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THE EXTENSION SERVICES AND THE LEVEL OF PRODUCTIVITY OF SUGARCANE FARMERS IN THE VISAYAS, PHILIPPINES

Paulino A. Oñal, Jr., Nescel P. Panes and Violeta A. Neri
Ifugao State University, Ifugao, Philippines

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Abstract:

Agricultural extension has been an essential strength in agricultural development and social innovation factor. Contemporary models were the products of the last two centuries. The word "extension" in the modern meaning was first used which refers to informal public education in England in the second half of the 19th century (Demiryurik, 2014).

This descriptive method of research aid at determining the effectivity of extension services and the productivity of sugarcane farmers in the Visayas, Philippines. The 400 sugarcane farmers randomly identified at the 10 Mill Districts in the Visayas area of the Philippines. An instrument used was the agency Extension Program Guidelines that measures productivity of the farmers, farm profile and extent of services, among others.

The result shows that the level of productivity of sugarcane farms in the Visayas area was high and a significant difference indicates on the level of productivity of sugarcane farms when grouped as to location. The level of productivity of sugarcane farming in the Visayas in terms of indicators such as size of farm, type of soil, land topography, average rainfall received, distance of the farm to the sugar mill, farming innovations, workers' availability and expenses per hectare was at low productivity. Significant difference in the productivity of sugarcane farming in the different Mill Districts in the Visayas area in terms of size of farm, land topography, distance of the farm to the sugar mill, farming innovations, workers' availability, and expenses per hectare except for the type of soil and average rainfall. The extent of services does not significantly related to the productivity. Relatively, there is no significant relationship existed between the extent of services and farm profile. Farm profile does not influence the level of productivity, too.

Keywords: Extension services, Level of Productivity, Sugarcane Farmers, Farm Profile

1. INTRODUCTION

1.1 Background

Agricultural extension has been an essential strength in agricultural development and a social innovations factor. A contemporary extension models were the products of the last two centuries. The history of agricultural extension spreads over four thousand years already due to the evolution experienced. The word "extension" in the modern meaning was first used which to refers to an informal public education in England in the second half of the 19th century (Demiryurik, 2014).

The root word of "extension" is originated from the verb of "extend"; its dictionary meaning is "communicating with people", in a synonymous way, it represents the work of "extension". The word extension sometimes is mistaken used to refer to "publishing". Nevertheless, the meaning of agricultural extension has a narrower scope of science as an education-teaching tools or techniques (TDK, 2014).

Mandalios (2014) discussed further that the agricultural extension officers constantly communicate to farmers about agricultural information on natural resources, on how best to utilize the farmland, how to construct proper irrigation schemes, economic use, and storage of water, and save on the cost of farming equipment and procedures. It is critical that farmers fully comprehend this information and apply the advice with their agricultural production.

Like any other ASEAN countries, the Philippines is not so prepared until now by the impact of 2015. The industry should now be through with the identification of the things to be done. The Philippines must therefore be on the implementation phase of appropriate programs and interventions to enable the industry to address the threats and exploits the opportunities of trade liberalization, especially on the delivery of modern agricultural extension services.

For sure, the country will be greatly affected by the reduction of tariff of imported sugar at 5% (starting 2015).

The full integration of ASEAN Economic Community (AEC) wherein the goods and services (including sugar) is expected to flow freely within the Region, the Philippine sugarcane industry will need to gear up for competition against its neighbors in the AEC.

The Sugarcane Roadmap 2020 (CY 2014-15 to CY 2019-20 version, September 2015) of the government, mentioned that the industry had increased its contribution to the national economy to as much as Php87 billion in Crop Year 2013-14 from Php76 billion only in Crop Year 2009-10 (The Sugarcane Industry Roadmap 2010, CY 2010-11 to 2015-16 version).

The increase was from sales of raw sugar, molasses, and bioethanol, tolling fees on sugar refining and VAT on refined sugar. In addition, it brought in US$ 111.76 million in CY 2013-14 through exports of sugar to the US and world markets. Moreover, the displacement of gasoline with 10% derived from sugarcane and molasses, it also generates savings of foreign currency reserves apart from contributing towards a cleaner and greener environment.

Under the current scenario it was spelled out on the roadmap, the more productive and competitive sugarcane industry will further increase its contribution to about Php100 billion through the opening of additional bio-ethanol plants and production of renewable power as well as other products from sugarcane like specialty sugars, bio-water, bio-plastics and more. The establishment of support industries will likewise contribute significantly to the revenue streams on an expanded sugarcane industry.

At present, sugar statistics shows that there are more than 80,000 farmers who are tilling the 424,199 hectares (out of the total land area of 30 million hectares, (SRA Bulletin, March 04, 2018) of sugarcane fields all over the country with an average production of 59 tons per hectare and LKg/TC of 1.98 (CY 2016-17). Of the total number of sugarcane farmers mentioned-above majority of them are considered small (farms are 5 hectares or below). In Crop Year 2015-16: 79% are small farmers, 17% are cultivating 5.01 to 50.00 hectares and only 4% have 50.01 hectares and above (Overview of the Sugarcane Industry, updated October 2017).

The total number of agricultural and industrial workers who are directly employed in the industry is about 700,000. Furthermore, under the industry are 27 operating sugar mills, 13 operating sugar refineries, 10 operating bio-ethanol fuel distilleries and 6 biomass power-generating plants as of Crop Year 2015-16 (Executive Summary, DRRM Plan for the Sugarcane Industry 2017-2022).

Relatively, latest survey mentioned by Crisostomo (2018), indicates that sugarcane farms have a total of 32,000 laborers second to the banana plantation with 49,866 workers. An estimated 700,000 "sacadas" (seasonal plantation workers) is working in sugar and other haciendas (estates) nationwide, it mentioned further.

Talking about mill district, a "Mill District" refers to a centrifugal (raw) sugar mill together with the sugarcane plantations adherent thereto. A plantation is deemed adherent by virtue of sugarcane being delivered to a mill regardless of contract relation between the mill and the plantation owner and/or any other person cultivating sugarcane in the plantation contiguous to the mill (as defined on the Implementing Rules and Regulations of RA 6982).

On the production side, the total volume of sugar which was produced by the fourteen (14) mill district in the Visayas was 1.65 million metric tons which is 66.00 percent of the total production of the country (2.50 million metric ton) for Crop Year 2016-17 (Extension Services-Visayas, 2018).

