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Abaca production and farming practices in Caraga region

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Abstract

The study was conducted to determine Abaca's production areas and farming practices in the Caraga region. There were 1,256 abaca farmers identified and interviewed through a survey questionnaire. Geo-tagging was done to verify the area and location of abaca production areas in the Caraga region. Moreover, Focus Group Discussions (FGDs) were conducted among farmers and traders. A stakeholder's forum was also done to validate the data collected, which farmers, traders, and representatives from DTI, LGUs, PAOs, and PhilFIDA attended. The results showed 31 abaca-producing municipalities in the Caraga region, with Surigao del Sur as the leading province. Likewise, Surigao del Sur had the most abaca farmers among the provinces, dominated by males. The majority of the farmers have a 1-hectare farm area. At the same time, the land owner they were cultivating was also members of different organizations, either government or nongovernment. Most farmers engaged in abaca production for 11 to 20 years already, and aside from Abaca, they planted falcata as another source of income. The variety commonly planted by the farmers was Inusa, primarily given by neighbors. Most of them do not use fertilizers due to the high cost. Eighteen months after planting, most can frequently harvest fiber 3-4 times yearly. As practiced, the waste materials were just dumped in the area after harvesting.

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Introduction

The "Manila hemp," known internationally for its world-class fiber, continues to be one of the priority agricultural commodities of the Department of Agriculture (DA). The Philippines supplies more than 87.4 percent of the total abaca fiber market and earns more than $111.33 million in global abaca trade annually (PCA, 2017).

Abaca is in great demand in the world market today because of its lucrative value in industries such as making security papers, paper money, ropes, insulators, and other handicrafts. The most important part of the Abaca is the stalk, the source of fiber. Abaca fiber is superior over all other natural fibers because of its great strength, which is three times stronger than cotton, and its resistance to the action of water.

Due to the increasing use of abaca fiber in manufacturing specialty paper and growing insistence on gifts, toys, and housewares, the demand for fiber among pulp manufacturers is constantly surging. The Abaca industry, mainly from Visayas and Mindanao, helped boost the country's economy in the past decade, earning an annual average of Php 4.7 billion in export earnings (www.philfida.da.gov.ph, 2019).
The Philippines, the world's largest abaca producer, hold a significant market share in Asia Pacific. A considerable portion of produced abaca fiber in the Philippines is internally consumed while a significant portion is exported to various countries like U.S., Japan, and other European countries. The Philippine government is taking supportive initiatives to increase the production levels of high-quality abaca fiber for domestic consumption and export (Erie News, 2019).

Thus, abaca profiling in the Caraga region is necessary to fill the gaps in the recently conducted Value Chain Analysis of the Commodity in the Caraga region. Profiling tells us the actual scenario of how many abaca farmers engaged in this commodity, what support programs they availed in our present administration, what they need and what other issues and concerns so that our government can also make some intervention programs for our abaca industry.

Caraga Region contributes 5% to the national abaca production. Caraga has supplied Abaca as raw material for pulp production and handicrafts to Iligan, Davao and the Bicol region. Surigao del Sur is the largest abaca producer in the Caraga region, and in Mindanao, it accounts for 65% of the Caraga region's abaca output during the year 2013.

With the presence of a Mindanao-wide VCA for Abaca and the commodity investment plans (CIPs) of the Caraga Provinces, the main aim of the study is to address current data gaps of the Abaca industry profile of the Caraga Region, which will serve as the basis for determining the kind of support programs which the national agencies, the local and nongovernment organizations could extend to support the industry in the region.

Materials and methods

A total of 3 815 Abaca farmers were identified and listed. Of the 3 815 abaca farmers, 1,256 abaca farmers, or 47.86%, were identified and interviewed. The study started with listing abaca farmers, traders, and processors in the Philippine Fiber Industry Development Authority. A courtesy call was made by sending a communication letter to the local government unit.

Geo-tagging of abaca production areas was conducted during interviews made possible with the help of the Municipal Agricultural Officers (MAOs) and local officials.

