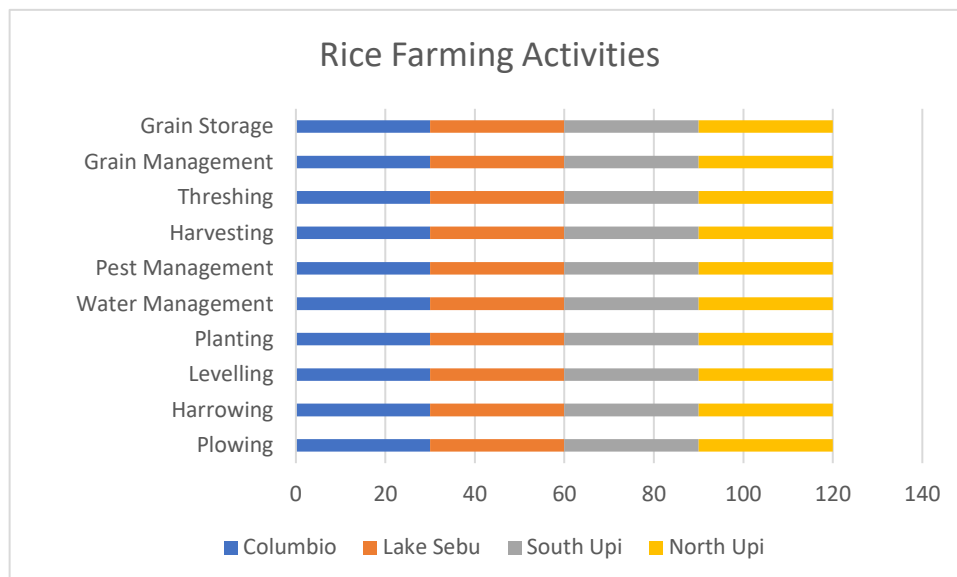


Fig 13. Rice Farming Method Adopted by the Respondents

Correlation between Demographic Profiles and Rice Farming Practices

Gender

The gender of the respondents is highly correlated to the seed selection, land preparation, seed preparation, transplanting, harvesting and post harvesting of rice (Table 1). This indicates that male farmers have significant influence to the said rice farming practices as indicated by positive correlation. Further, it has been observed in the actual field situation that household members such as head of the family and their wives have participated actively in rice field activities such as seed selection, land preparation, seed preparation, transplanting, harvesting and post harvesting. This also means that the combined basic, technical and farming experiences of the female and male farmers can influence the efficient implementation of the above-mentioned rice farming methods.

The study conducted by Castillo, 1985 found out that women has a very big contribution to both rice and corn farming in the Philippines, stating that around 78 percent of the rice and corn farming community is female.

Age.

Rice farming practices such as seed selection, land preparation, seed preparation and pest management were also highly correlated to the age of the respondents as shown in Table 1 column 3. This implies further that the older is the farmer the more efficient they are in doing or implementing the above-mentioned farming practices. This holds thru if the farmer has lengthy experiences in rice farming because the combination of experiences, environmental learning and formal education contributed to the acquisition of technical knowledge which further led to expertise in that particular fields.

In the study conducted by Oladebo & Fajuyigbe in 2007, they found out that older farmers irrespective of sex tends to be more efficient in carrying out field works such as rice cultivation.

Marital Status.

On the other hand, marital status of the respondents was highly correlated to land preparation, seed preparation and harvesting but has no relationship with other rice farming practices as shown in Table 1 column 4. This implies that married farmers of either sex is highly efficient and more effective in doing land preparation, seed preparation and harvesting than single, widow, widower or even separated ones.

The anticipated reason is that married farmers are responsible, accurate in performing field tasks and inclined to provide support to their wives and their children. In other words, they were devoted to work hard in the farm that spending more time in other activities other than farming.

This finding coincided with the result of study conducted by Nwinya, et. Al., in 2014 stating that married farmers were more inclined to get involved in rice production than males with 69.6% responses out of 112 rice farmers they interviewed.

Tribal Affiliation.

The study tried to foster some comparative analysis among tribal groups relative to rice farming practices and found out that most of the rice farming practices from land preparation up to harvesting has high significant positive correlation with the tribal affiliations of the respondents as shown in Table 1 column 5. This further implies that the five tribal groups (T,boli, B'laan, Manobo, Teduray and non-tribal group) adopted rice farming practices but among and between each tribes there were differences in implementing rice farming practices in their respective rice field.

The study of Pradhan, et.al., 2015 affirmed that upland tribal farmers tend to devote more time in tilling and cultivating their ancestral land for rice crops because going downhill from mountain just to buy staple food was hectic for them. Instead, they just stock and store rice grains from their harvest for home consumption.

Highest Educational Attainment.

Educated upland farmers from the four tribal groups were more effective and efficient in seed selection, land preparation, seed selection, nutrient management, pest management and post harvesting activities than uneducated ones as predicted by correlation in Table 1 (Last column). Therefore, it suggested that learned farmers and those with relevant trainings and exposures on upland rice production have enough technical know-how and enhanced KSA on rice farming, particularly in the upland settings.

This finding was supported by the observation of Shehu, et.al., in 2007 stating that level of educational attainment reduces technical efficiency particularly in rice farming activities. They also emphasized the importance of continuous literacy thru adult education relative to farming techniques to enhance productivity and improve production.

Table 1. Correlation between socio-demographic and farming practices of the indigenous Teduray

| Rice Farming Practices | Gender | Age | Marital Status | Tribal Affiliation | Educational Attainment |
|-------------------------|----------|---------|----------------|--------------------|------------------------|
| 1. Seed Selection | 0.411** | 0.456** | 0.135 | 0.621** | 0.290** |
| 2. Land Preparation | 0.493** | 0.567** | 0.678** | -0.394** | 0.425** |
| 3. Sowing | -0.496** | 0.095 | 0.195* | -0.425** | -0.306** |
| 4. Seed Preparation | 0.515** | 0.498** | 0.634** | 0.379** | 0.453** |
| 5. Transplanting | 0.516** | 0.032 | 0.157 | -0.422** | -0.299** |
| 6. Nutrient Management | -0.469** | 0.015 | 0.209* | 0.301** | 0.342** |
| 7. Pest Management | -0.440** | 0.543** | 0.228* | 0.319** | 0.315** |
| 8. Care and Maintenance | -0.483** | 0.059 | 0.166 | 0.376** | -0.340** |
| 9. Harvesting | 0.428** | 0.065 | 0.534** | 0.334** | -0.203* |
| 10. Post Harvesting | 0.488** | 0.009 | 0.149 | 0.373** | 0.345** |

** Highly significant

*Significant at 5% level

Conclusions

Upland rice farming communities particularly the Teduray tribe are unique and gradually transforming from traditional to modern, though there were still few groups who preferred to combine the two farming systems.

Government interventions have great impact in transforming the rice farming system of the upland farmers, particularly the Teduray tribal groups who believed to be descendants of Mamalu. Adoption of modern technology lies much on the extension delivery system. Diffusion of innovation can be more effective if the receiver could have high level of awareness prior to extending a particular technology.

Recommendations

The researcher would like to recommend the following, to wit;

1. Inclusion of priorities the provision of more support and technical assistance to our upland rice farmers vis-à-vis the tribal groups;

2. Design more appropriate extension delivery system that can help motivate traditional farmers to adopt modern rice farming technology, and;
3. Design more appropriate programs/projects/activities that can increase the level of awareness of the traditior upland farmers relative to rice farming technology.

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