Domestic production of raw sugar for Crop Year 2015-16 had failed to 2.27 million metric tons as compared to the previous Crop Year 2016-17 with a total production of 2.50 million metric tons (the highest after 34 years). The decrease in the production was due mainly to "La Niña" (heavy rainfall) and the erratic weather condition (Ocampo, 2018).

Sa-onoy (2014) cited that mentioning the increase on productivity and improving of farm and mill efficiency is a sad fact. According to him, these are the pipe dream that had been the battle cry of the industry leaders, but they eluded the industry for years.

We have no new mill; the existing mills are already inefficient, and land devoted to sugarcane has been steadily declining since the passage of the Comprehensive Agrarian Reform law the expanding demand for living and business space. He further explained that in the year 1977, we produced three million tons of sugar but today we produced half a million or less. In that year, Negros had 15 sugar mills with 260,925 hectares of land planted with sugarcane.

Sa-onoy commented further that despite of the herculean efforts of the extension workers in extending and introducing to the farmers the modern technologies but still the targeted increase in the production could be hardly realize. There are so many factors that attributes to this.

Climatic factors that influence sugar yields are rainfall precipitation (greatly affects soil moisture), temperature range, light intensity, and duration, photoperiod and occurrence of typhoons or long drought. Likewise, for edaphic or soil factors are soil type, pH, and organic matter content Cerbo (2009).

Alulod and Cerbo (2009) concluded on their paper that the total area planted to varieties performing lower and higher than the mill districts average sugar per hectare (LKg/ha) production in Negros-Panay Islands for Crop Year 2004-05 was 86,251.25 and 137,705.46 hectares, respectively. They recommended that the agency and farmers association should rapidly propagate the new HYVs to replace those varieties not suited in a certain locality so that an increase in productivity per unit.

One of the most economical approaches towards increasing the yield per unit area is the planting of high yielding and diseases resistant varieties according to Bombio, 2009 and Velasco *et al.,* 2017.

On sugarcane, studies showed that use of high-yielding varieties give an average increase of 12 bags per hectare as One-Drive compared to planting of an ordinary (old) sugarcane variety, as cited by Landoy and Tapay (2009).

An increased of five percent (5%) in tonnage and seven percent (7%) in sugar production (LKg) was obtained when organic humus was added on top with the recommended rate of fertilizers. This was the result of farm demo conducted by Oñal (2006) in Bago City, Negros Occidental. Non-drying of cane leaves during long dry spills and plant vigourity was noted for the treated one. The demo aims to reduce cost of production and use of materials that are environmentally friendly, yet it can increase the farm productivity.

Around fifty percent (50%) of agricultural cost (direct cost) in sugarcane farming is being spend on fertilizers inputs. Thus, agency extension workers usually recommend for the gathering of soil samples for laboratory analysis that will be a guide to the farmers on their fertilizers management.

After a minimum profit levels are attain, other objectives can be pursue. The bottom line is that market-oriented farming requires a business approach to survive. The challenge face by the farmers in times of competition is how to increase profitability. Profit is important for commercial farming.

Girei and Giroh (2012), had mentioned on their study that in order to demand to the company in terms of high-quality cane supply and to generate sufficient funds for the out grower (accommodated) farmers, the issue on low cane yield should be addressed through provision of high yielding varieties (HYV), disease resistant, productive and pest/disease free farms.

Sulaiman and his company (2015) had recommended that to boost production and demand for the crop; there is a need for supplying of improved variety of the sugarcane sett (canepoints).

To keep the sugarcane industry sustainable, the government must eliminate the tariff on inputs to reduce the costs of production such as fertilizers regarding lower prices. The reason why the local sugar industry is in the state of disarray is that local sugar is price higher than imported sugar. This is due to the high cost of inputs. Lowering the domestic costs of production would make the price of local sugar competitive in the world market, this was the conclusion on the study conducted by Doloriel last 2014.

She further concluded that sugarcane farming is productive and profitable only for medium and large sized farms with the areas ranging from 10.01 hectares and above. This means that small sugarcane farming is not profitable.

Doloriel had further observed that first ratoon cropping in sugarcane production is the most productive and profitable. The Philippines Recommends for Sugarcane technically explained that first ratoon crops was consider as secondary tillers. Earlier flushes of tiller competition were desirable because it gave more uniform plants resulting to less tiller competition. Besides, secondary tillers were closer to the soil. Therefore, the roots could penetrate deeper to the soil and could absorb more nutrients compared to those of the preceding ratoons.

In contrast to drought, excess water during irrigation or heavy rain should be drain out. Cotching (2018) said that based on his experience in advising farmers on drainage systems over many years, farmers can achieve at least a 20% increase in crop growth and utilization if good drainage is install. His key observation is that reducing water logging can significantly boost the production.

Talking of income and size of area planted, the result of the study of Kumar and his company in India (2014) shows that small farm seems to be less efficient than large and medium farms. Hence, gross returns and cost of production of sugarcane (ratoon) crop showed direct relationship with the size of the farms. It was observe that total cost of production and gross returns both increases as the size of farm increase.

It was on that contention that the researcher had developed the purpose of the study, improved the productivity and assessed the extension services rendered by the government to farmers-client at the different Mill Districts in the Visayan area of the Philippines for the coming crop years.

1.2 Objectives

1.2.1 The general objective of the study is to determine the importance of the extent services in increasing the productivity of small farmers.

1.2.2 Specific objectives

1.2.2.a Extent of services to sugarcane farmers and level of productivity

1.2.2.b Extent of services to sugarcane farmers and farm profile

1.2.1.c. The productivity of sugarcane farmers in a specific location

1.2.1.d. Factors affecting the productivity of sugarcane farmers

1.2.1.e. The productivity and farm profile

1.3 statement of the problem

Sugarcane industry is one of the major dollar income industry in the Philippines. The productivity however and profitable only for medium and large sized farms with an areas of 10.01 hectares and above. This means that small sugarcane areas is not profitable which is 79% of the total national area of 424,199 hectares. This study aims to improve the level of productivity of sugarcane farmers and farm profile in the Visayas, Philippines

2.MATERIALS AND METHODS

2.1 Research Method

The descriptive correlational study was use in this study. It focuses in measuring the extent of services to sugarcane farmer's areas and level of productivity among others, to the different Mill Districts in the Visayan area of the Philippines.