Focus group discussions (FGDs) were conducted with farmers and traders to gather more data. Finally, a Stakeholder's Forum attended by the farmers, traders, representatives from the Department of Trade and Industry (DTI), DA, the PLGUs, the Provincial Agriculture Offices (PAOs), and the PhilFIDA in the region was conducted for data validation.

Result and discussion

The abaca production areas in Caraga Region were identified by geo-tagging/geo-mapping.

In the Region, there are 31 abaca-producing municipalities. The majority of these municipalities are located in Surigao del Sur. There are 16 or 84.21% of municipalities in Surigao del Sur that produces Abaca. These are Cortes, Lanuza, San Miguel, Tandag City, Tago, Carrascal, Barobo, Lingig, Tagbina, Hinatuan, Bislig, Carmen, San Agustin, Marihatag, Cagwait, and Liangga.

In Surigao del Norte, there are 20 municipalities; out of them, only three (3) were abaca-producing areas because some of the areas are coastal, so their source of income is devoted to fishing, mining, and farming.

In Agusan del Sur, there are seven abaca-producing municipalities. These are the following: Sibagat, Bayugan, Esperanza, San Luis, Prosperidad, Rosario, and Bunawan. While in Agusan del Norte, only five municipalities produced Abaca; these are Nasipit, RTR, Cabadbaran, Kitcharao, and Last Nieves.

*The Abaca profile in the RegionRegion in terms of the number of abaca farmers, socioeconomic profile, membership of farmers in organizations, the area planted to Abaca, the production, marketing, and processing practices of the various abaca farmers, traders, and processors in Caraga regio*n

The number of abaca farmers in Caraga is 3, 815 which are distributed in the four provinces of the RegionRegion (Table 1). Surigao del Sur had the most number of abaca farmers in caraga region, followed by the province of Agusan del Norte, Surigao del Norte and Agusan del Sur. In Surigao del Sur, there are 2,059 abaca farmers and 1,500 traders, and there are no processors in the area. At the same time, in Surigao del Norte, there are 553 abaca farmers identified and four abaca traders. On the other hand, there are 448 abaca farmers, 27 traders, and two processors in the province of Agusan del Sur, while there are 755 farmers, 31 traders, and three processors in Agusan del Norte.

Table 1. Distribution of Abaca farmers and processors per municipality per province

Number of Abaca Farmers		Percent Share
	Agusan del Norte	
Rtr	117	3.06
Cabadbaran	86	2.27
Santiago	315	8.27
Kitcharao	144	3.77
Jabonga	23	0.60
Tubay	25	0.65
Nasipit	38	0.99
Las Nieves	7	0.18
Total	755	19.79%
Agusan del Sur		
Sibagat	159	4.17
Prosperidad	156	4.09
Bayugan	24	0.62
Esperanza	41	1.08
Rosario	42	1.10
San Luiz	26	0.68
Total	448	11.74
Surigao del Norte		
Sison	115	3.01
Mainit	222	5.82

Alegria	216	5.67
Total	553	14.50
Surigao del Sur		
Cortes	22	0.58
Lanuza	155	4.06
San Miguel	147	3.85
Tandag City	49	1.28
Tago	41	1.07
Carrascal	24	0.63
Barobo	16	0.42
Lingig	13	0.34
Tagline	399	10.47
Hinatuan	94	2.46
Bislig	708	18.56
San Agustin	233	6.11
Marihatag	158	4.14
Total	2,059	53.97
Overall total	3, 815	100
Number of Abaca Processors per province		Percent Share (%)
Agusan del Norte	2	50
Agusan del Sur	2	50
Surigao del Norte	0	0
Surigao del Sur	0	0
Total	4	100

Table 2. Socioeconomic profile of abaca farmers in the Caraga region

		Number of Respondents	Percentage (%)
Gender	Male	765	60.90
	Female	491	39.09
	Total	1,256	100
Land Ownership	Owned	1,251	99.60
	Tenanted	5	0.39
	Total	1,256	100
Other sources of Income /other commodity	Banana	500	39.81
	Falcata	600	47.78
	Coconut	78	6.21
	Durian	16	1.27
	Vegetables	17	1.35
	Coffee	45	3.58
	Total	1,256	100
Member of the organization	Members	934	74.36
	Not members	322	25.64
	Total	1,256	100

Source: From the Survey (2018).

