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FARM MECHANIZATION OF RICE PRODUCING COMMUNITY IN DOLORES, EASTERN SAMAR

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ABSTRACT

The study aimed to assess the farm mechanization of rice producing community in Dolores, Eastern Samar Specifically in the following areas: socio-demographic profile of the rice farmers, farm machines and equipment used by rice farmers, ownership status and mode of acquisition of the different farm machineries and equipment of the rice farmers, benefits derived from farm mechanization in sustainable rice production It was conducted on February-April, 2019 at the selected Barangay of Dolores Eastern Samar namely: Barangay Malaintos, Gap-ang, Jicontol, Hinolaso and Rizal. A one-on- one interview was utilized to collect the appropriate data. The result indicated that majority the respondents are male and tenant of the land they cultivated, used traditional and modernized tools and equipment in rice farming, ownership status of the equipment's are mostly rented and mode of acquisition are through the aid of LGU and NGOs, agreed on the benefits derived from mechanization for sustainable rice production Conclusion were made based on the results of the study. Rice farmer's average income is enough to sustain their needs, they not have the capability to invest in capital-intensive facility in rice farming, farmers attitude towards farm mechanization are very positive, support service from the government is important. The researchers recommend rice farmers to accelerate farm mechanization to increase rice productivity for food security, department of agriculture should establish farm machinery training and demonstration, financial assistance and loans must continue to provide machinery owned to provide machinery owners of continued farm production operation and conduct similar studies in other localities spearheaded by different campuses of Eastern Samar State University.

CHAPTER I
INTRODUCTION
BACKGROUND OF THE STUDY

The Philippine government has been striving to develop and promote appropriate farm machinery and other mechanization technologies. It is well known that farm mechanization raises the efficiency of farm operations and inputs, and lower production costs and postharvest losses. Therefore, this would help address poverty. social equity, and food security and enhance agricultural competitiveness and sustainable development leading to increased farmer's income (Bautista, E, Kim Jong- sun: Kim yun jung: Panganiban, E.2017)

However, the Philippines is classified at low-mechanization level (Suministrado, 2013) Several reasons are low buying power of farmers, high cost of machines and government policies not favorable to mechanizing agriculture.

One of the agricultural towns that strives to adopt and starts modernizing in the operations is Dolores, Eastern Samar. Presently, its population is 42, 866 and is largely dependent on rice as staple food (Phil Atlas, 2019). The town faces the Pacific Ocean, which relatively has consequential effect to its unique climatic condition that receives heavy rainfall throughout the year and is frequently visited by strong typhoons. Apart from being the source of staple food, many families depend on rice cultivation for income. By means of applying proper rice production technologies, rice farmers can earn an average net income of as much 21 to 41 thousands pesos depending on the quality of seed planted, cost of fertilizers, and other production inputs and insurance fee (Department of Agriculture 8, 2012).

Known for being the Rice Granary of Eastern Samar, Dolores needs to accelerate farm mechanization as a means to attain food sufficiency, increase farm income and modernize agriculture.

Thus, the researchers come up with study to assess the status of farm mechanization of rice farmers among selected barangays of Dolores Eastern Samar This study is imperative in the formulation of location specific recommendation for appropriate mechanization strategies. It also provides baseline information for future evaluation of various mechanization program of the said locality. The researchers believe that an assessment of machineries owned and used by rice farmer is considered necessary.

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OBJECTIVES OF THE STUDY

This study aimed to assess farm mechanization status of rice producing community in Dolores, Eastern Samar. Specifically, the study aimed to:

1. Identify the socio-demographic profile of the rice farmers in terms of:
   a. Name
   b. Gender
   c. Age
   d. Civil status
   e. Educational attainment
   f. Household size
   g. Occupation
   h. Monthly Income
   i. Farm size
   j. Tenurial status
2. Identify farm machines and equipment used by the rice farmer.
3. Assess the ownership status and mode of acquisition of the different farm machineries and equipment of the rice farmer.
4. Identify the benefits derived from farm mechanization in sustainable rice production.