2.2 Research Environment

The study was conducted at the 10 Mill Districts in the Visayas area. The Visayas area was composed of six provinces namely: Negros Occidental, Negros Oriental, Capiz, Iloilo, and Leyte.

Specifically the study covered the following Mill Districts, namely: San Carlos and Victorias for northern portion of Negros Occidental; La Carlota-Ma-ao and BISCOM for southern portion of Negros Occidental; Tolong and Bais-URSUMCo for Negros Oriental; Iloilo and Capiz for Island of Panay; Bogo-Medellin/Durano for Island of Cebu; and, for Island of Leyte its Ormoc-HIDECO Mill District.

2.3 Respondents

The respondents of the study were the sugarcane farmers at the Visayan area with 10 hectares and below.

Employing the *Slovins* formula, out of 29,151 sugarcane farmers from the 10 Mill Districts mentioned-above, the sample size of 400 farmers were randomly selected as the actual respondents of the study. The distribution of the respondents and the sample per Mill District is indicated on Table 1.

Table 1. Distribution of Respondents per Mill District

Location (mill district)	Number of farmers	Percentage
ILO - Iloilo Mill District	60	15.00
CAP - Capiz Mill District	30	8.00
BOG - Bogo-Medellin/Durano MD	20	5.00
ORM - Ormoc-HIDECO MD	20	5.00
TOL - Tolong Mill District	50	13.00
BAS - Bais-URSUMCO MD	70	18.00
BIS - BISCOM Mill District	55	14.00
LAC - La Carlota/Ma-ao MD	35	8.00
VIC - Victorias Mill District	35	8.00
SAC - San Carlos Mill District	25	6.00
Total	**400**	**100.00**

2.4 Research Instrument

The instrument used to gather data was the agency Extension Program Guidelines with eight parts. It include the measurement for the extent of services to farmers the farm profile and productivity among others.

2.5 Data Gathering Procedure

The researcher had personally administered the questionnaire to the respondents with the assistance of government Technical Personnel/Junior Agriculturist at the different Mill Districts in the Visayas. Upon retrieval of the accomplished research questionnaire, the researcher had tallied and analyzed the data using the Statistical Package for Social Sciences (SPSS) software under the closed supervision and guidance of the statistician.

2.6 Statistical Tool

In the analysis of data, the following statistical tools that were used in accordance with the nature of the specific problems raise and their corresponding hypotheses.

Frequency and percentage was use to describe the extent of services, profile of the sugarcane farmers' and of the farms.

The mean was used to determine the level of productivity. The mean was solved using the following procedures, the highest and lowest rating was determined first.

Then lowest score of one (1) was deducted from the highest rate of 5. The subtrahend was divided by five (5) which was adapted from Likert's rating. The addition of quotient started from the lowest rate and ended at highest rate. The numeral ranges and corresponding verbal description, 5.00 being the highest interpreted as "Very High" and 1.00 being the lowest interpreted as "Very Low".

One way Analysis of Variance (ANOVA) were used to determine the difference in the level of productivity, when respondents were grouped according to location of farm, average size of land holding, type of soil planted to sugarcane, topography of the area, average rainfall received and distance of farm to sugar mill.

Pearson r Moment Correlation was utilize to determine the significant relationship between of productivity, sugarcane farmers and farm profile.

2. RESULTS AND DISCUSSIONS

Profile of the extension workers

Tables 2 shows the profile of the agency personnel who are implementing the projects at the different Mill Districts in the Visayas in terms of gender, age, level of education, number of years of service in the agency and the area covered of their responsibilities.

Out of the eight extension workers during the Crop Year 2016-2017 were dominated by male (f=6, 75%).

Age were dominated by those who are 36-60 years old (f=6, 75%) followed by those who are 35 years old and below (f=1, 12.50%) and 61 years old and above (f=1, 12.50%)

As to the educational attainment they were dominated by college graduates (f=4, 50%), followed by those with master's degree or with units in masteral (f=3, 37.50%) and only 1 has a doctorate degree (f=1, 12.50%).

Majority of them had rendered service for 21 years and above (f=6, 75%) followed by 11-20 years of service (f=1, 12.50%) and 10 years and below (f=1, 12.50%).

In terms of area of coverage, seven out of the eight extension workers covered 4,000 hectares and above (f=7, 87.50%) and only one implementer covered 3,999 hectares and below (f=1, 12.50%).

The findings imply that the extension workers were mostly male, older, experienced, and covered a wider area of responsibilities. This result contrasts with the findings of Annis (2016), when women first began to enter a workforce previously dominated by men, business across the globe were forced to examine gender in the workplace. Through the decades that translated into many organizations seeking equality among male and female employees, using the premise that equal means "same." Not only did different employees have the same intrinsic worth, but their sameness extended to how they relate to and lead others, think through ideas, and define success.

Table 2. The frequency count on the Distribution of Extension Workers

Variables	Number of Extension Workers	Percentage
Gender		
Male	6	75.00
Female	2	25.00
Age		
35 years old and below	1	12.50
36 – 60 years old	6	75.00
61 years old and above	1	12.50
Educational Attainment		
College Graduate	4	50.00
Masters (or with units)	3	37.50
Doctoral	1	12.50
Length of Service		
10 years and below	1	12.50
11 – 20 years	1	12.50
21 years and above	6	75.00
Area of Coverage		
3,999 hectares and below	1	12.50
4,000 hectares and above	7	87.50

Profile of farmers

Table 3 revealed the farmers profile at the different Mill Districts in the Visayas in terms of gender, age, level of education and number of years in sugarcane farming, Crop Year 2016-2017.

The findings reveal that out of 400 farmers involved in the study, there were more male (f=229, 57%) than the female (f=171, 43%) as shown on Table 3.

Furthermore, the findings show that the majority of the farmers were either medium aged or old 36-60 years old (f=204, 51%), young farmers aged 35 years old and below (f=41, 10%) and those aged 61 years old and above labelled as old (f=155, 38%).

As to the educational attainment, majority of the farmers were high school level (f=225, 56%) and the least had the vocational attainment (f=2, .5%).

For the number of years in sugarcane farming, most of the farmers were considered as medium for 11 to 20 years (f=173, 43%), and few belonged to old as 20 years and above (f=93, 23%).

The findings on Table 3, implies that the farmers at the different mill districts in the Visayan area were majority male, aged 36-60 years old, high school level and have been in sugarcane farming for 11 to 20 years.

