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IMPACT OF THE COVID-19 PANDEMIC ON ABACA FARM HOUSEHOLDS: A CROSS-SECTIONAL SURVEY

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Abstract

This research study examined the impact of the COVID-19 pandemic on abaca farming, a fiber crop in the Philippines. To accomplish the study's aims, both descriptive analysis and mean comparisons by paired t-test were performed. Based on the results, abaca farmers have seen a decrease in their farm incomes as transportation expenses and agricultural input prices have risen. To cope with the pandemic, various coping techniques such as borrowing money, selling of assets, and usage of savings are being practiced. To help revive the agricultural portion of the abaca industry, loans exclusive for abaca growers must be made accessible.

Key words**:** *Covid-19, abaca farming, fiber crop*

INTRODUCTION

The coronavirus disease or COVID-19, which is caused by severe acute respiratory syndrome coronavirus 2 or SARS-CoV-2 [10], has brought disruptions all over the world specifically in various sectors of the economy [3]. The agricultural sector across the provinces in the Philippines is not exempted from the pandemic's unfavorable effects during the appearance of COVID-19 virus [4]. The government imposed lockdowns, community quarantines, and curfews to prevent the coronavirus disease from spreading, and health measures were implemented [5].

These various announcements have corresponding consequences on the agricultural sectors that had a negative impact on the incomes of farmers [8]. As a result, appropriate responses at all levels to support them in the aftermath of the crisis is essential. This study was conceptualized to assess the impact of the COVID-19 pandemic mainly on abaca farming, a fiber crop in the Philippines. Abaca is native to the Philippines and is considered the "strongest natural fiber in the world" by the Philippine Department of Science and Technology and the Philippine Fiber Industry Development Authority [6]. Abaca is a herbaceous plant, originally from the Philippines, whose fibre has a high content of lignin and cellulose that provide a big resistance to traction, putrefaction, abrasion, and UV rays and salt water degradation [7] Abaca has a variety of uses [1], it is used for specialty papers such as currency notes, tea and coffee bags, vacuum bags, cigarette filter paper, sausage casing paper, and high-quality writing paper. It is also used to make twines, ropes, fishing lines, and nets. Abaca has a high potential to substitute glass fibers in multiple automotive parts.

This study was designed to collect evidence as a prerequisite for policy response considerations so that abaca farmers can recover their agricultural income and lessen their vulnerabilities. This research study's primary beneficiaries include abaca growers, government agencies, and researchers.

MATERIALS AND METHODS

The data for this study was collected from the abaca farmers in Baybay City, Leyte, Philippines, at Amguhan and Villa Mag-aso, two of the abaca farming areas in Baybay City (Map 1).

Data Collection

Primary data was collected in November and December 2021 through the use of pretested

survey questionnaire. Proper health protocols such as wearing masks and physical distancing were observed during the face-to-face interview to prevent the spread of the Covid-19 virus. The literature review was also made in the collection of data.

Map 1. Map of the study sites
Source: [2].

Data Analysis

To answer the objectives of this study, statistical methods such as descriptive analysis (e.g. means and frequency counts) and comparison of means by paired t-test were used. Statistical Packages for Social Sciences (SPSS) v. 21 was used to analyze the data. Microsoft excel was also utilized to facilitate the construction of graphs and charts.

RESULTS AND DISCUSSIONS

Abaca farmer respondents are on average 47 years old. Males make up the majority (55.6%), and more than three-quarters (3/4) of the respondents are married (Table 1). With seven (7) years of formal education, roughly half of them have completed elementary school. A family's average number of members is four (4), the size of a typical Filipino family.

Almost all of the farmer respondents (92.6%) considered abaca farming as their primary source of living (Fig. 1).

About 41% of them looked for alternative sources of income to supplement their family's daily necessities (e.g. food, clothing, medication, and education), such as starting a business, working as a service worker, working in labor and production, and working as health workers in their local *barangay*, native Filipino term for a village [9].

Table 1. Profile of the abaca farmer respondents

Profile	Category	Percentage
Sex	Female	44.4
	Male	55.6
	Total	*100*
Age (in years)	20 to 29	7.4
	30 to 39	29.6
	40 to 49	29.6
	50 to 59	7.4
	60 to 69	18.5
	70 and above	7.4
	Total	*100*
Civil status	Single	3.7
	Married	88.9
	Separated/Divorced	3.7
	Live-in	3.7
	Total	*100*
Educational attainment	Elementary level	18.5
	Elementary Graduate	25.9
	High School level	33.3
	High school Graduate	22.2
	Total	*100*
Household size	0 to 2	11.1
	3 to 5	59.2
	6 to 8	25.9
	9 and above	3.7
	Total	*100*
Number of children	0 to 2	25.9
	3 to 5	44.4
	6 to 8	14.8
	9 and above	14.8
	Total	*100*

Source: Author's calculation and analysis (2022).

