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Implementation of Project ConVERGE and Productivity of Abaca Farmers

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ABSTRACT

This study assessed the implementation of the Convergence on Value Chain Enhancement for Rural Growth and Empowerment (Project ConVERGE) and the productivity of abaca farmers in Camiguin Province. A quantitative survey design, supplemented by casual interviews, was employed. Through total enumeration, the study involved 103 abaca farmers who owned more than one hectare of abaca production area, belonged to assisted Agrarian Reform Beneficiary Organizations, and had engaged in abaca farming for at least five years in Mambajao, Catarman, and Sagay. Data were analyzed using frequency counts, percentages, weighted means, standard deviations, independent-samples t-tests, one-way analysis of variance, Tukey post hoc comparisons, and ranking. Project ConVERGE was implemented to a moderate extent (TAWM = 2.82, SD = 1.03). Strong implementation was evident in storage and processing facilities, planting materials, technical guidance, fiber-quality support, and buyer linkages. Gaps remained in local funding, farm-to-market roads, credit access, financial-management assistance, and information on subsidies. Significant differences in implementation were found when respondents were grouped according to age ($p = .013$) and average monthly income ($p = .016$), but not according to sex ($p = .717$) or the number of trainings attended ($p = .324$). Productivity indicators generally improved from 2021 to 2025, particularly fiber yield, harvesting performance, fiber quality, and income. The most pressing concerns were limited time to participate in activities outside Camiguin, inadequate financial support, and changing project directives. The findings indicate that Project ConVERGE contributed to the revitalization of abaca farming, although stronger financial inclusion, infrastructure support, monitoring, and locally accessible capacity-building activities are needed to sustain its gains.

Keywords: *abaca farming, agricultural value chain, Camiguin, farmer productivity, Project ConVERGE, rural development*

INTRODUCTION

Rural development initiatives play an important role in improving the income, welfare, and economic security of farming communities. Agricultural cooperatives and farmer organizations provide mechanisms for pooling resources, strengthening bargaining power, sharing production facilities, and gaining access to higher-value markets. International evidence emphasizes that smallholder farmers benefit most when support programs connect production assistance with institutional strengthening, technology, finance, and market access (Food and Agriculture Organization of the United Nations [FAO], 2022; International Fund for Agricultural Development [IFAD], 2023; Markelova et al., 2009).

In the Philippines, the Department of Agrarian Reform (DAR), in partnership with IFAD, implemented the Convergence on Value Chain Enhancement for Rural Growth and Empowerment (Project ConVERGE). The project adopted a value-chain approach for Agrarian Reform Community clusters and integrated participatory

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planning, smallholder agricultural and rural enterprise development, and project management, monitoring, and evaluation. In Camiguin Province, the project supported the revival of the abaca industry through an Abaca Fiber Production and Marketing Enterprise. NAGPAKABANA Multi-Purpose Cooperative served as the lead consolidator, while participating farmer organizations contributed to production and marketing activities. These interventions included farm inputs, equipment, post-harvest facilities, capacity-building activities, transport support, and buyer linkages.

Abaca remains an important livelihood crop because its durable fiber is used in paper, textiles, cordage, and other industrial products. The sector, however, remains vulnerable to plant diseases, typhoons, infrastructure limitations, and constrained access to finance and technology. The Philippine Fiber Industry Development Authority (2024) documented the continuing importance of production support for the abaca sector, while local reports described the turnover of facilities intended to improve production and marketing in Camiguin (Philippine Information Agency [PIA], 2021). Similar studies have shown that technical innovations and organized marketing can increase the competitiveness of abaca producers, but farmers still face operational and market-related difficulties (Bales et al., 2024; Dhillon & Moncur, 2023).

