

ASSESSMENT OF ABACA FIBER PRODUCTION IN EASTERN VISAYAS PROVINCES, PHILIPPINES

Mary Cris F. PLEÑOS

National Abaca Research Center, Visayas State University, Visca, Baybay City, Leyte, 6521
Philippines, Phone: +639285861863; E-mail: mc.plenos@vsu.edu.ph

Corresponding author: mc.plenos@vsu.edu.ph

Abstract

This paper examines the production of abaca fiber in the Eastern Visayas region. The buying prices of abaca fiber and the agricultural land area planted with abaca were also assessed. The goal of this study is to identify abaca production gaps and develop policies to improve the abaca sector in the region. According to the findings, abaca fiber production varies across Eastern Visayas provinces starting from 2010 to 2020. Natural disasters like typhoons and the bunchy top virus damaged the abaca fiber production. The agricultural land area cultivated with abaca is decreasing with time and there has been a considerable difference in the buying price of abaca fiber across the provinces. With this, the local government units must conduct proper monitoring on the buying prices of abaca fiber, improved extension services must be made available, provision of incentives and partnerships must be strengthened to enhance the quantity of abaca fiber production in the region.

Key words: abaca, fiber, Eastern Visayas, assessment

INTRODUCTION

The Philippine abaca industry was a key player in the global abaca market. The Philippines supplies 80 percent of the world's abaca need [8]. It has become a source of employment for more than 1.5 million Filipinos who rely on it for a living, either directly or indirectly [4]. Although there is a growing demand for abaca on the worldwide market, current productivity levels are insufficient to supply this need. The demand-supply gap in 2019 is 25,000 metric tons [11]. The low productivity of abaca is attributed to several reasons. First, with abaca as an agricultural crop, it is subject to weather conditions and since the Philippines is located in the typhoon belt, it is visited by an average of 20 typhoons every year, five of which are destructive [1]. Another threat is the abaca bunchy top virus or ABTV, which has significantly wiped out the abaca plantation [6].

Eastern Visayas produces 33.15 percent of the country's abaca [2]. As the Philippines' second-largest abaca producer [9], it is important to evaluate the status of abaca production in the provinces of Eastern

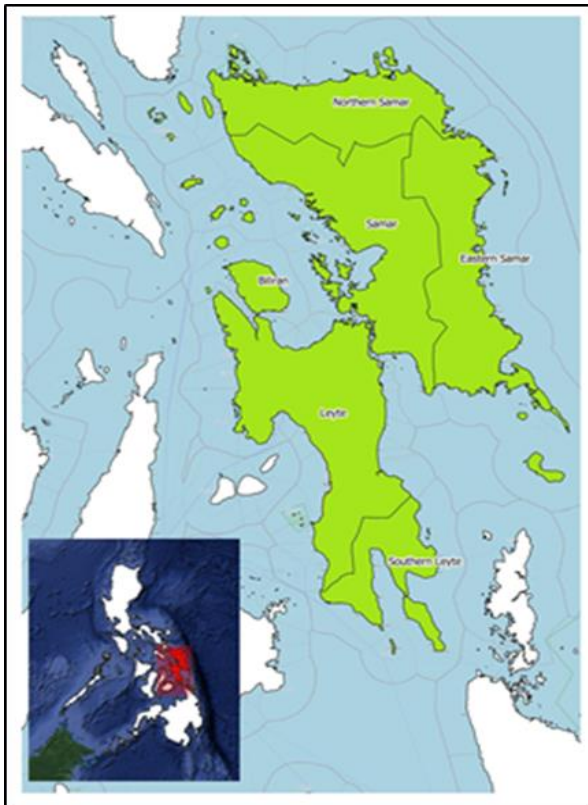
Visayas. This assessment would go back several years, as studying the abaca industry's past performance helps plan for future investment in abaca. The gaps along the years will be investigated, providing enough information for policymakers to formulate strategies to strengthen the abaca sector in Eastern Visayas. Generally, the objective of this study is to assess the status of the abaca industry in the provinces of Eastern Visayas starting from 2010 to 2020. Specifically, this study aims to examine the buying prices of abaca fiber, the area planted, and the production quantity of fiber across the provinces in Eastern Visayas; and to provide policies for the improvement of the abaca industry in Eastern Visayas. On the researcher's side, this will add to the growing literature about abaca. The private sectors, government agencies, future investors on abaca, and researchers are the target beneficiaries of this research study.