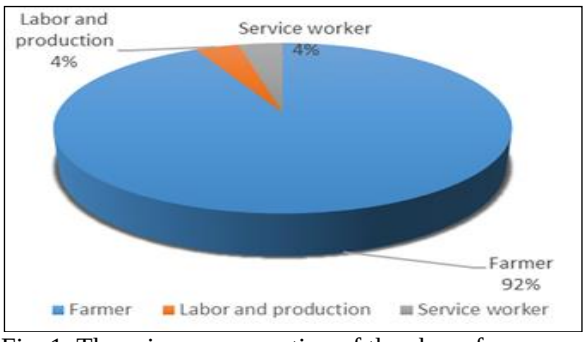

Fig. 1. The primary occupation of the abaca farmer respondents
Source: Author's calculation and analysis (2022).

Abaca farmers with more than 12 years of experience make up nearly half of the respondents (Table 2).
However, the average number of years spent in farming abaca is 15, and the average area of an abaca plantation is 1.7 hectares (17,000 sq. m.).
The majority of the abaca farmer respondents are the sole owners of the farms they are cultivating and there are about 44% of them who planted less than 100 abaca plants only.

Table 2. Abaca farming-related characteristics

Abaca farming-related characteristics	Category	Percentage
Years in abaca farming	0 to 2 years	14.8
	3 to 5 years	11.1
	6 to 8 years	11.1
	9 to 11 years	11.1
	12 years above	51.8
	Total	*100*
Size of abaca farm (in ha)	< 1 ha	33.33
	1 to 2 ha	44.44
	3 to 4 ha	14.81
	5 to 6 ha	3.7
	> 6 ha	3.7
	Total	*100*
Ownership of farm	Individual	59.3
	Partnership	11.1
	Communal	11.1
	Tenant	18.5
	Total	*100*
Number of abaca planted	< 100 plants	44.44
	100 to 200 plants	18.52
	300 to 400 plants	18.52
	500 to 600 plants	14.81
	> 600 plants	3.7
	Total	*100*

Source: Author's own calculation and analysis (2022).

Many farmers, particularly abaca growers, are experiencing changes in terms of revenue and costs in their farming activities as a result of the Covid-19 pandemic (Fig. 2). Approximately 44% of abaca farmers have reported that their farming capital has dropped while agricultural costs have also risen (55.5%) as the cost of farming inputs has risen dramatically. This has resulted in a decrease in family income (51.9%) and increased in household spending (59.3%).

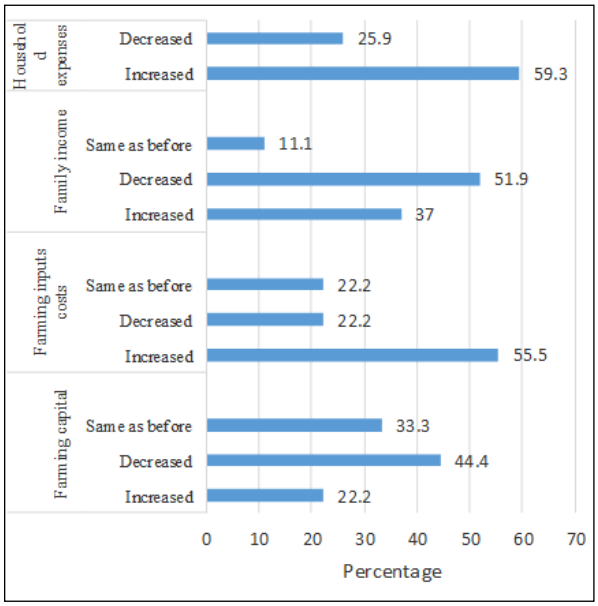

Fig. 2. Impact of Covid-19 on abaca farming
Source: Author's calculation and analysis (2022).

In Fig. 3, the majority of people have issues with accessing inputs (59.2%) primarily because of border restrictions, but they have no issues with labor availability (74.1%) since most of the abaca farmer respondents do not hire laborers.

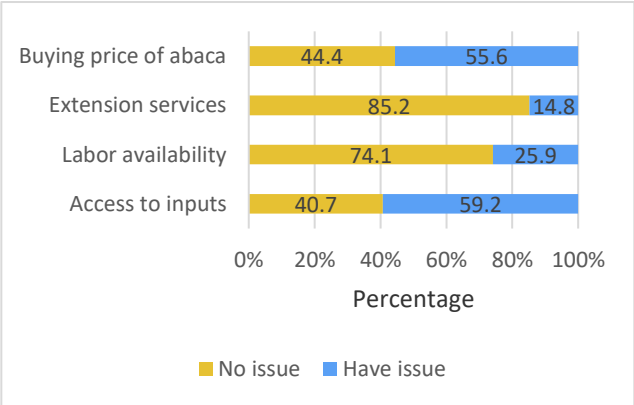

Fig. 3. Challenges in agricultural inputs
Source: Author's calculation and analysis (2022).

They also don't have any problems with access to extension services (85.2 %) since it is available through the internet. On the other hand, many people have complained about difficulties in obtaining abaca fiber at a reasonable price (55.6 %) since its prices varies from time to time.