SIGNIFICANCE OF THE STUDY

This study sought to provide information on the farm mechanization status among rice farmers that could help to improve their farming system for a sustainable rice production.

Specifically, this study is significant to the following:

Community- This is significant to the community to let them know and for them to be aware of the advantages of farm mechanization in rice farming.

Department of Agriculture Personnel- This may help and contribute information regarding the current status of farm mechanization among rice farmers. This may serve as data for future evaluation of various mechanization program in the locality for them to extend assistance and extension activity.

Rice Framers- The study gives vital information to adopt farm mechanization and to enhance their production and increase their income.

Local Government Unit (LGU)- This study gives information to the LGU in order to come up with an appropriate project, plan or program to improve the farming system of the rice farmers.

Researchers- The study gives additional information on farm mechanization and serves as a guide in making similar study.

Students- The study served as ready reference in conducting research on farm mechanization status among rice farmer.

SCOPE AND LIMITATION

This study was conducted among selected barangay in Dolores Eastern Samar and only limited to the status of farm mechanization of rice farmers and assessment on the machineries and equipment owned and used by the rice farmers as well as the mode of acquisition and benefits derived from farm mechanization. The researchers did an interview with the aid of survey questionnaire as guide to the target clientele. This study was conducted from February - April 2019

DEFINITION OF TERMS

The following terms are operationally defined as it was used in the study.

Direct Interview Methods - refers to the method collecting data that were employed by the researchers. It is one-on-one encounter between the researcher and the respondents.

Farm Mechanization- refers to the use of powered machines or farm machineries in different rice farming activities or operation.

Farm Modernization- refers to transforming the farm into one that is dynamic, technologically advanced and competitive yet centered on human resource development.

Rice Farmers- refers to the farmer person who till the land for rice production and uses farm machineries for rice subsistence and livelihood.

Rice Production- refers to the amount of rice paddy produced in a given calendar year, this includes the quantities of rice sold in the market and the quantities consumed or used by the producers.

Sustainable Rice Farming -refers to the process to which rice farmers manage soil, water and other basic inputs to enhance productivity and maintain it to meet farm and
family needs without adversely affecting the production environment and the future resources.

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CHAPTER II
REVIEW OF RELATED LITERATURE AND STUDIES

There has been a continuous debate on the impact mechanization in agriculture since the days of green revolution. The last few years have added more to the controversy on power tillers and tractors, further complicated by the latest biological and mechanical innovations. It is, therefore, not surprising that apart from the massive amount of research work done by individuals and organizations, there have been frequent demands from the policy makers to undertake further specific studies in this area. Hence the important work carried out on this aspect is reviewed comprehensively to understand the direction of research carried out so far and to evolve a possible improvement over such available studies. Majumdar et al. (2009) have explored the difference in the efficiency and productivity among owner, cash tenant and crop share tenant. Total cash expenses as well as total gross costs for producing HYV Boro rice was highest in owner farms and lowest in crop share tenant's farm.

Pandey (2004) discussed that farm equipment are used in farming operations, including immediate postharvest activities, with a view to increasing productivity of land and labour through timelines of operations, for efficient use of inputs, improvement in quantity of production and safety and comfort of farmers, and reduction in loss of produce and drudgery of farms.

The paper of Malanon, H. and Dela Cruz, R. (2018) provided information on the status of on farm paddy mechanization in the Philippines as bases of formulating appropriate mechanization strategies. Result showed that rice farm operations such as threshing and land preparation were already highly mechanized with 93% of paddy volume passing through mechanical thresher and 79% of area being serviced by machines. The power utilized in land preparation was 61% of the total power utilized in threshing (24%) harvesting (7%) and transplanting and crop management (2%)

Similar study was conducted by Gavino, Romeo et al. (2006) on farm mechanization status in irrigated lowlands region 1, 2, and 3, result showed that land preparation was almost 100% done through the use of machinery, particularly the hand tractor, though the ownership of such machines accounts only to 50%. Harvesting and postharvest activity have also distinct level of mechanization. Furthermore, results revealed the farmer's ideas which in a way or another impede the facilitation of farm mechanization such as displacement of labor, manual labor efficiency, etc. Conclusively, the cost, speed of operation and ease or tediousness of the activity were the three major factors considered in facilitating farm mechanization.