In Camiguin, the project contributed to renewed abaca production and institutional marketing arrangements. Nevertheless, several implementation questions remained. Farmers expressed varied experiences regarding the adequacy of infrastructure, the usefulness of training, financial access, the consistency of implementation, and the sustainability of interventions after the formal project period. These concerns are important because physical assets alone do not automatically guarantee sustained productivity. Cooperative capacity, farmer participation, access to credit, technology adoption, and resilience to environmental risks influence the extent to which development inputs translate into meaningful outcomes (Asante et al., 2022; Mojo et al., 2021; Verhofstadt & Maertens, 2020).

This study assessed the implementation of Project ConVERGE and the productivity of abaca farmers in Camiguin Province. Specifically, it described the respondents according to age, sex, average monthly income, and number of trainings attended; determined the extent of project implementation; examined differences in implementation across respondent profiles; analyzed productivity patterns from 2021 to 2025; and identified the challenges encountered by abaca farmers. The study was guided by a Theory of Change perspective, which views project inputs, activities, outputs, and outcomes as interconnected stages shaped by local conditions, institutional support, and implementation barriers.

Literature Review

Integrated Rural Development and Agricultural Value Chains

Agricultural development programs are more likely to improve farmer welfare when they provide coordinated support across the value chain. Smallholder farmers often encounter limited access to technology, financing, market information, and post-harvest facilities. These constraints weaken their ability to increase production and negotiate favorable prices. FAO (2022) emphasized that agricultural automation and modern equipment can improve productivity, but effective adoption requires training, affordability, and enabling institutions. IFAD (2023) similarly highlighted the value of rural development approaches that strengthen the relationship between farmers, organizations, markets, and public institutions.

Collective action can reduce the disadvantages experienced by individual smallholders. Markelova et al. (2009) explained that farmer organizations help producers enter markets by consolidating output, sharing resources, and coordinating transactions. Evidence from cooperatives also shows that organizational participation can improve agricultural performance and farmer aspirations when institutions are capable of sustaining shared services and market relationships (Mojo et al., 2021; Verhofstadt & Maertens, 2020). These findings support the value-chain orientation of Project ConVERGE, which was designed to connect production support with enterprise development and marketing.

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Abaca Production, Technology, and Resilience

Abaca farming requires coordinated interventions because productivity depends on planting materials, farm practices, harvesting methods, fiber extraction, drying, storage, and market grading. Local and regional studies have identified continuing problems in the abaca industry, including production constraints, marketing difficulties, and the need for better post-production practices (Bales et al., 2024). The Philippine Fiber Industry Development Authority (2024) likewise noted the importance of maintaining production performance while responding to disease risks and climatic disturbances.

Technology can help farmers improve productivity, but adoption is shaped by practical conditions. Dhillon and Moncur (2023) argued that technological advancements offer opportunities for small-scale farming while also requiring attention to cost, skills, and local suitability. Nor Diana et al. (2024) further identified behavioral and contextual factors affecting farmers' intention to adopt agricultural technologies in Southeast Asia. These findings indicate that equipment distribution should be accompanied by training, maintenance support, accessible infrastructure, and responsive monitoring.

Farmer Organizations, Inclusion, and Market Access

Farmer organizations can strengthen market participation by consolidating output and building relationships with buyers. Cooperative structures are particularly relevant for abaca farmers because fiber production is often dispersed across upland communities. Through aggregation and shared facilities, farmers can improve product consistency, reduce transaction costs, and strengthen their bargaining position. Briones (2021) emphasized that agri-food transformation depends on coordinated systems that connect primary producers with processing, distribution, and markets.

Participation and inclusion remain important in determining whether benefits are equitably distributed. Malapit et al. (2020) showed that empowerment in agricultural value chains involves access to productive resources, meaningful participation, and the capacity to benefit from market opportunities. Differences in income, age, physical capacity, and access to information may affect how farmers experience the same program. Consequently, an assessment of Project ConVERGE should examine not only its general implementation but also whether particular groups encounter unequal conditions.