As displayed in Table 3, there are changes in the costs of transportation due to the pandemic making even higher (70.4%) with *habal-habal* as the most used mode of transport (48.1%) in bringing the fiber crop to the buyer. Most of the abaca farmers preferred traders as their primary source of the marketing outlet (77.8%) since they usually can borrow money from them whenever they needed it.

Table 3. Marketing related variables in abaca

Marketing related variables	Category	Percentage
Increase in transport costs?	None	29.6
	Yes	70.4
	Total	*100*
Primary outlet	Traders	77.8
	Buying Station	22.2
	Total	*100*
Reason for market choice	High buying price	40.7
	Regular buyer	51.8
	Lots of buyer within barangay	7.4
	Total	*100*
Mode of transport	Truck	11.1
	Tricycle	11.1
	Habal-habal	48.1
	Hand carry/walking	29.6
	Total	*100*

Source: Author's own calculation and analysis (2022).

During the pandemic, various coping mechanisms are being employed (Fig. 4). In managing their household expenses almost half of the farmer respondents sell their assets (44.4%) while only a few make use of their savings (33.3%) and pursued credit (22.2%). When borrowing money is being practiced, usually, they go to their family and friends (59.2%) were without or low-interest rates are being charged to the borrowers with no collaterals are being required.

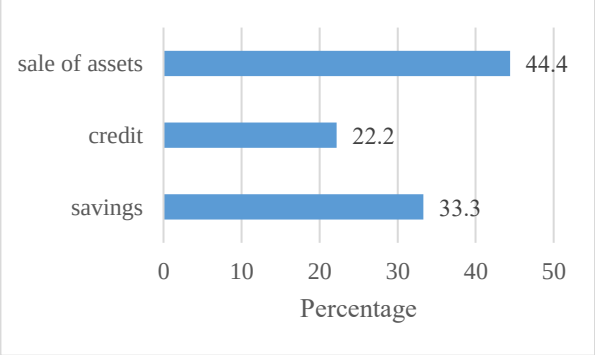

Fig. 4. Coping mechanisms of the abaca farmer respondents during the pandemic
Source: Author's calculation and analysis (2022).

Figure 5 shows that the majority have received cash assistance from the government (70.4%) and non-cash assistance (63%). Many respondents haven't received cash (81.5%) and non-cash (85.2%) assistance from non-government organizations.

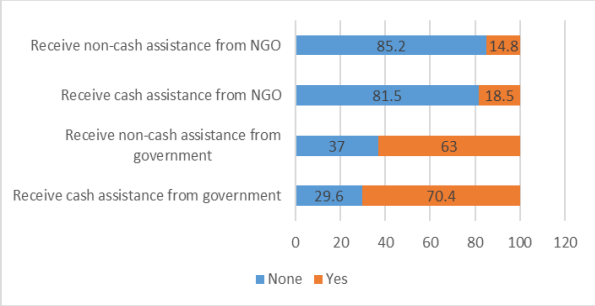

Fig. 5. Cash and non-cash assistance received by the abaca farmer respondents
Source: Author's calculation and analysis (2022).

Abaca farming capital was higher prior to the Covid-19 outbreak, but there isn't enough data to verify its statistical significance (Table 4). Farm revenue is marginally greater during the pandemic due to volatile agricultural buying prices, particularly for the abaca fiber crop. With this, the buying price of abaca fiber is significantly higher, at 1%. Due to establishment closures during the epidemic as a result of strict controls being implemented, non-farm income was lesser during the Covid-19 pandemic. In addition, job losses have forced people to stop sending money to their family, which has resulted in a drop in remittances.

Table 4. Results of mean comparison by paired t-test

Variables	Mean (before pandemic)	Mean (during pandemic)	Mean difference	SE	t	p-value
Capital	6,723.53	4,817.65	1,905.88	1,800.87	1.058	0.306
Farm income	10,079.17	10,504.17	425	1,577.64	-0.27	0.79
Non-farm	11,385.71	9,900	1,485.71	2,121.93	0.7	0.51
Remittances	5,664.29	3,342.86	2,321.43	1,342.26	1.729	0.10
Buying price	40.1053	57.7368	17.63	4.40	-4.01	.001***

Note: *** significant at 1%,
Source: Author's own calculation and analysis (2022).

CONCLUSIONS

The abaca farmer respondents sought extra sources of income to meet their daily household needs. As a result of the pandemic, agricultural input prices and transportation costs have all risen, resulting in lower farming incomes. Farmers have also been hampered by the general increase in the prices of other commodities, which resulted in higher family spending. Due to this, the government must keep a close eye on the rising prices of a variety of goods. Access to farming inputs is a big challenge in abaca farming during the pandemic because of border restrictions. To address this problem, the local government will need to pass new border limitations exemptions, which might include the purchase of agricultural inputs. As one of the coping mechanisms, most of the abaca farmers borrowed money from their relatives and friends during the pandemic. With this, low-interest loans must be made available for abaca farmers to revitalize the abaca agricultural industry.

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