As mentioned, most abaca farmers are members of different organizations (Table 3). These farmers had been in abaca production for quite a time. Being part of an organization is advantageous since it gives the farmers access to various forms of assistance from government or nongovernment agencies and will prioritize them, particularly in the availing of the different inputs, technical assistance, and market access.

Table 3. Abaca Farmers' Membership in Organizations

Province	Name of Organization	Total Number	Percentage (%)
Agusan del Norte	San Antonio Integrated Farmers Multi-Purpose Cooperative (SAIFMULCO)	103	42.92
	KooperatibasaKababayin-an saMahaba Para saKalambuan (KKMPK)	17	7.08
	Bangayan Lake View Association (BLVA)	44	18.33
	Doña Rosario Cloa Holders and Vegetable Association (DRCHVA)	25	10.42
	San Isidro Upland Farmers Multi-Purpose Cooperative (SIUFMULCO)	51	21.25
	Total	240	100
Agusan del Sur	SFFARBICO	30	12.45
	San Jose Abaca Farmers Association (SJAFA)	87	36.10
	KDFA	19	7.88
	Pandalisay Farmers Association (PFA)	41	17.01
	Magkasa Farmers Association	19	7.88
	BuenaswerteFarmers Association	2	0.82
	B3 Cosef Farmers Association (BCFA)	12	4.98
	CEAMCOPA	12	4.98
	PAMANA	8	3.32
	Farmers Association	11	4.56
	Total	241	100
Surigao del Sur	BACOCOPA	2	0.74
	SIKAPCO	1	0.37
	PCA	1	0.37
	SUDAN	1	0.37
	Manlico Multi-Purpose Cooperative (MMPC)	23	8.52
	KAMAANAN	69	25.56
	MAFAMCO	23	8.52
	CFA	4	1.48
	SUPA	1	0.37
	PCA	1	0.37
	BFA	26	9.63
	BAFARCO	12	4.44
	LICARCA	2	0.74
	NAGMATA	2	0.74
	KAPCO	82	30.37
	San Pedro Farmers Association	20	7.41
	Total	270	100
Surigao del Norte	LOWERBECCA	85	46.45
	BFFA	98	53.55
	Total	183	100
	Members	934	74.36
	Non-Members	322	25.64

Source: From the Survey (2018).

Abaca profile in Caraga region

The total farm size of abaca areas in the region started to increase in 2016 from 10,437 to 10,482 hectares. The small area was due to the attack of pests and diseases. The abaca plants can grow well in areas with other commodities planted due to their shade-loving characteristics. As practiced in the Region region, Abaca is intercropped with other plants such as banana, falcate and coconut; hence, 647 plantlets can be planted along with the other plants in a 1-hectare area. Among the four provinces, Surigao del Sur has the most significant area; the smallest is in Surigao del Norte. Lately, new abaca farms are emerging in Bayugan 3 and Sibagat, Agusan del Sur, because they were encouraged to plant due to the financial assistance given to them by the DA -PhilFIDA, DAR, and MMPRC.

Table 4. Area Planted to abaca in hectares (2013 – 2017)

Province	2013	2014	2015	2016	2017
Agusan del Norte	1, 620	1, 630	1, 630	1, 635	1, 635
Agusan del Sur	3, 236	3, 236	3, 266	3, 266	3, 266
Surigao del Norte	81	81	81	81	81
Surigao del Sur	5, 000	5, 000	5, 000	5, 000	5, 000
Total	10, 437	10, 437	10, 437	10, 482	10, 482

Source: PSA 2018

In terms of total land area planted, the majority (362 or 28.82%) of abaca farmers own 1 hectare, some have 2 hectares (145 or 11.54%), and others have owned about 3 hectares (128 or 10.19%). These farm areas are not planted solely with Abaca but intercropped or shaded with falcata, coconut, bananas, and other crops.