In connection with this finding, a study of Gallen (2015) which is using Danish matched employer-employee data, the paper estimates the relative productivity of men and women and finds that gender "productivity gap" is 8 percent implying that just under two thirds of the residual wage gap can be accounted for by productivity differences between men and women. The productivity gap was measured by estimating the efficiency units lost in a firm-level production function if a worker is female, holding other explanatory covariates such as age, education, experience, occupation, and hours worked constant. Furthermore, both mothers and non-mothers are paid less than men, but the (low) relative pay of mothers is completely explained by productivity for women without children.

Table 3. The Socio Distribution of the Farmers

Variables	Number of Farmers	Percentage
Gender		
Male	229	57.00
Female	171	43.00
Age		
Young (35 yrs old and below)	41	10.25
Medium (36 - 60 years old)	204	51.00
Old (61 yrs old and above)	155	38.75
Level of Education		
Elementary	87	21.75
High School	225	56.25
College	86	21.50
Vocational	2	00.50
Number of Years in Sugarcane Industry		
New (10 yrs and below)	134	33.50
Medium (11 - 20 years)	173	43.25
Old (21 yrs and above)	93	23.25
Total	**400**	**100.00**

Extent of services rendered to sugarcane farmers of the different Mill Districts in the Visayas

The data in table 4 shows mean analysis on the extent of services to sugarcane farmers in the different Mill Districts in the Visayas was at "moderate extent" (M=3.37). This means that the services of the agency extended to sugarcane farmers in the different Mill Districts in the Visayas was at average.

Specifically, the respondents have "moderate extent" rating on the extent of services to sugarcane farmers in the different Mill Districts in the Visayas in the following areas. Establishment of demonstration plots as show window to farmers (M=3.45). Conduct of regular consultations and/or field visits (M=3.42). Assist in the gathering of soil samples for analysis (upon request) (M=3.38). Monitor and gather data on production/ yield estimate at farm level regularly (M=3.35). Assist in the preparation of documents for SIDA Scholarship Project (M=3.35). Establishment / monitoring of block farms (M=3.34). Assist farmers in the computation of fertilizers to be applied based on the result of the soil analysis (M=3.32). Guide farmers in the application of lime for acidic soil (M=3.32). Advocate farmers to re-plant the missing hill to maximize production (M=3.32). Assist in the preparation of documents for SIDA farm-to-mill road project (M=3.31). Distribution of brochures and other reading materials (M=3.31). Conduct regular monitoring/ survey on the incident of pests and diseases (M=3.30). Conduct assessment of damage after the occurrence of natural calamities (M=3.30). Disseminate information on farm Mechanization (M=3.30). Disseminate information on socialized credit program under SIDA Law (M=3.29). Conduct of brix reading on the field during harvesting period (M=3.00).

Although respondents have "high extent" rating on the extent of services to sugarcane farmers in the different Mill Districts in the Visayas in the following areas. Encourage farmers to practice environmental friendly method of farming, non-burning of trash after harvest (M=3.62). Establishment of HYV Nursery and distribution of planting materials thereafter (M=3.60). Continuous advocacy on the use of organic fertilizers/inputs (M=3.60). Conduct of seminars and trainings on Sugarcane Farm Management including the preparation of farm plan and budget (M=3.57).

The findings of the study implied that the sugarcane farmers received an extensive and moderately useful services rendered at the different Mill Districts in the Visayas when sugarcane farmers' responses on the extent of services were grouped as to their gender, age, educational attainment, and the number of years in sugarcane farming.

In relation to the extension services, the agency funds its operations and projects/services to all stakeholders of the industry from their Corporate Budget (COB) and General Appropriations Acts (GAA) under the provisions of Sugar Industry Development Act of 2015 (SIDA 2015).

Table 4. Extent of Services Rendered by the government to Sugarcane Farmers in the Visayas

Extension Services	Mean	Description
1. Establishment of HYV Nursery and distribution of planting materials thereafter	3.60	High Extent
2. Conduct of seminars and trainings on Sugarcane Farm Management including the preparation of farm plan and budget	3.57	High Extent
3. Establishment of demonstration plots as show window to farmers	3.45	Moderate Extent
4. Conduct of regular consultations and/or field visits	3.42	Moderate Extent
5. Assist in the gathering of soil samples for analysis (upon request)	3.38	Moderate Extent
6. Monitor and gather data on production/ yield estimate at farm level regularly	3.35	Moderate Extent
7. Assist farmers in the computation of fertilizers to be applied based on the result of the soil analysis	3.32	Moderate Extent
8. Conduct regular monitoring/ survey on the incident of pests and diseases	3.30	Moderate Extent
9. Assist in the preparation of documents for SIDA farm-to-mill road project	3.31	Moderate Extent
10. Establishment / monitoring of block farms.	3.34	Moderate Extent
11. Assist in the preparation of documents for SIDA Scholarship Project	3.35	Moderate Extent
12. Guide farmers in the application of lime for acidic soil	3.32	Moderate Extent
13. Continuous advocacy on the use of organic fertilizers/inputs	3.60	High Extent
14. Encourage farmers to practice environmental friendly method of farming, non-burning of trash after harvest	3.62	High Extent
15. Advocate farmers to re-plant the missing hill to maximize production	3.32	Moderate Extent
16. Distribution of brochures and other reading materials	3.31	Moderate Extent
17. Conduct assessment of damage after the occurrence of natural calamities	3.30	Moderate Extent
18. Disseminate information on farm Mechanization	3.30	Moderate Extent
19. Disseminate information on socialized credit program under SIDA Law	3.29	Moderate Extent
20. Conduct of brix reading on the field during harvesting period	3.00	Moderate Extent
Total Mean	**3.37**	**Moderate Extent**

Difference on the extent of services of the government to sugarcane farmers of the different Mill Districts in the Visayas when grouped as to profile variables

Table 5 presents the difference on the extent of services of the agency to sugarcane farmers of the different Mill Districts in the Visayas when grouped as to profile variables in terms of sex and area of coverage using t-test for independent samples. It further revealed that there is a significant difference on the extent of services of the agency to sugarcane farmers of the different Mill Districts in the Visayas when grouped as to sex ($t=2.240$, $p=0.000<0.05$) and area of coverage ($t=2.143$, $p=0.000<0.05$).