According to Verma, S.R (2006), agricultural mechanization implies the use of various power sources and improved farm tools and equipment, with a view to reduce the drudgery of the human being and draught animals, enhance the cropping intensity, precision and timeliness of efficiency of utilization of various crop inputs and reduce the losses at different stages of crop production. The end objective of farm mechanization is to enhance the overall productivity and production with the lowest cost of production The contribution of agricultural mechanization has been well recognized in enhancing the production together with imigation, biological and chemical inputs of high yielding seeds varieties, fertilizer, pesticides, and mechanical energy. Several studies have been conducted on the impact of agricultural mechanization on production, productivity, cropping intensity, human labour employment as well as income generation. Different researchers have concluded that farm mechanization enhance the production and productivity of different crops due to timeliness of operation, better quality of operations and precision in the application of the inputs.

One of the most crucial factors in attaining rice self-sufficiency in the country according to the Department of Agriculture (DA) is the implementation of its farm mechanization program.

The DA's Farm Mechanization Program aims to further increase the productivity and income of the farmers while helping them become an "agri-preneurs and less dependent on intensive labor in crop production. For the last three years, farmers who have availed of the program are very thankful to the DA for giving them the necessary intervention that will not only provide higher income and profit but also giving them the sense of responsibility and pride in helping their co-farmers improve their farming techniques.

In a statement, Philippine Institute of Development Studies (PIDS) (2018), local farm sector is still in the mechanization phase, generally considered part of the second Industrial revolution. Philippine agriculture still lags behind, affecting its productivity. This is amid the fact that several countries across the world are already reaping the fruits of fourth industrial revolution in their respective agriculture sectors. Valencia, C (2018) added that given the sector's low productivity and supply constraints, these new technologies are important because these could catalyze the sector's growth and attract new investment these technologies can also be utilized to promote food security as a number of the country's agriculture lands are being converted to other purposes. and demand for food is fact outpacing supply PIDS noted that 2000 to 2017, growth in the agriculture sector has slowed down, from 3.2 to 1.4 percent, making it the weakest among sub sectors.

This weak performance of agriculture should be of concern to the government as the economy of the regions outside Manila are dependent on agriculture.

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As the country aims for a more balanced economic growth it needs a second. more knowledge intensive green revolution that combines advances in science and Agricultural Engineering with the county's unique traditional knowledge to make agricultural more environmentally resilient.

CHAPTER III
METHODOLOGY

This chapter describes the Research Design, Research Locale, Research Respondents Research Instrument, Sampling Procedure, Data Gathering and Statistical Analysis of the study.

RESEARCH DESIGN

The descriptive research design was used in the study using a survey questionnaire as the main research instrument in gathering the date accompanied with some personal interview to ensure that all questions were answered correctly. This method provided the data that is likely more objective, easier to answer and have more accuracy in the tabulation process.

RESEARCH LOCALE

The study was conducted among the rice farmers in selected Barangay of Dolores, Eastern Samar namely: Barangay Malaintos, Barangay Gap-ang, Barangay Jicontol, Barangay Hinolaso and Barangay Rizal. The said barangay was selected for this study because the area is known to be among the top rice producers in the said locality.

RESEARCH RESPONDENTS

The respondents of the study were the rice farmers who has a land area of 1 hectare. The selection was based on the willingness of the rice farmer and their convenient time for an interview and data gathering purposes. One hundred (100) rice farmers were taken as the respondents of the study.