Table 5. Abaca farm areas

Farm area (ha)	Number of respondents	Percentage (%)
0.25	103	8.20
0.50	109	8.68
0.75	30	2.39
1	362	28.82
1.25	6	0.50
1.50	58	4.62
1.75	22	1.75
2	145	11.54
2.25	49	3.90
2.50	24	1.91
2.75	18	1.43
3	128	10.19
3.50	7	0.56
4	50	3.98
5	76	6.05
6	20	1.59
7	8	0.64
8	3	0.24

9	1	0.10
10	23	1.83
12	4	0.32
13	1	0.10
14	1	0.10
15	6	0.50
20	1	0.10
27	1	0.10
Total	1,256	100

Source: From the Survey (2018).

The majority of farmers planted varieties is Inusa (775 or 40.79%), followed by Tanggongon (515 or 27.10%), Languise (281 or 14.78%), Laylay (204 or 10.73%), Libotone (69 or 3.63%) and wild varieties (56 or 2.95.

Table 6. Varieties of Abaca planted

Varieties of Abaca used	Price of Seedling	Number of respondents	Percentage (%)
Inusa	25.00	775	40.79
Tanggongon	25.00	515	27.10
Language	25.00	281	14.78
Layla	25.00	204	10.73
Libotone	25.00	69	3.63
Wild	N/A	56	2.95
Total		1,900	100

Source: From the Survey (2018).

Most farmers get the planting materials from the neighbor's farm (800 or 63.69%). Others get from National Line Agencies like the Department of Agriculture and PhilFIDA (275 or 21.89%). Some farmers get tissue-cultured planting materials from the Academe, particularly at Caraga State University (70 or 5.57%) and Visayas State University (39 or 3.10%), while others were from Local Government Units (12 or 0.96%) and Cooperatives (60 or 4.78%). That is why, when their neighbors' farms were attacked with biotic stresses like pathogens and insect pests, their farm was also affected since they only had one source of planting materials.

Table 7. Source of abaca planting materials

Source of planting materials	Number of respondents	Percentage (%)
Neighbor	800	63.69
National Line Agency (DA, PhilFIDA)	275	21.89
Caraga State University	70	5.57
Visayas State University	39	3.10
Local Government Unit	12	0.96
Cooperatives	60	4.78
Total	1256	100

Source: From the Survey (2018).

As to the mode of payment, only 181 or 14.41% of the farmers buy the planting materials from commercial seedling producers; the majority ask for planting materials from the neighbors (800 or 63.69%), others are granted (275 or 21.89%) by the different government or nongovernment institutions. Most abaca farmers need help buying planting materials from different commercial producers.

Table 8. Mode of Payment of Planting Materials

Mode of Payment	Number of respondents	Percentage (%)
Not paying/Given by the neighbor	800	63.69
Grant	275	21.89
Cash	181	14.41
Total	1256	100

Source: From the Survey (2018)

Most farmers (956 or 76.11%) do not use fertilizers; only 300, or 23.89%, use fertilizers as part of their farming practices. The high prices of the different farm inputs hamper them in the use of fertilizers.

Table 9. Use of Fertilizer

Fertilizer application	Number of respondents	Percentage (%)
Yes	300	23.89
No	956	76.11
Total	1256	100

Source: From the Survey (2018)

Most respondents harvested the abaca fiber 3-4 times every year (756 or 60.19%), while others harvested 1-2 times a year (500 or 39.81%). The reason why the harvesting frequency of harvesting in a year varies is due to the availability of the workforce and the sharing scheme arrangements between the owner and the harvester. In some cases, the harvester gets a higher income share than the owner.

Table 10. Frequency of harvesting

Frequency of harvesting	Number of respondents	Percentage (%)
1-2 times every year	500	39.81
3-4 times every year	756	60.19
Total	1256	100

Source: From the Survey (2018)

After cleaning the abaca fiber, most farmers (1108 or 88.21%) dumped their waste materials in the area, while others (148 or 11.78%) utilized it as organic fertilizers. This indicates a need to educate the farmers by telling them the value of the organic fertilizer that can be produced. Technology transfer may be introduced for possible enterprises.

Table 11. Utilization of Waste materials

Utilization of Waste materials	Number of respondents	Percentage (%)
Dumped	1108	88.21
Used as organic materials	148	11.78
Total	1256	100

Source: From the Survey (2018).