MATERIALS AND METHODS

The Study sites

Eastern Visayas, or Region VIII, is made up of three major islands: Samar, Leyte, and

Biliran. It is located in the Philippine archipelago's east-central region. The six provinces of Eastern Visayas are Biliran, Leyte, Southern Leyte, Eastern Samar, Western Samar, and Northern Samar (Map 1). It covers 2,156,285 hectares, accounting for 7.2 percent of the country's total land area [12].



Map 1. Eastern Visayas Region
 Source: [5].

The data

The data being used in this study was taken from Philippine Statistics Authority, or PSA [10]. The above mentioned government agency provided data on abaca production (in metric tons) in the six provinces of Eastern Visayas and other related variables (e.g. prices and land area). The data was collected during a ten-year period, starting from 2010 until 2020. A literature review was also made in the collection of data.

Statistical Analysis

To facilitate the data analysis of this study, descriptive analysis such as means, variances, standard deviation, minimum and maximum values was computed describing the status of abaca fiber production in the provinces of the

Eastern Visayas Region. Statistical Packages for Social Sciences (SPSS) was used to analyze the data. Microsoft Excel facilitates the construction of graphs.

RESULTS AND DISCUSSIONS

By mean values, the year 2010 produced the most abaca fiber in the Eastern Visayas region, totaling 1,012.57 metric tons (see Table 1). As indicated in Table 1, abaca fiber output in the Eastern Visayas began to decline until 2015, when the abaca bunchy top virus disrupted the abaca plants, causing them to die. Several farmers incurred losses on their farms and had to cope with the loss of income. In addition to the threat of the virus, the region was also threatened by the catastrophic typhoon Yolanda, internationally known as "Haiyan" [7], which damaged numerous provinces in the Eastern Visayas region including the abaca plantation that resulted in a considerable decrease in abaca fiber production with only 638.97 MT and 631.49 MT of abaca fiber in 2014 and 2015. Abaca production began to climb again in 2016 when farmers began replanting abaca with the encouragements from the agriculture sector in local government units. Planting materials were provided and virus-fighting training sessions were done to fight the devastating effect of the virus.

Table 1. Descriptive analysis of abaca fiber production in metric tons (2010-2020)

Year	Mean	Variance	Std. Dev	Min	Max
2010	1,012.57	541,737.43	736.03	63.47	2,455.36
2011	994.82	602,142.93	775.98	64.19	2,198.45
2012	954.60	565,655.18	752.10	66.55	2,120.00
2013	825.80	539,920.20	734.79	44.10	2,081.24
2014	638.97	479,240.45	692.27	40.20	2,154.08
2015	631.49	483,301.14	695.20	3.72	2,160.00
2016	960.06	1,761,025.10	1,327.03	3.62	7,241.25
2017	911.86	1,510,541.93	1,229.04	0.66	7,234.90
2018	905.48	1,479,703.77	1,216.43	2.40	7,149.15
2019	911.45	1,486,061.35	1,219.04	2.00	7,150.65
2020	877.13	1,440,177.1	1,200.07	.77	6,974.25

Source: [10].

Leyte has the highest abaca fiber production among the provinces in the Eastern Visayas region in 2010 and 2011, whereas Northern Samar produced the most abaca fiber starting from 2012 to 2020 (Fig. 1). Abaca fiber

production has been declining in Southern Leyte, although it has increased slightly from 2017 until 2020. On the other hand, Eastern Samar, Samar, and Biliran produced the least amount of abaca fiber throughout the ten-year period.