BARANGAY	NO. OF RESPONDENTS	PERCENTAGE
Malaintos	20	20%
Gap-ang	20	20%
Jicontol	20	20%
Hinolaso	20	20%
Rizal	20	20%
TOTAL	**100**	**100%**

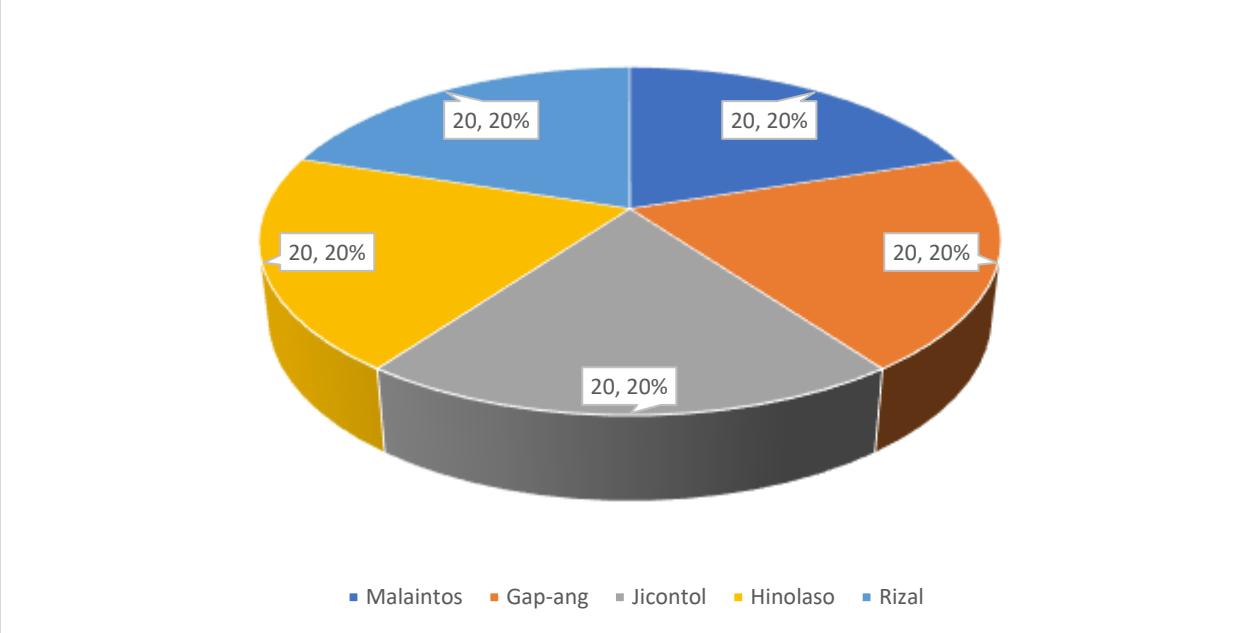

Figure 1. DISTRIBUTION OF RESPONDENTS OF EACH BARANGAY

RESEARCH INSTRUMENT

The researchers employed survey questionnaire checklist originally written in the English and was translated and prepared to vernacular before it was conducted in the five (5) Barangays. Formal and non-formal interview in the house of the respondents were done so that they can easily comprehend and become attentive during the interview.

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The survey questionnaire checklist contained these parts:
Part I. Socio-demographic profile of farmer
Part II. Identification of the farm machines and equipment used by the farmer. Part III. Assessment on the ownership status and mode of acquisition of the different farm machineries and equipment of the farmer
Part IV Benefits derived from farm mechanization for sustainable rice production.

SAMPLING PROCEDURE

The researchers used the non-probability sampling technique commonly called purposive. The number of respondents that was interviewed was one hundred (100) A structured questionnaire was used to collect data that gave answers to the research objectives. Respondents in the five (5) barangays were identified using purposive sampling technique in choosing the respondents, they were asked if they own and use farm machineries and equipment in rice farming, the ownership status and the mode of acquisition together with their socio-demographic profile. Purposive was likewise used in choosing the barangay as source of respondents

To compute the percentage, the formula below will be use:
P=F/N (100)
Where:
P=Percentage
F=Frequency of responses under each category
N=total number of respondents

DATA GATHERING

The data were gathered through series of interview using a semi-structured interview schedule. The interview was conducted according to the available time of the respondents. The questions were asked in waray dialect for the respondents to easily understand the questions. Before the conduct of the study, proper protocol was supplemented. The researchers made letter, seeking permission from the Head and Dean of the College of Agriculture approved by the Campus Administrator for the conduct of the research study. A letter was also sent to the Barangay Captains through the office of the Mayor requesting for endorsement and permission to gather data from the different selected barangays to ensure the safety of the researchers during the conduct of the study.