This means that the extent of services of the agency to sugarcane farmers of the different Mill Districts in the Visayas when grouped as to sex and area of coverage vary.

The findings implied that the agency greatly extend their services and satisfactorily perform their duties to the fullest and maximized their resources for the benefit of the sugarcane farmers in the Visayas. However, mill districts in the Visayas do influence the level in the level of productivity and the extent of services.

Relatively, agricultural extension service is a system that uses educational processes to assist the farmers and their families for improving production practices and raising of incomes. It plays a significant role in promoting agricultural productivity, increasing food security, and improving rural livelihoods (Ghimire et al., 2014).

Table 5. t-test Result on the Difference in the extent of services of the government to sugarcane farmers in the different Mill Districts in the Visayas when they are grouped by sex and area of coverage

Profile	Mean	T	Sig	Description	Interpretation
Gender	3.37	2.240	.000	Reject Ho	Significant
Male	3.42				
Female	3.32				
Area of Coverage	3.37	2.143	.000	Reject Ho	Significant
3,999 hectares and below	3.40				
4,000 hectares and above	3.34				

In addition to Table 5, the data in Table 6 presents the difference on the extent of services of the agency to sugarcane farmers of the different Mill Districts in the Visayas when grouped as to profile variables in terms of age, educational attainment, and length of service using One-way ANOVA. It further revealed that there is a significant difference on the extent of services of the agency to sugarcane farmers of the different Mill Districts in the Visayas when grouped as to age ($F=3.008$, $p=0.000<0.05$), educational attainment ($F=3.109$, $p=0.000<0.05$), and length of service ($F=2.742$, $p=0.005<0.05$).

This means that the extent of services of the agency to sugarcane farmers of the different Mill Districts in the Visayas when grouped as to age, educational attainment, and length of service vary.

Study of Demiryurek (2014) indicates that the purpose of agricultural extension was view as a farmers training activity to increase productivity and thus the welfare of farmers by technology transfer in the past. Today, the concept of rural extension has a content aiming to facilitate information and experience sharing among farmers to develop their decision making and problem-solving skills with the help of extension workers.

Furthermore, the study of Haq (2013) which was to determine the factors influencing the benefit of extension services in terms of farm income and factors affecting the extension workers contact to farmers. The results showed that extension contact had a great impact on crop income. The result also indicates that many farmers did not receive any extension contact and the effect of extension contact had not increased the crop income compared to other factors such as the irrigation and chemical fertilizers. They concluded that agricultural extension is necessary to increase the income of farmers.

Dlamini and Worth (2016) recommended that extension is basically a communication, and communications have to do with information. ICTs are, therefore, ideal tools that extension can manipulate to enhance the process of handling and disseminating information to assist small farmers to improve productivity. ICTs can also ensure accurate and timely information delivery to target audience for proper decision-making. They concluded that agricultural extension should therefore be an integral tool of all industry players that provide extension services to address the issue of poor productivity among small sugarcane farmers.

Table 6. One-way ANOVA Test Result on the Difference on the extent of services of the agency to sugarcane farmers in the different Mill Districts in the Visayas when they are grouped by age, educational attainment, and length of service

Profile	Mean	F	Sig.	Decision
Age	3.44	3.008	0.000	Reject H_o
35 years old and below	3.40			
36 – 60 years old	3.42			
61 years old and above	3.46			
Educational Attainment	3.47	3.109	0.000	Reject H_o
College Graduate	3.48			
Masters (or with units)	3.47			
Doctoral	3.44			
Length of Service	3.45	2.742	0.005	Reject H_o
10 years and below	3.43			
11 – 20 years	4.47			
21 years and above	3.45			

Level of productivity of the sugarcane farms in the Visayas

Table 7 shows the level of productivity of sugarcane farms in the Visayas using the mean. The results revealed that in general, the level of productivity of sugarcane farms in the Visayas (M=3.20) was at "high".

Specifically, the level of productivity of sugarcane farms in the Visayas was "high" under cane tonnage production in the following areas: 64.01 tons and above (M=3.19), 59.01-64.00 tons (M=3.20), 59 tons (M=3.19), 54.00-58.99 tons (M=3.22), and 53.99 tons and below (M=3.15).

The level of productivity of sugarcane farms in the Visayas was "high" under sugar rendement in the following areas: 2.50 LKg/TC and above (M=3.24), 1.99-2.49 LKg/TC (M=3.20), 1.98 LKg/TC (M=3.21), 1.93-1.97 LKg/TC (M=3.22), and 1.92 LKg/TC and below (M=3.21).

Table 7. Mean result on the Productivity of sugarcane farms in the Visayas

Level of Productivity Indicators		Mean	Description
1. Cane Tonnage Production (tons/ha)			
64.01 tons and above	(>6+)	3.19	High
59.01 - 64.00 tons	(>5)	3.20	High
59.00 tons	(Visayas average)	3.19	High
54.00 - 58.99 tons	(<5)	3.22	High
53.99 tons and below	(<6)	3.15	High
2. Sugar Rendement (LKg/TC)			
2.50 LKg/TC and above	(>0.6+)	3.24	High
1.99 – 2.49 LKg/TC	(>0.5)	3.20	High
1.98 LKg/TC	(Visayas average)	3.21	High
1.93 – 1.97 LKg/TC	(<0.5)	3.22	High
1.92 LKg/TC and below	(<0.6)	3.21	High
Total		**3.20**	**High**

Difference on the Level of productivity of the sugarcane farms in the Visayas when grouped by Location

The data in Table 8 presents the difference in the level of productivity of sugarcane farms in the Visayas when grouped by location using One-way ANOVA. It further revealed that there is a significant difference in the level of productivity of sugarcane farms in the Visayas when grouped by location ($F=3.482$, $p=0.000<0.05$).

This means that the level of productivity of sugarcane farms in the Visayas when grouped by location are not comparable.