The majority of the area can only be accessed by walking (500 or 39.81%), some by "habal- habal" motorcycle (445 or 36.26%), and by truck hauling (301 or 23.96%). This means that the farm's location is in hilly areas, mainly at the top of the mountains, as also characterized as a shade-loving plant that grew better intercropped with other commodities like falcata, banana, and coconut.

Table 12. Accessibility of transportation for abaca production

Accessibility of transportation	Number of respondents	Percentage (%)
By foot	500	39.81
By "Habal-habal"	445	36.26
By hauling truck	301	23.96
Total	1256	100

Source: From the Survey (2018)

Most of the abaca farmers (55.73%) planted Abaca within 11-20 months, 27.87% planted Abaca within 21-30 years, 10.35% planted Abaca within 31-40 months, and 6.05% of the respondents planted Abaca in 41-50 months.

Data revealed that most of the abaca farmers are new in the planting of Abaca due to the rehabilitation of the farms. It was known that most of their plants were attacked by diseases, so the plants were eliminated in the area to eradicate the disease.

Table 13. Years in Abaca Production

Number of years in abaca production	Number of respondents	Percentage (%)
11-20	700	55.73
21-30	350	27.87
31-40	130	10.35
41-50	76	6.05
Total	1256	100

Source: From the Survey (2018).

Government support programs, policies, and regulations in the abaca industry in Caraga Region.
Philippine Fiber Industry Development Authority (PHILFIDA)-Provide technical assistance in the establishment of tissue culture laboratory and diagnostic center, seedling dispersal , techno-transfer trainings in abaca processing and utilization , GAP, Pest and disease management, product testing and consultancy services in farm management), Academe/Caraga State University (CSU)-Provide research and development, knowledge management, industry /commodity profiling, GAP, EIC, technical training, and industry forum, Department of Trade and Industry (DTI) Caraga Region -SSF, business conference and matching, product development, marketing and promotions, business/industry forum, industry profiling and consultancy services, Department of Agrarian Reform (DAR)-Develop through inter-cropping or support to productivity the CARP awarded lands which are suitable for Abaca production by capital credit provision in TUJAKITSAN cluster of ARB's (TUJAKITSAN) is an acronym referring to the municipalities of Tubay, Jabonga, Kitcharao and Santiago).

The project has already conducted eighty (80) classes with 13 types of capability enhancement training to 21 farmer groups; provided 12 mobile abaca stripping machines, one unit 10-wheeler hauling truck, and provided planting materials and other farm inputs to 10 ARBOs covering 300 hectares.

Department of Science and Technology- (DOST). Provide technical expertise and training, technology support, transfer of technology, and provide consultants for training and seminars relating to production and use of equipment.

Department of Agriculture -Provide technical expertise, model farm demonstration, GAP Farm establishment and expansion, seedling distribution, pest and disease management, IEC, and knowledge management.

Establishing a P15M abaca fiber warehouse with a drying area at Santiago, Agusan de Norte.

San Isidro Upland Farmers Multi-purpose (SIUFMULCO) gained funding support from the DA's Philippine Rural Development Project (PRDP) for its abaca fiber production and trading.

Enhancement project with a total approved project cost of P31M, P16M of which is for the enterprise development component.
Planting materials, organic fertilizer, nursery, and stripping machines will be equally distributed to the cluster areas as part of the provision of the project package.

Postharvest facilities such as baling machines, forklifts, wood pallets, and push carts to enhance the production of quality fiber were also included in the package. Two hauling trucks, a moisture meter, and weighing scales would also support efficient marketing and trading.

Philippine Mining Mineral Corporation (PMMC) - Provide inputs, technical assistance, and other support services for the farmers in Rosario, Agusan del Sur activities.