Monitoring, Sustainability, and Rural Enterprise Support

Sustained rural enterprise development requires more than one-time assistance. Programs should ensure that equipment is used effectively, facilities are maintained, training is translated into farming practice, and cooperatives are able to continue operations after external support is reduced. The World Bank (2020) emphasized that agricultural development is closely connected with rural livelihoods, while PIDS (2022) discussed partnership-based and facilitator-driven value-chain approaches that can strengthen agricultural enterprises.

Monitoring is essential because project results may differ across locations and groups. A structured assessment can identify strong implementation areas and reveal gaps in infrastructure, financing, technical support, and coordination. Quantitative evidence is especially useful for comparing respondent experiences and tracking changes over time. As a result, the present study examined both implementation conditions and five-year productivity patterns to provide a localized basis for improving support to abaca farmers.

METHODS

Research Design

The study employed a quantitative survey design to assess the extent of Project ConVERGE implementation and the productivity of abaca farmers. The design was appropriate because it enabled the collection and statistical analysis of numerical data describing respondent profiles, implementation ratings, productivity indicators, and ranked challenges. Casual interviews were conducted after the survey to verify selected responses and provide contextual clarification. Quantitative approaches are useful for identifying patterns, differences, and trends across measured variables (Apuke, 2017; Creswell & Creswell, 2023).

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Research Locale

The study was conducted in selected abaca-producing communities in Camiguin Province. The coverage included Barangay Mainit and adjacent barangays in Catarman, Barangay Bonbon and adjacent barangays in Sagay, and Agoho and Quiboro in Mambajao. These areas were included because they were connected with farmer organizations assisted under Project ConVERGE. NAGPAKABANA Multi-Purpose Cooperative in Catarman served as the lead consolidator, while participating organizations supported the abaca fiber production and marketing scheme.

Participants and Sampling Technique

The respondents were 103 abaca farmers who were beneficiaries of Project ConVERGE. The selection criteria included ownership of more than one hectare of abaca production area, membership in an assisted farmer organization for at least five years, and active engagement in abaca farming during the period covered by the study. Total enumeration was applied to include all farmers who met the criteria. Of the 103 respondents, 61 were from Sagay, 34 were from Catarman, and eight were from Mambajao.

Table 1. *Distribution of Respondents by Municipality*

Municipality	Frequency	Percentage
Mambajao	8	7.77%
Catarman	34	33.01%
Sagay	61	59.22%
Total	103	100.00%

Research Instrument

The survey questionnaire was adapted and modified from the 2016 Project Implementation Manual of Project ConVERGE, the 2021 Annual Outcome Survey, and the project endline and policy-study materials. It contained four parts: respondent profile; extent of implementation under the Integrated Smallholders Agricultural and Rural Enterprise Development component; productivity indicators from 2021 to 2025; and challenges ranked from the most pressing to the least pressing. The implementation items used a four-point scale: 3.26–4.00, high extent; 2.51–3.25, moderate extent; 1.76–2.50, less extent; and 1.00–1.75, no extent.

The instrument was reviewed by three experts: two from DAR and one from the Department of Trade and Industry. A pilot test was conducted among members of NAGPAKABANA Multi-Purpose Cooperative who were not included in the final study. The reported Cronbach's alpha exceeded the acceptable threshold of .70, indicating satisfactory internal consistency. Reliability and validity checks are important in ensuring that quantitative instruments measure the intended constructs consistently (Sürücü & Maslakçi, 2020).

Data Gathering Procedure

The researcher requested approval from relevant offices and coordinated with the chairpersons of participating farmer organizations. Consent letters were provided before the administration of the questionnaire. Focus-group dialogue and casual interviews were used to support field coordination and clarify selected responses. Completed questionnaires were collected, checked, encoded, and prepared for statistical analysis.

Data Analysis

Frequency counts and percentages were used to describe respondent profiles and productivity indicators. Weighted means and standard deviations were used to determine the extent of project implementation. Independent-samples t-tests were applied to sex and income groups, while one-way analysis of variance was used for age groups and the number of trainings attended. Tukey post hoc comparisons were used to identify significant age-group differences. Challenges were ranked from 1 to 10, with the lowest total score representing the most pressing concern.