Table 8. One-way ANOVA Test Result on the Difference on the Level of Productivity of the sugarcane farms in the Visayas when grouped by Location

Location	Mean	F	Sig.	Decision
Mill Districts	**3.46**	3.482	0.000	Reject H_o
1. Iloilo	3.47			
2. Capiz	3.45			
3. Bogo-Medellin	3.46			
4. Ormoc-HIDECo	3.45			
5. Tolong	3.44			
6. Bais-URSUMCo	3.45			
7. BISCOM	3.46			
8. La Carlota/Ma-ao	3.48			
9. Victorias	3.47			
10. San Carlos	3.46			

Level of productivity on sugarcane farming of the different Mill Districts in the Visayas in terms of indicators

Table 9 shows the level of productivity of sugarcane farming in the different Mill Districts in the Visayas in terms of indicators such as size of farm, type of soil, land topography, average rainfall received, distance of the farm to the sugar mill, farming innovations, workers' availability and expenses per hectare using the mean. It further revealed that the level of productivity of sugarcane farming in the different Mill Districts in the Visayas (M=1.98) was at "low productivity". This means that the productivity of sugarcane farming in the different Mill Districts in the Visayas was below average.

Specifically, the level of productivity of sugarcane farming in the different Mill Districts in the Visayas was at "low productivity" when grouped as to the size of farm (M=1.95). Type of soil (M=1.95), land topography (M=1.95),

average rainfall received (M=1.95), distance of the farm to the sugar mill (M=1.95), farming innovations (M=2.11), workers' availability (M=2.01) and expenses per hectare (M=1.96).

Table 9. Mean result of the Productivity of Sugarcane Farming at the Different Mill Districts in the Visayas in terms of Indicators

Productivity Indicators	Mean	Description
Size of Farm	1.95	Low Productivity
Type of Soil	1.95	Low Productivity
Topography of the Land	1.95	Low Productivity
Average Rainfall Received	1.95	Low Productivity
Distance of the Farm to the Sugar Mill	1.95	Low Productivity
Farming Innovations	2.11	Low Productivity
Workers Availability	2.01	Low Productivity
Expenses per Hectare	1.96	Low Productivity
Total Mean	**1.98**	**Low Productivity**

Difference in the level of productivity of the sugarcane farmers (in tons/hectare) among the different mill districts when they are grouped according to indicators

Table 10 presents the difference on the level of productivity in the different mill districts in the Visayas for Crop Year 2016-2017 when they are group according to the size of farm. The type of soil, land topography, average rainfall received, distance of the farm to the sugar mill, farming innovations, workers' availability and expenses per hectare using One-way Analysis of Variance.

Results revealed that there is a significant difference in the level of productivity when grouped as to average size of the farm ($F=40.857$, $p=0.000<0.05$). The land topography ($F=7.784$, $p=0.000<0.05$), distance of the farm to the sugar mill ($F=18.293$, $p=0.000<0.05$), farming innovations ($F=12.194$, $p=0.000<0.05$), workers' availability ($F=6.921$, $p=0.000<0.05$), and expenses per hectare ($F=6.864$, $p=0.000<0.05$). Thus, the level of productivity in the different mill districts in the Visayas for Crop Year 2016-2017 when they are group according to the size of farm, land topography, distance of the farm to the sugar mill, farming innovations, workers' availability and expenses per hectare varies.

On the other hand, the results implied that there is a no significant difference in the level of productivity when grouped as to the soil type ($F=0.137$, $p=0.999>0.05$) and average rainfall received ($F=1.834$, $p=0.061>0.05$). Hence, the levels of productivity in the different mill districts in the Visayas for Crop Year 2016-2017 when they are group according to the type of soil and average rainfall received do not vary.

Table 10. ANOVA results in the Level of Productivity among the Different Mill Districts in terms of Indicators

Productivity Indicators	F	Sig	Description
Size of Farm	420.857	0.000	Reject Ho
Type of Soil	0.137	0.999	Accept Ho
Land Topography	7.748	0.000	Reject Ho
Average Rainfall Received	1.834	0.061	Accept Ho
Distance of the Farm to the Sugar Mill	18.293	0.000	Reject Ho
Farming Innovations	12.194	0.000	Reject Ho
Workers Availability	6.921	0.000	Reject Ho
Expenses per hectare	6.864	0.000	Reject Ho

Relationship between the extent of agency services and level of productivity

The data in Table 11, showed the relationship on the extent of agency services and the productivity in the different Mill District of Visayas using Pearson's r. It could be deduced from the data that there was no significant relationship on the extent of agency services and the level of productivity ($r=021$, $p=0.675>0.05$). Therefore, the extent of agency services rendered to the sugarcane farmers in the Visayas do not affect the level of productivity

In relation to findings of the study, activating the agricultural extension services system is of great importance. Jaiswal (2014) commented that there are enough viable and modern technologies that have been develop already but many o these have not reached to farmer level because of poor delivery of extension services. Moreover, farmers are not aware of the technology available hence, they could not properly adapt them.

The inefficient delivery of agricultural extension service limits the use of modern technology. The lack of technical know-how plus the limited financial resources were most of the problems by the farmers in adopting sustainable-modern agricultural practices.

Table 11. Correlation analysis between extent of agency services and level of productivity

Variables Compared	Pearson r	Sig	Description	Strength of Relationship
Extent of Services Productivity	0.021	0.675	Accept Ho	Very low

Relationship between the extent of services of the agency and farm profile

The data in Table 12, showed the relationship on the extent of agency services and farm profile in the different Mill District of Visayas using Pearson's r. It could be noted from the data that there was no significant relationship on the extent of agency services and the farm profile (r=0.109, p=0.713>0.05).

The findings implied that the performance of the agency services rendered to the sugarcane farmers do not significantly influence the farm profile such as the size of farm, type of soil, land topography, average rainfall received, distance of the farm to the sugar mill, farming innovations, workers' availability, and expenses per hectare.

In relation to findings of the study, Kaur of India (2018) had discussed on his study that public agricultural extension system is one of the largest knowledge and information dissemination institution. In the last 15 years, agricultural production has stagnated, and this calls for a system based on inter-disciplinary holistic approach not only to develop ecologically sound technologies for different areas, but also to facilitate their utilization at grass root level.

Table 12. Correlation analysis between the extent of agency services and farm profile

Variables Compared	Pearson r	Sig	Description	Strength of Relationship
Extent of Services Farm Profile	0.109	0.713	Accept Ho	Low

Relationship between the level of productivity and farm profile

The data in Table 13, showed the relationship on the level of productivity and farm profile in the different Mill District of Visayas using Pearson's r. It further revealed that there was no significant relationship on the level of productivity and the farm profile (r=0.097, p=0.756>0.05).

The findings implied that the level of productivity do not significantly influence the farm profile such as the size of farm, type of soil, land topography, average rainfall received, distance of the farm to the sugar mill, farming innovations, workers' availability and expenses per hectare.