STATISTICAL ANALYSIS

The data were organized, tabulated and analyzed using descriptive statistical tools like frequency counts and percentages. Ranking was also used to determine the priority items. These tools were used in summarizing the data on demographic profile of the respondents, identification and assessment of the ownership status and mode of acquisition of the farm machineries and equipment's so with benefits from farm mechanization for sustainable rice production. One hundred percent (100%) samples of one hundred (100) respondents in all five (5) barangays were taken to represent on the tabulation.

CHAPTER IV

RESULT AND DISCUSSION

This chapter presents the result and discussion based on the finding of the study. The result first in a table illustration followed by interpretation in a paragraph.

RESULTS AND DISCUSSION OF SOCIO-DEMOGRAPHIC PROFILE OF RICE FARMERS IN THE FIVE SELECTED BARANGAY OF DOLORES EASTERN SAMAR

As one of the main objective of this study, this part describes the Socio- Demographic profile of the rice farmers, which will reflect their characteristics within five (5) selected barangay in order to illustrate a clearer picture on who were the sources of information in this study.

INDICATOR	N=100	PERCENTAGE
Gender		
Male	76	76%
Female	24	24%
Age		
21-30	10	10%
31-40	21	21%
41-above	69	69%
Civil Status		
Single	11	11%
Maried	88	88%

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Widowed	1	1%
Separated	0	
Educational Attainment		
Elementary Level	12	12%
Elementary Graduate	32	32%
Secondary Level	11	11%
Secondary Graduate	33	33%
College Level	7	7%
College Graduate	5	5%
Other (Specify)	0	
No. of Household member		
1-5	47	47%
6-10	50	50%
11 above	3	3%
Occupation		
Rice Farmer	89	89%
Government employee	5	5%
Entrepreneur	4	4%
Onther (spicify)	2	2%
Monthly income		
20,001-above	13	13%
15.001-20,001	44	44%
10,001-15,001	14	14%
10,000 or less	29	29%
Farm size		
1-1/2 (ha)	19	19%
1.1-2 (ha)	40	40%
2.1 (ha) above	41	41%
Tenurial status		
Owned	32	32%
Inherited	20	20%
Tenant	46	46%
Rented	2	2%

Table shows that 69% of the respondents belongs to the age bracket ranging from 41 years old above. This only shows that most of the respondents working in their field are in adult ages, it is evident that the average age of farmers in the Philippines is 57, which also attributed to some factors in experience and readiness of rice farming.

With regards to the gender 76% respondents were males and 24% were female. This implies that most of the respondents were male since rice farming requires heavy labour. That is why rice farming is male dominated, operating the machine require some physical strength possessed by males.

Pertaining to civil status 88% respondents were married. This shows that the respondents need to produce more rice in order to raise their income since they have families to support with.

As to the educational attainment 33%, respondents have graduated their secondary education, and 5% graduated from college, signifying that the respondents are literate since most of them have reached secondary education. This denotes that most of the respondent can understand and have the intellectual capability to handle and operate farm machineries.

With regards to the number of household member, 50% respondents have a household member ranging from 6-10, and the rest have number of children from 1-5 with 47%. This indicates that most of respondents have large family size, in order for them to provide their children's need they have to produce more rice.

As to their occupation, 89% of the respondents are rice farmers and 2% is dealing with other source of income. This means that most of respondents are solely rice farmers and rely on rice production as their source of livelihood and income.