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Ethical Consideration

Participation was voluntary and based on informed consent. Respondents were informed of the purpose of the study and the academic use of their responses. Confidentiality was maintained, and no personally identifying information was presented in the findings. The researcher avoided coercion, respected local practices, and reported the results accurately. These procedures are consistent with the principles of respect, confidentiality, and responsible research conduct (Israel & Hay, 2006).

RESULTS AND DISCUSSION

Profile of the Respondents

The study involved 103 abaca farmers. Most respondents were 50–59 years old (45.63%), followed by those aged 49 years and below (30.10%). Male respondents comprised 78.64% of the sample, indicating that abaca farming in the covered areas remained predominantly male. Most respondents reported an average monthly income of PHP 5,000–10,000 (83.50%), while 16.50% earned below PHP 5,000. Regarding training exposure, 61.17% had attended four to five trainings, 22.33% had attended three or fewer, and 16.50% had attended six or more. The profile suggests that the sector is sustained mainly by middle-aged farmers with modest incomes and moderate exposure to capacity-building activities.

Table 2. *Profile Distribution of Respondents (N = 103)*

Variable	Category	n	%
Age	49 years and below	31	30.10
	50–59 years	47	45.63
	60–69 years	17	16.50
	70 years and above	8	7.77
Sex	Male	81	78.64
	Female	22	21.36
Average monthly income	Below PHP 5,000	17	16.50
	PHP 5,000–10,000	86	83.50
Trainings attended	3 or fewer	23	22.33
	4–5	63	61.17
	6 or more	17	16.50

Extent of Project ConVERGE Implementation

Project ConVERGE was implemented to a moderate extent (TAWM = 2.82, SD = 1.03). The variation in responses indicates that farmers did not experience the interventions uniformly across locations and support areas. The strongest ratings were concentrated in storage and processing infrastructure, planting-material provision, technical guidance, fiber-quality improvement, and buyer linkages. These results are consistent with the purpose of value-chain interventions, which is to reduce production constraints and connect smallholders with organized markets (Markelova et al., 2009; PIDS, 2022).

Important gaps were also identified. Respondents rated LGU support for equipment funding and procurement (M = 1.00, SD = 0.00), farm-to-market road availability (M = 1.05, SD = 0.22), adequate budget for equipment and facilities (M = 1.10, SD = 0.30), financial-management support (M = 1.50, SD = 0.50), information on financial programs and subsidies (M = 1.50, SD = 0.50), and guidance on loans or credit (M = 1.60, SD = 0.49) as having no extent of implementation. The findings show that productive assets and market linkages were more visible than financing and transport support. This pattern reflects a common difficulty in small-scale farming: equipment and training can improve operations, but benefits may remain constrained when farmers lack affordable finance, infrastructure, and institutional support (Dhillon & Moncur, 2023; World Bank, 2020).

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Table 3. *Selected Indicators of the Extent of Project ConVERGE Implementation*

Indicator	Weighted Mean	SD	Description
Farmers helped identify needed equipment and facilities	2.80	0.40	Moderate extent
Equipment and facilities are used efficiently	2.70	0.46	Moderate extent
Adequate budget for equipment and facilities	1.10	0.30	No extent
LGU funding and procurement support	1.00	0.00	No extent
Storage and processing facilities are available and accessible	3.90	0.30	High extent
Solar dryers are available	2.40	0.92	Less extent
Farm-to-market roads are available	1.05	0.22	No extent
Planting materials are provided	3.90	0.30	High extent
Inputs improve production and are properly explained	3.90	0.30	High extent
Technical guidance on proper abaca farming	3.90	0.30	High extent
Post-harvest and processing assistance	3.80	0.40	High extent
Support for fiber quality and grading	3.90	0.30	High extent
Linkages to buyers and cooperatives	3.90	0.30	High extent
Assistance in finding additional markets	1.80	0.40	Less extent
Farm budgeting and cost planning	2.70	0.46	Moderate extent
Guidance on accessing loans or credit	1.60	0.49	No extent
Financial-management support	1.50	0.50	No extent
Information on financial programs and subsidies	1.50	0.50	No extent
Total average weighted mean	2.82	1.03	Moderate extent