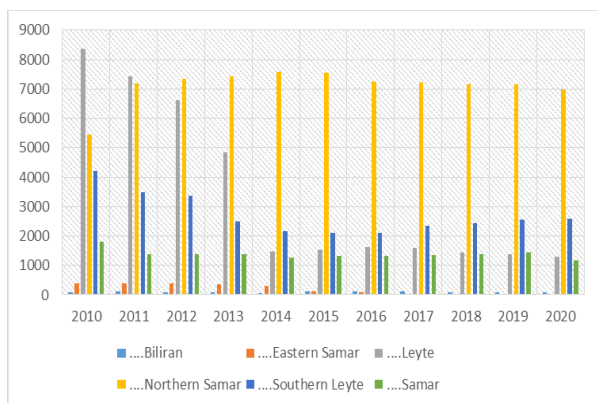


Fig. 1. Abaca fiber production among provinces in Eastern Visayas provinces (2010-2020).

Source: [10].

As seen in Fig. 2, from 2018 to 2020, farm gate prices in Eastern Visayas provinces fluctuate. The average farm-gate price of abaca fiber in Southern Leyte in 2020 was PHP 76.02 (USD 1.48) per kilogram, the highest buying price in three years. Biliran is consistent with the lowest buying farm gate price reaching an average of PHP 51.76 (PHP 1.01) per kilogram. Other provinces in Eastern Visayas, such as Leyte and Northern Samar, charge around PHP 60 (USD 1.17) per kilogram, on average. For Samar's farm gate price, there has been a significant dropped in price from PHP 63.69 (USD 1.24) in 2018 to PHP 58.48 (USD 1.14) in 2019 and in 2020 it was PHP 58.48 (USD 1.14).

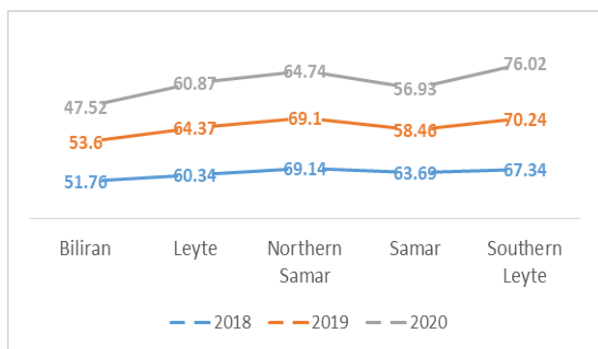


Fig. 2. Mean values of farm gate prices of abaca fiber (2018-2020)

Source: [10].

In 2010, Leyte had the largest agricultural area planted with abaca, though this has been decreasing over time. However, from 2015 to 2020, the same size of land was planted with abaca at around 8,000 ha (Fig. 3). During the three-year period, the area planted with abaca in Northern Samar (12,000 ha), Western Samar (2,000 ha), and Biliran (18,000 ha) did not vary significantly.

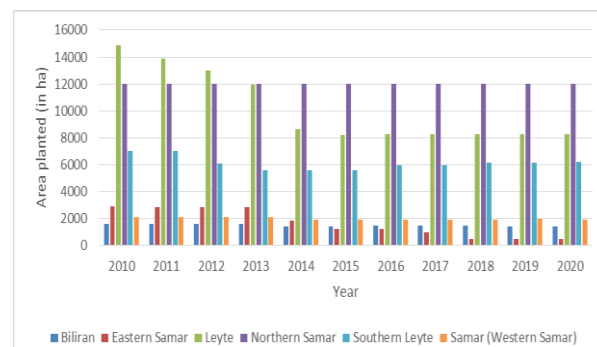


Fig. 3. Agricultural land area planted with abaca in Eastern Visayas provinces (2010-2020)

Note: 1 USD = PHP 51.30

Source: [10].

Table 2 indicates the proportion of abaca-planted agricultural land. Among the provinces in the Eastern Visayas region, Southern Leyte has the smallest agricultural land area (90,673 ha), but has the highest fraction of abaca plantation (6.85%). With 27,239 ha of agricultural land, Biliran was next to have the biggest portion of abaca-planted agricultural land (5.14%).

Table 2. Agricultural land area planted with abaca (ha)

Eastern Visayas Provinces	Agricultural area (ha)	Area planted with abaca (ha)-2020	Area planted with abaca (%)
Biliran	27,230	1,400	5.14
Leyte	332,018	8,250	2.48
Southern Leyte	90673	6,210	6.85
Samar	154,906	1,935	1.25
Eastern Samar	170,995	500	0.29
Northern Samar	976,385	12,040	1.23

Source: [3].