In relation to findings of the study, Kaur of India (2018) had discussed on his study that public agricultural extension system is one of the largest knowledge and information dissemination institution. In the last 15 years, agricultural production has stagnated, and this calls for a system based on inter-disciplinary holistic approach not only to develop ecologically sound technologies for different areas, but also to facilitate their utilization at grass root level.

Table 13. Correlation analysis between the level of productivity and the farm profile

Variables Compared	Pearson r	Sig	Description	Strength of Relationship
Level of Productivity Farm Profile	0.097	0.756	Accept Ho	Very Low

CONCLUSIONS

1. There were 8 implementers and 400 farmers considered in the conduct of the study. Almost all of them are female, aging 36 years old and above. Majority of the implementers were male, college graduate, aging 36-60 years old and have been in service for more than 21 years with 4,000 hectares and above area of coverage.
2. On the other hand, most of the farmers were male, aging 36-60 years old and are high school graduate. These farmers have been in the sugarcane industry for 11-20 years.
3. The extent of services of the agency to sugarcane farmers in the different Mill Districts in the Visayas was at moderate extent.

4. A significant difference was observe on the extent of services of the agency to sugarcane farmers in the different Mill Districts in the Visayas when classified as to sex, area of coverage, age, educational attainment and length of service.
5. The level of productivity of sugarcane farms in the Visayas was high.
6. A significant difference was note on the level of productivity of sugarcane farms in the Visayas when grouped as to location.
7. The level of productivity of sugarcane farming in the different Mill Districts in the Visayas in terms of indicators such as size of farm, type of soil, land topography, average rainfall received, distance of the farm to the sugar mill, farming innovations, workers' availability and expenses per hectare was at low productivity.
8. There is no significant difference on the productivity of sugarcane farming in the different Mill Districts in the Visayas in terms of indicators; such as type of soil, and average rainfall received. Though, there is a significant difference in the productivity of sugarcane farming in the different Mill Districts in the Visayas in terms of indicators such as size of farm, land topography, distance of the farm to the sugar mill, farming innovations, workers' availability, and expenses per hectare.
9. The extent of agency services was not significantly related to the productivity. There is no significant relationship existed between the extent of agency services and farm profile. Farm profile does not influence also the level of productivity.

RECOMMENDATIONS

1. The Department of Agriculture assigned to look into sugarcane productivity in the region should look into the farmers' profile for a better delivery of services.
2. The extension personnel must regularly monitor its farmers-client to regularly monitor their production as well as cater their needs.
3. The sugarcane farmers should also be responsible of reporting some instances that would probably hinder the better yield and production of sugarcane in the region.
4. The Local Government Unit must also help the sugarcane farmers by catering their needs and provide helpful benefits to them.
5. The association/cooperatives of sugarcane planters may come up with long-term plans that would help farmers increase productivity.
6. Government researchers must come up with research regarding sugar production as well as determining the factors affecting production.
7. The farmer's association/cooperatives and the extension personnel must work hand in hand to further improve the delivery of agency services and increase the levels of production in all its aspects.
8. Interested researchers in the field of specialization may investigate other variables not found in the study to improve the production of sugarcane in the region.

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REFERENCES

1. Alulod, S. A. and Cerbo, B.P. (2009). Productivity level of sugarcane varieties in different mill districts in Negros-Panay Islands. The Sugarlink 4-006: pp. 10-15.
2. Cerbo, P. (2009). The impact of the outreach program for the Sugar Industry (OPSI) on Sugar Production and Income of Agrarian Reform Beneficiaries (ARB). Terminal Report. LGAREC, Sugar Regulatory Administration, La Carlota City, Negros Occidental, Philippines. (Up-dated edition).
3. Crisostomo, S. (2018). Labor group hits budget chief. The Philippine Star News, June 2, 2018 issue, Manila, Philippines. feedback@philstarmedia.com. p. 2.
4. Deliberto, M. A., Hilbun, B. M. and Salassi, M. E. (2017). 2017 projected sugarcane production farm costs and returns model: A farm planning/decision tools for louisiana sugarcane growers. Louisiana State University Agricultural Center. Baton Rouge, Louisiana, Staff Report No. 2017-02. January 2017. 12 pp. Retrieved on March 28, 2018 from http://www.Isuagcenter.com/en/crops _livestock/crops/sugarcane/econ
5. Demiryurek, K. (2014). Extension and advisory concepts and their philosophy. Ondokuz Mayis University, Samsun, Turkey. pp 19-30.
6. Dlamini M. M. and Worth, S. T. (2016). Agricultural extension in the facilitation of improved sugarcane productivity among small-scale growers in Swaziland: A SWOT analysis. *Asian Journal of Agricultural Extension, Economics and Sociology*. Art. DOI: 10.9734/AJAEES/2016/27094, ISSN: 2320-7027.
7. Doloriel, N. S. (2014). Productivity and profitability of sugarcane farming. Surigao del Sur State University – Tagbina Campus, Philippines. *SDSSU Multidisciplinary Research Journal Vol. 2, No. 2*, July-December 2014. Ndoloriel2009@gmail.com. pp. 95-100.
8. Etten, J. V. (2016). First experiences with a farmer citizen approach: Crowdsourcing participatory variety selection through on-farm Triadic Comparisons of Technologies (Tricot). *Experimental Agriculture Journal*. Retrieved on March 29, 2018 from https://doi.org/10.1017/S0014479716000739. pp. 1-22.