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With regards to the monthly income, 44% of the respondents were gaining 15,001-20,000 every month, and 13% were gaining 20,000 above. This indicates that the respondents are above the poverty threshold based on the National Statistics Office (NSO) source in 2000. The Philippines Statistic Authority (PSA) currently pegs the poverty threshed at P9, 063, 75 a month this implies that respondents can meet basic foods needs and other non-food requirement such as clothing, housing, transportation, health and education expenses.

As to the farm size, majority of the respondents have tarm size of 2.1 (ha) above, and 19% respondents have 1/2-1 (ha) respectively. This indicates that the size of the farm is associated with their income. The larger the size of the farm the higher income they get.

In terms of tenurial status, 46% respondents are tenants 2% rented the farm they till. This denotes that most of the rice farmers do not own the land that is why their net income are lesser for they have to share the farm product/rice to the owner.

FARM MACHINES AND EQUIPMENT USED BY RICE FARMERS

Farm machinery and equipment's used in rice farming save labor. It includes a great variety of devices with a wide range of complexity, from simple to modern mechanized machines. As shown in the table below is the list of farm machines and equipment used by rice farmers of the five (5) selected barangays of Dolores, Eastern Samar

TABLE 2. Farm Machines and Equipment Used by Rice Farmers in Barangay Malaintos, Gap-ang, Jicontol, Hinolaso and Rizal.

INDICATORS	N=100	PERCENTAGE	RANKING
Rice mill	92	92%	1
Hand tractor	90	90%	2
Plough	80	80%	3
Moldboard Plough	74	74%	4
Vehicle for hauling	39	39%	5
Mechanical Dryer	20	20%	6
Grass cutter	11	11%	7
Rice thresher with blower	5	5%	8
Harvester	4	4%	9
Four-wheel tractor	2	2%	10

Table 2 shows that rice mill ranked first with 92% of the respondents used it. This shows that respondents demand for a fast, efficient and modern rice mil. The use of hand tractor, plough, and moldboard plough, and vehicle for hauling followed respectively. This data shows that most of the respondents uses farm machines to mechanize several farm tasks to reduce the laborious system of farming.

The data implies that Dolores, Eastern Samar is lagging behind in terms of mechanization. There is an insufficient number of machines presently used by rice farmers which measures the low mechanization level of the locality.

The succeeding table include the ownership status and mode of acquisition of the machines and equipment owned and used by the rice farmers. This determines the ownership and acquisition condition of farm machinery of the five (5) barangays of Dolores, Eastern Samar.

Table 3. Ownership Status of acquisition of different Machineries and Equipment Used of Barangay Malaintos, Gap-ang, Jicontol, Hinolaso, Rizal.

INDICATORS	N=100	PERCENTAGE (%)
Hand Tractor		
Owned		**38%**
Barrowed	**9**	**9%**
Rented	**43**	**43%**
Mode of Acquisition		
Cash	36	36%
Installment	0	0%
Government Grant	37	37%
NGO	17	17%
Plough		
Owned	28	28%
Barrowed	19	19%
Rented	33	33%

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Mode of Acquisition		
Cash	27	27%
Installment	0	0%
Government Grant	33	33%
NGO	20	20%
Moldboard plough		
Owned	26	26%
Barrowed	3	3%
Rented	45	45%
Mode of Acquisition		
Cash	30	30%
Installment	0	0%
Government Grant	30	30%
NGO	14	14%
Rice mill		
Owned	7	7%
Barrowed	0	0%
Rented	85	85%
Mode of Acquisition		
Cash	92	92%
Installment	0	0%
Government Grant	0	0%
NGO	0	0%
Vehicle for hauling		
Owned	3	3%
Barrowed	0	0%
Rented	36	36%
Mode of Acquisition		
Cash	39	39%
Installment	0	0%
Government Grant	0	0%
NGO	0	0%

Pertaining to hand tractor, 43% of the respondent rented the machine 9% of them borrowed and 38% of them owned the machine. On the mode of acquisition, 37% of the respondents got the tractor through government grant. 36% purchased it by cash. This data implies that most of the respondents know the importance of the machine in their farming system and that they lack financially to purchase the tractor.