Note. The table presents the overall result and selected indicators that represent the principal strengths and implementation gaps

Differences in Implementation Across Respondent Profiles

The t-test results showed no significant difference in implementation ratings when respondents were grouped according to sex ($t = 0.365$, $p = .717$). Male and female farmers therefore reported broadly similar experiences of Project ConVERGE. A significant difference was found when respondents were grouped according to average monthly income ($t = 2.46$, $p = .016$), indicating that income level influenced access to or experience of project interventions. This result is important because low-income farmers may have greater difficulty mobilizing resources for transport, farm inputs, maintenance, and participation in activities.

The analysis of variance showed a significant difference across age groups ($F = 3.37$, $p = .013$), but not according to the number of trainings attended ($F = 1.14$, $p = .324$). Tukey comparisons indicated that respondents aged 70 years and above had lower implementation ratings than those aged 49 years and below (mean difference = 0.361, $p = .016$) and those aged 60–69 years (mean difference = 0.299, $p = .050$). The results suggest that age-related conditions, including physical capacity and comfort with new practices, may shape the experience of program interventions. The absence of a significant training-group difference also indicates that attendance alone may be insufficient when infrastructure, finance, and follow-up support remain uneven. Technology adoption is influenced by multiple contextual factors rather than training exposure alone (Nor Diana et al., 2024).

Table 4. *Tests of Differences in the Extent of Project ConVERGE Implementation*

Profile Variable	Statistical Test	Test Value	p-value	Decision
Sex	t-test	$t = 0.365$	.717	Fail to reject H_0
Average monthly income	t-test	$t = 2.46$	.016	Reject H_0
Age	One-way ANOVA	$F = 3.37$	.013	Reject H_0
Number of trainings attended	One-way ANOVA	$F = 1.14$	.324	Fail to reject H_0

Productivity of Abaca Farmers from 2021 to 2025

The five-year results indicated a general improvement in abaca productivity. The proportion of farmers producing 300–500 kilograms of fiber per hectare per year increased from 30.10% in 2021 to 69.90% in 2025. The proportion harvesting 401–600 stalks per hectare per year or cropping cycle increased from 30.10% to 90.29%, while the proportion extracting 50–100 kilograms of fiber per harvest per hectare increased from 30.10%

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to 90.29%. Good-grade fiber was already high in 2021 (90.29%) and reached 95.15% from 2022 onward. The proportion reporting PHP 20,000–40,000 in annual abaca income per hectare increased from 30.10% to 69.90%.

These patterns indicate that Project ConVERGE contributed to improved production and quality conditions, particularly through planting materials, technical assistance, storage facilities, processing support, and market linkages. The sustained proportion of good-grade fiber suggests that quality-oriented support was effective. Income and cropping frequency improved more gradually, however, showing that production gains should be reinforced through financing, transport access, market expansion, and climate-resilient farming practices. Studies of agricultural value chains similarly emphasize that farm productivity and household welfare depend on the interaction of technical, organizational, and market conditions (Asante et al., 2022; Briones, 2021).

Table 5. *Five-Year Trend in Selected Abaca Productivity Indicators (% of Respondents)*

Productivity Indicator	2021	2022	2023	2024	2025
Fiber production: 300–500 kg/ha/year	30.10	39.81	49.51	60.19	69.90
Cropping frequency: twice per year	20.39	20.39	20.39	20.39	69.90
Stalks harvested: 401–600/ha/year or cropping cycle	30.10	39.81	69.90	79.61	90.29
Fiber extracted: 50–100 kg/harvest/ha/year	30.10	39.81	69.90	79.61	90.29
Good-grade fiber	90.29	95.15	95.15	95.15	95.15
Abaca income: PHP 20,000–40,000/ha/year	30.10	39.81	39.81	49.51	69.90