9. Gallen, Y. (2015). The gender productivity gap. 2015-20-28 T 10:36 UTC. Published October 2015. Retrieved on June 3, 2018 from https://www.researchgate.net/publication/283287946_TheGender_Productivity_Gap. pp. 3.
10. Ghimire, N., Koundinya, V and Hols-Clause, M. (2014). Government run vs University managed agricultural extension: A review of Nepal, India and the United States. *Asian Journal of Agricultural Extension, Economics and Sociology*. Retrieved on March 27, 2018 from http://creativecommons.org/ license/by/3.0.
11. Gui-Diby, S. L., Pasali, S. S. and Wong, D. R. (2017). What's gender got to do with firm productivity? Evidence from Firm Level Data in Asia. Macroeconomics Policy and Financing for Development Division. United Nations Economic and Social Commission for Asia and the Pacific. JEL Classification: J16, L25, L26.
12. Haq, A. M. (2013). The impact of agricultural extension contact on crop income in Bangladesh. Bangladesh J. Agril. Res. 38(2): ISSN 0258-7122. June 2013. Department of Business Administration, City University, Banani, Dhaka 1213, Bangladesh. zafarhaq34@gmail.com. pp. 321-334. Retrieved June 8, 2018.
13. Jaiswal, P. and Tiwari, R. (2014). Technological knowledge and adoption behavior of sugarcane growers of Surguja District, Chattisgarh, Southeast Central India. *Indian Journal of Applied Research*, Issue No.4, February 2014, Vol. 4.
14. Kaur, K. and Kaur, P. (2018). Agricultural extension approached to enhance the knowledge of farmers. Int. J. Curr. Microbiology. Sci. 7(02): 2367-2376. Doi: https//doi.org/10.20546/ijemas. 2018.702.289. Retrieved March 27, 2018.
15. Lamin, A. (2014). Evaluation extension programs agricultural education and communication dept., UF/IFAS Extension. Original publication date May 2011. Retrieved on April 21, 2014 from http://edis.ifas.ufl.edu.
16. Mandalios, Z. (2014). The importance of agricultural extension officers. Ca-Global Publication Africa Recruitment, Africa. Retrieved on March 27, 2018 from http://caglobalint.com/recruitmentafrica/blog/2014/07/17/the-importance-of-agricultural-extension-officers/.
17. Oñal, P. A. (2005). Technology update - Liming increases sugar yield, SRA-Bacolod City, Negros Occidental. Philippines. The Sugarlink, January-March 2005 issue, Vol. 3-005, p. 8. (Citation only).
18. Oñal, P. A. (2006). Benefits of using humus. SRA-Bacolod City, Negros Occidental, Philippines. The Sugarlink, July-December 2006 issue, Vol. 4-006, p. 5. (Citation only).
19. Oñal, P. A. (2015). Extension services of sugar regulatory administration extension and technical services division to farmers at mill district of Ma-ao. Masteral Thesis (Master in Public Administration). The Graduate School, Eulogio "Amang" Rodriguez Institute of Science and Technology (EARIST), Nagtahan, Sampaloc, Manila, Philippines. pp. 148.
20. Sa-onoy, M. P. (2014). Tight rope: No reserves? The Visayan Daily Stars, Bacolod City, Negros Occidental, Philippines, August 28, 2014, p. 4.
21. Sugar Regulatory Administration (2018). Disaster risk reduction and management
22. plan for the sugarcane industry (2017-2022). Quezon City, Philippines. pp. 122.
23. Sugar Regulatory Administration (2015). Sugarcane roadmap 2020 (CY 2014-2015
24. to CY 2019-2020 version). "A Medium-Term Plan for the Philippine Sugarcane Industry". Quezon City, Philippines. pp. 329.
25. Sugar Regulatory Administration (2010). Sugarcane industry roadmap (2011-2016).
26. The Executive Summary. Quezon City, Philippines. http://www.sra.gov.ph. Retrieved May 12, 2014.
27. Sugar Regulatory Administration (2016). Extension services division annual report.
28. Bacolod City, Negros Occidental, Philippines.
29. Velasco, J. C. (2017). Comparative performance of Phil 2008 Series Sugarcane
30. Varieties. A paper presented during the 64th Philippine Sugar Technologist (PHILSUTECH) National Convention, Waterfront Hotel, Cebu City, Philippines.

Curriculum Vitae

Name PAULINO A. OÑAL, JR.

Address Lot 23, Blk 53
Regent Pearl Homes Subdivision
Brgy. Alijis, Bacolod City, 6100
Negros Occidental, Philippines

Mobile +(63) 927 250 3748

Date of Birth January 12, 1960

Sex Male

Religion Roman Catholic

Status Married

Email docpaulonal011260@gmail.com

Education

Secondary Negros Occidental High School
Bacolod City, Negros Occidental, Philippines -1979
(Honor Received: 8th Honorable Mention)

College University of Negros Occidental-
Recoletos, Bacolod City, Philippines -1983
(Honor Received: Academic Proficiency)
Bachelor of Science in Agriculture (Agronomy)

Thesis: ***Complimentary Effect of Organic and Inorganic Fertilizers on the Growth and Yield of Gossypium hirsutum, Linn. Under Bacolod Conditions.*** *(Negros Occidental, Philippines)*

Post Graduate West Visayas State University,
Iloilo, Philippines - 1985
Masters of Agriculture (12 units)

Eulogio "Amang" Rodriguez Institute of
Science and Technology (EARIST), Philippines - 2015
Master in Public Administration

Thesis: ***Extension Services of Sugar Regulatory Administration, Extension and Technical Services Division to Farmers at the Mill District of Ma-ao.*** *(Bago City, Negros Occidental, Philippines)*
Ifugao State University
Ifugao, Philippines - 2020
Doctor of Philosophy in Management

Dissertation: ***Level of Productivity of Sugarcane Farmers and Farm Profile in the Visayas, Philippines.***

Publication/International Conferences

Member of Editorial Board: ***The Sugarlink*** (official publication of Agricultural Extension of SRA, Visayas) distributed nationwide from 2004 to 2011. Published every quarter with an average of 3,000 copies per quarter.

Betelnut Digest: An International Forum (virtual)
May 15-16 and May 29-30, 2021, Ifugao State University, Lamut, Ifugao, Philippines
Paper: ***"Extension Services of Sugar Regulatory Administration and Level of Productivity of Sugarcane Farmers in the Visayas, Philippines: Basis for Intervention Program"***

Book Publish: ***Sugarcane Farm Profiles and Productivity in the Visayas, Philippines (2021)***

License

License Agriculturist (Philippines)
Major: Agronomy

TESDA Accredited Competency Assessor (Philippines)
Qualification: Sugarcane Production NCII

Affiliation

Regular Member: Philippine Extension and Advisory Services Network, Inc. (PhilEASNet)

Work Experiences

First Farmers Human Development Foundation, Inc.
Talisay City, Negros Occidental, Philippines
September 1986 – September 1987
Human Development Officer

Sugar Regulatory Administration
Araneta Street, Bacolod City, Negros Occidental, Philippines
December 1, 1987 – June 30, 2021
Senior Agriculturist

Technical Education and Skills Development Authority ((TESDA)
Talisay City, Negros Occidental, Philippines
July 13, 2021 – to present
Competency Assessor