As to the plough, 33% rented the machine, 19% borrowed and 28% owned the plough. This indicates that most of the farmer relied on using this farm implement during land preparation. As to its mode of acquisition, 33% of the respondents got the plough by government grant 27% owned it by cash payment and 20% though the aid of Non-Government Organization (NGO). This data implies that most of the respondent lack fund to avail the machine.

Regarding the moldboard plough, 45% of the respondents rented it, 26% owned and 3% borrowed the machines. This indicates that most of the respondents find the moldboard plow a vital tool in farm maintenance. As to its mode of acquisition, 30% got the moldboard plough in cash payment, 30% through the grant of government and 14% through NGO. This show that most of the respondents do not have the financial ability to acquire the machine.

With regards to rice mill, 85% rented it, 7% owned the rice mill. 92% of the respondent, mode of acquisition of rice milling is by cash payment. This indicates that most of the respondents prepared fast rice milling.

Regarding the vehicle for hauling, 36% rented it, 3% of the respondents owned the vehicle. As to its mode of acquisition, 39% of the total respondents acquired the vehicle by cash payment. It implies that most of the respondents cannot afford to avail vehicle for hauling due to financial constraints.

Table 3 data asses the inability of rice farmers to acquire and own farm machineries that could help in achieving the optimum crop production and reduce human drudgery to an extent. The data implies the limitation of mechanization in rice farming. First,

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economic limitation: Rice farmer are generally poor. Most of them cannot afford to purchase farm machines. Second, is small holding, as a result of small area of land cultivated, since most of the respondents has a farm area of 2.1 (ha) it is not economical for farmers with such small land to buy farm machineries and other farm implement.

BENEFITS DERIVED FROM FARM MECHANIZATION FOR SUSTAINABLE RICE PRODUCTION

The table shows the benefits derived from farm mechanization were counted and tallied depending on the perspective of the rice farmers from five (5) barangays of Dolores, Eastern Samar.

Table 4. Benefits Derived from Mechanization for Sustainable Rice Production in Barangay Malaintos, Gap-ang, Jicontol, Hinolaso, & Rizal.

INDICATION	N=100	PERCENTAGE	RANKING
1. Fast Production process in rice farming.	100	100%	1
2. Remove the difficulty in farming	99	99%	2
3. Time consuming during land preparation is lesser	97	97%	3
4. Reduce labor in farming	94	94%	4
5. Increase rice farming productivity	85	85%	5
6. Solve the problem of labor shortage in rice farming.	80	80%	6
7. The use of machineries in farming attracts rice farmers and educated persons to take up farming.	68	68%	7
8. Improve the quality of farm produce in rice farming.	53	53%	8
9. Encourage large scale production in rice farming	50	50%	9

Figure 5. Benefits Derived from Farm Mechanization for Sustainable Rice Production

As gleaned on the table 4, with regards to the benefits derived from farm mechanization, fast production process of rice farmers ranked first with 100% responses from the respondents, 99% of the respondents believed that the farm mechanization removes the difficulty in farming, 94% believed that it reduces labor in rice farming, 80% approved that farm mechanization solves the problem of labor shortage in rice farming, while 50% agreed that farm mechanization encourages large

scale production in rice farming. This data indicates that the farmers are fully aware of the impact of farm mechanization on production, productivity, human labour employment as well as income generation for a sustainable rice production.

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter presents the summary, conclusion and recommendation of the study. SUMMARY This study is entitled Farm Mechanization Status of Rice Producing Community in Dolores, Eastern Samar. This is a descriptive type of research, which utilized a survey questionnaire checklist accompanied with actual interview to gather the needed data. The study was conducted on February - April 2019 at the selected barangay of Dolores, Eastern Samar namely: Barangay Malaintos, Gap-ang, Jicontol, Hinolaso, and Rizal. The respondents of the study were the rice farmers of the selected barangays who were selected based on their willingness and availability for an interview and the rice farmers who has farm area of 1 ha. Data were classified, tabulated and analysed using statistical tools.