Challenges Encountered by Abaca Farmers

The most pressing challenge was limited time to participate in activities outside Camiguin (Rank 1). The concern was associated with travel demands and expenses that farmers initially needed to shoulder before reimbursement. Lack of financial support ranked second, while changing directives ranked third. Project sustainability, climate change and disasters, and limited monitoring were also notable concerns. The least pressing challenge was limited participation in trainings conducted within Camiguin, suggesting that local training access was less problematic than travel, finance, and consistency of implementation.

The ranking demonstrates that the sustainability of rural development interventions depends on practical implementation arrangements. Farmers may benefit from facilities and technical support but still encounter obstacles when participation requires travel, financial resources are limited, and directives change over time. A Theory of Change perspective helps explain this pattern: weaknesses in inputs and implementation processes can interrupt the expected pathway from support services to productivity and livelihood outcomes. Stronger local coordination, accessible financial services, continuing monitoring, and flexible training delivery are therefore necessary to sustain the project's gains.

Table 6. *Ranked Challenges Encountered in Project ConVERGE Implementation*

Challenge	Total Score	Rank
Limited time to participate outside Camiguin	516	1
Lack of financial support	528	2
Changing directives	548	3
Sustainability of the project	554	4
Climate change and disasters	567	5.5
Limited monitoring	567	5.5
Difficulty in submitting reports	577	7
Lack of information	581	8
Coordination issues between national and local offices	600	9
Limited participation in trainings within Camiguin	627	10

Note. A lower total score indicates a more pressing challenge.

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CONCLUSION

The findings show that Project ConVERGE contributed to the revitalization of abaca farming in Camiguin Province. The program was implemented to a moderate extent, with visible strengths in storage and processing infrastructure, planting-material provision, technical guidance, fiber-quality support, and buyer linkages. These interventions were reflected in the generally positive five-year productivity trend, particularly in fiber production, harvesting performance, extracted fiber, fiber quality, and abaca income.

The benefits of the project were not experienced uniformly. Significant differences according to age and income indicate that the capacity to benefit from interventions is influenced by farmer circumstances. The absence of significant differences according to sex and number of trainings attended suggests that participation in training alone does not resolve broader structural barriers. Financial access, road infrastructure, local funding, monitoring, and stable directives remain important concerns.

Project ConVERGE demonstrates the value of an integrated rural-development approach that combines productive assets, institutional partnerships, technical assistance, and organized marketing. Sustaining its gains requires continued support beyond the provision of facilities. Locally accessible services, responsive monitoring, financial inclusion, and climate-resilient production strategies are needed to strengthen the long-term productivity and livelihood security of abaca farmers.

Recommendations

DAR should strengthen post-project monitoring, provide continuous technical assistance, and improve access to credit, subsidies, financial-literacy activities, and locally accessible capacity-building sessions. Flexible schedules and on-site delivery should be prioritized to reduce the travel burden experienced by farmers.

The Department of Agriculture and concerned local government units should improve the provision of suitable farm inputs, equipment maintenance support, solar dryers, and farm-to-market roads. Climate-resilient planting materials and pest- and disease-management support should be incorporated into regular assistance because weather disturbances and production risks affect the sustainability of abaca farming.

The Department of Trade and Industry and partner institutions should expand market-development assistance by connecting farmer organizations with additional buyers, supporting product-development opportunities, and strengthening marketing and entrepreneurship skills. Existing buyer linkages should be complemented by efforts to diversify markets and improve farmers' negotiating capacity.

Agrarian Reform Beneficiary Organizations should strengthen transparent management of inputs and facilities, maintain accurate records, support fair distribution mechanisms, and assist members in accessing finance. Future researchers should examine the long-term effects of value-chain interventions, technology adoption, climate resilience, cooperative governance, and household-level welfare outcomes using broader geographic coverage and longitudinal designs.

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