Leyte has the second largest agricultural land next to Northern Samar (332,018 ha), however, only a small percentage of it was planted with abaca (2.48%). Northern Samar,

on the other hand, has the region's largest agricultural land area, but has the smallest percentage being planted with abaca (1.23%), nearly the same percentage in Samar (1.25%). Eastern Samar has the least part of abaca grown (0.29%), with approximately 170,995 ha of agricultural area.

CONCLUSIONS

Within the ten-year assessment period, there are variations in the quantity of abaca fiber production between provinces in the Eastern Visayas region. The agricultural area utilized for abaca farming is decreasing over time and the quantity of abaca fiber production has been reduced due to natural calamities (e.g. typhoons) and the bunchy top virus. With this, abaca farming must be promoted by the agricultural sector in local government units and the government may incentivized planting materials or labor cost to encourage the start-up of farming activity. The buying price of abaca fiber, on the other hand, fluctuates with time. This needs the government's strict supervision of abaca fiber buying prices. Extension services must be offered or expanded, particularly as farmers fight the abaca bunchy top virus disease in order to increase abaca yield in the region. Finally, partnerships and regional collaboration must be strengthened as they share best practices to revitalize the abaca industry in the region.

REFERENCES

- [1]Asian Disaster Reduction Center, 2021. Information on Disaster Risk Reduction of the Member Countries. <https://www.adrc.asia/nationinformation.php?NationCode=608&Lang=en>. Accessed on January 5, 2022.
- [2]Celestino, E.R., Sarmiento, G.O., Bencio, J.T., 2016, Value Chain Analysis of Abaca (Musa textiles) Fiber in Northern Samar, Philippines. *International Journal of Innovative Science, Engineering & Technology*, Vol. 3 Issue 8. http://ijiset.com/vol3/v3s8/IJISSET_V3_I8_19.pdf, Accessed on February 5, 2022.
- [3]Department of Agriculture. <http://da08.da.gov.ph/index.php/da-nfrs/profile>, Accessed on January 5, 2022.
- [4]Far Eastern Agriculture, 2021. <https://www.fareasternagriculture.com/crops/agricultur>

- [e/abaca-the-philippine-fiber](https://www.fareasternagriculture.com/crops/agriculture/abaca-the-philippine-fiber), Accessed on January 5, 2022.
- [5]Google Satellite Hybrid, 2022. [https://mt1.google.com/vt/lyrs=t&hl=en&x=\[x\]&y=\[y\]&z=\[z\]](https://mt1.google.com/vt/lyrs=t&hl=en&x=[x]&y=[y]&z=[z]), Accessed on Jan 17, 2022.
- [6]Nuñez, J. M. C., 2013, Social Impacts of the Abaca Bunchy Top Disease and Adaptive Strategies of Farm Households: A Case in Leyte, Philippines *Annals of Tropical Research* 35[2]:69-87(2013). https://annalsoftropicalresearch.com/wp-content/uploads/pdf_files/Volume35No.2/5.pdf, Accessed on February 5, 2022.
- [7]National Economic and Development Authority. 2022. <http://yolanda.neda.gov.ph/about/>, Accessed on January 20, 2022.
- [8]Philippine General Consulate, 2020, <https://www.vancouverpcg.org/resources-listofrestaurants/yamang-pinoy/abaca/the-philippine-abaca-industry/>, Accessed on January 5, 2022.
- [9]Philippine Statistics Authority, 2021, Volume 15 No. 2. <https://psa.gov.ph/>, Accessed on February 15, 2022.
- [10]Philippine Statistics Authority. <https://openstat.psa.gov.ph/Database>, Accessed on February 15, 2022.
- [11]Waller V., Wilsby A., 2019, Abaca in the Philippines, an overview of a potential important resource for the country: Relating the tensile strength of the single fiber to the microfibrillar angle. <http://kth.diva-portal.org/smash/record.jsf?pid=diva2%3A1352495&dswid=8192>, Accessed on January 5, 2022.
- [12]Wikipedia. 2022. https://en.wikipedia.org/wiki/Eastern_Visayas, Accessed February 15, 2022.