There were 100 target respondents taken from the five selected barangays.

This study made use of the frequency count, percentage and ranking as statistical tools in dealing with the collected data to satisfy the problem of the study. This study aimed to attain the following objective:

1. Determine the socio-demographic profile of the respondents.
2. Identify the farm machines and equipment used by the rice farmer.
3. Assess the ownership status and mode of acquisition of the different machineries and equipment owned and used by the rice farmers
4. Identify the benefits derived from farm mechanization for sustainable rice production.

The following result were based on the finding of the study. Majority of the respondents were male who were 41 years old and above, married and have graduated secondary education with a number of household member ranging from 6-10. Respondents rely on rice farming of their source of livelihood with a monthly income ranging from 15,001-20,000.00, having a farm size of 2.1(ha) above and most of them are tenants of the said farm.

Most of the respondents used hand tractor to mechanize several farm tasks. Most of them used plough, moldboard plough and rice mill in rice farming. Most of them do not used four-wheel tractor, plastic drum seeder, rice planter, rice reaper, rice thresher with and without blower, irrigation pump, irrigation sprinkler, flatbed dryer, micro mill, rice harvester and vehicle for hauling.

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Majority of the respondents rented hand tractor and the mode of acquisition is through government grant. Plough and moldboard plough are rented mostly by the rice farmers granted by government as mode of acquisition. Most of the machineries and equipment listed in the questionnaire are rented and acquired through the aid of government and NGOs.

Rice farmers agreed on some of benefits of farm mechanization like fast production process, removes difficulty in farming, farm mechanization reduces labour, farm mechanization solves the problem of labor shortage, encourage large-scale production in rice farming.

CONCLUSION

The following conclusion were made based on the result of the study:
The five Barangays of Dolores, Eastern Samar namely, barangay Malaintos, Gap-ang, Jicontol, Hinolaso, and Rizal are among the rice producing barangays.

1. The socio-demographic of the respondent has great influence on rice production. Majority of respondent rely on rice farming as their source of livelihood, most of them are tenants of the land they cultivate they have to share the yield after harvest. Therefore, they have to double their effort to be able to maximize and to have higher income to satisfy their daily consumption. Most of the rice farmers have less net income. Therefore, they do not have the capability to invest in capital-intensive facilities used in rice farming.
2. Majority of the respondents use traditional and modernized tools and equipment in planting and harvesting the rice grains. Therefore, they are practicing mixed rice farming system.
3. Lack of financial capability and low skill in terms of technological competence hinders rice farmer's adoption to farm mechanization. There is considerable room for improving mechanization in the five selected barangays of Dolores, Eastem Samar based on on-farm mechanization through the support of LGU and extension workers.
4. Farmers attitude towards farm mechanization are very positive, therefore, provision of support services from the government is important based on the actual needs and priority of the rice farmers.

RECOMMENDATION

The following recommendations were based on the findings and conclusions of the study.

1. With this finding, it is necessary to accelerate the farm mechanization to increase rice productivity for food security.
2. Department of Agriculture should establish a farm machinery training and demonstration for an effective promotion on commercially available machineries that can perform effectively in doing rice farming activities.
3. Government support is needed to boost rice production in the locality. LGU should make more effort to allocate more budget or fund to the agricultural sector thru the office of Department of Agriculture.
4. Government private sector complementation is vital in promoting farm mechanization. Financial assistance and loans must continue to provide machinery owners and uses of continued farm production operation,
5. Proper system and management should be utilized to the used of farm machines donated by the LGU and NGOs to the different barangays to have an equal privilege between farmers.
6. Similar studies should be conducted in other localities in Eastern Samar to enhance farm mechanization among rice farmers in the province for purpose of sustainable rice production spearheaded by the different campuses of Eastern Samar State University.

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