Table 14. Government Support Services

Constraints	Opportunities	Support Programs/Activities Conducted
Input Provision Lack of access to disease-free abaca planting materials.	Using disease-free and good-quality planting materials of high yielding can significantly increase production volume and improve yield. Increase the number of open-type abaca nurseries.	PhilFIDA, DA, and DAR are government agencies that started distributing abaca planting materials to the farmers in the Region region.
Most farmers do not use planting materials from tissue-cultured nurseries.	Farmers in remote areas, wherein accessibility issue is a problem, may organize themselves into a cooperative for the fastest delivery of services from the government	Academe, PhilFIDA, and Private investor.
Limited access to agricultural advisory services	and nongovernment organization so that no farmers are left behind.	Municipal Agriculture Offices through HVDP and PhilFIDA.
Farming Very low crop productivity due to: Farmers' traditional practices, pest and diseases outbreak, lack of training and seminars, Partly unsustainable produce in sensitive ecosystems	Training on good agronomic practices can help farmers reduce incidences of pests and diseases and improve farm productivity. They are converting abaca fiber waste materials to organic fertilizer.	Academe, and PhilFIDA Through research and development and during the implementation stage, Academe invites partner line agencies and private investors. DA-PhilFIDA, DAR, and other line agencies through their FMR

Farm to Market Roads		projects
PostharvestPostharvest Operations Lack of access to drying and postharvest facilities in the Surigao del Sur and Agusan del Sur provinces.	Good roads will reduce the cost of transportation, resulting in a higher profit.	DA-PhilFIDA, DAR, and other line agencies. Financial Institution, DA Financial Assistance, and DTI.
Processing Lack of stripping machines & drying facilities, and other processing equipment. Farmers sourced out seeds that produced brittle fiber alleged from Leyte. Farmers prefer to use suckers as planting materials.	Improved fiber extraction and proper drying. Better market linkages The grading system also recognizes price premiums for good-quality fiber.	Bureau of Plant and Industry (BPI) LGU, DA and academe. PAMANA –DA Provided GBE to LGU San Agustin SDS.
Third-Party Certification Lack of capacity to comply with Rainforest Alliance Certification requirements	Facilitate access stripping equipment to abaca farmers. Mentor abaca farmers in the preparation of documents and financial sourcing (with the help of Big Brothers: new tech pulp) Third-party certification means a price increase. Capacitate LGU based AEWs as abaca doctor. Use abaca seeds; recommend to farmers. TOT on abaca production of LGU –focal person. Use seeds suitable to land. Consider the current trend of abaca decorticated fiber.	DTI SDS provided training in Abaca bag making, decors, and accessories to women's organizations in San Agustin, SDS.

Source: FGD & Stakeholders Forum (2019).

Conclusion

Based on the result, it was concluded that farmers practiced intercropping. Planting materials were secured from their neighboring areas given by DA-PhilFIDA, DAR, and Cooperatives and sourced out from academe/tissue cultured laboratories. The harvesting frequency in a year is 3-4 times, depending on the seedlings' quality and variety. Abaca farmers are members of the organization and availed of training and other support programs as a benefit of membership. Waste materials from abaca fibers were not converted to organic fertilizer; they just dumped it. The abaca farms are located in hilly areas. Thus, they have problems with the accessibility of transportation during the planting and harvesting of their crops. Most abaca farmers were rehabilitating their abaca fibers due to the previous years of pest infestations.

Acknowledgment
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References

Abaca Sustainability Manual, Published by Philippine Fiber Industry Development Authority, 2016

Department of Agriculture, Philippine Fiber Industry Development Authority. 2016-2019, www.philfida.da.gov.ph. All rights reserved.

Edwin R. Celestino, Gregorio O. Sarmiento, and Jinky T. Bencio, 2016. Value Chain Analysis of Abaca (*Musa* textiles) Fiber in Northern Samar, Philippines, IJISET- International Journal of Innovative Science & Technology, Vol. 3, Issue 8.

Enhanced Provincial Commodity Investment Plan, Province of Agusan del Norte.

Philippine Abaca helps in global environment conservation. 2016-2019. Department of Agriculture, Philippine Fiber Industry Development Authority. www.philfida.da.gov.ph

Philippine Rural Development Project (PRDP)I-PLAN, 2014. Component Mindanao Cluster, Value Chain Analysis and Competitiveness Strategy: Abaca fiber Mindanao, Department of Agriculture Mindanao Regions.

The Philippine Star, 17 July 2016, Louise Maureen Simeon