

Original Article

# Roadmap of the Inabëg Weaving Industry: The One Town, One Product (OTOP) Program of Buhi, Camarines Sur

Rosemarie V. Dela Trinidad 

## Author Information:

Department of Trade & Industry –  
Camarines Sur Provincial Office, Naga City,  
Camarines Sur, Philippines

University of Nueva Caceres, Naga City,  
Camarines Sur, Philippines

Correspondence:  
[rosemariedelatrinidad@dti.gov.ph](mailto:rosemariedelatrinidad@dti.gov.ph)

## Article History:

Date received: February 20, 2026  
Date revised: March 13, 2026  
Date accepted: March 25, 2026

## Recommended citation:

Dela Trinidad, R. (2026). Roadmap of the Inabëg weaving industry: The One Town, One Product (OTOP) Program of Buhi, Camarines Sur. *Journal of Interdisciplinary Perspectives*, 4(4), 234-252.  
<https://doi.org/10.69569/jip.2026.084>

**Abstract.** This study examined the status of the Inabëg weaving industry in Buhi, Camarines Sur, identified its vision, constraints, opportunities, and assessed the existing and possible programs for the industry. It aimed to develop a proposed Inabëg Weaving Industry Roadmap aligned with the OTO Program. A qualitative-descriptive design was used, with data from interviews with government agencies, academic institutions, and LGU Buhi; focus group discussions; and documents, which were analyzed using thematic analysis. The findings revealed that the Inabëg, which was known as hinabol and rebranded in 2023, remains a significant cultural and economic activity. Moreover, it offers traditional and advanced weave designs across the wearables and homestyle categories, with local and national marketing. Key constraints include limited and costly raw materials, dependence on middlemen, labor-intensive production, declining youth interest, lack of marketing skills, low brand visibility, lack of standardized design and pricing, and insufficient capital. Despite these challenges, there were several opportunities, such as local fiber availability, potential for direct suppliers, mechanization, product development support, digital market expansion, integration into the tourism plan, access to financing, and institutional partnerships. Findings indicate that most active support programs were administered by government agencies, while others have no current projects in Inabëg but can offer potential support. Academic institutions contribute through research and development, and marketing support. The proposed roadmap outlines the industry's status, desired future state, and strategies to become an innovative, globally recognized weaving sector that preserves cultural heritage and empowers weavers.

**Keywords:** *Inabëg weaving industry; Handloom weaving; Industry roadmap; One Town, One Product (OTOP); Buhi, Camarines Sur; Challenges and opportunities.*

The handloom weaving industry is among the oldest forms of textile production worldwide, deeply embedded in cultural heritage and community identity. Despite its historical significance, the sector continues to face challenges arising from industrialization and technological advancement. The handloom sector in Sri Lanka remains sustainable, but its growth is constrained by structural barriers, including limited market access, inadequate information, and weak institutional support (Wanniarachchi et al., 2020). Similarly, initiatives like Geographical Indications (GI) and the Handloom Mark Scheme enhanced product authenticity and boosted export value (Mishra et al., 2022). In Pakistan, systematized training, provincial research centers, and

marketing activities, such as fairs and exhibitions, foster creativity and economic sustainability (H. Memon et al., 2022). The development of the handloom weaving industry in India is supported by direct and indirect measures from national organizations, such as the creation of the National Handloom Development Corporation and the Handloom Export Promotion Council, which protect weavers' interests and ensure fair market prices (Faruque & Islam, 2021). Institutional frameworks such as government-organized exhibitions and value-added tax exemptions are needed to boost the global competitiveness of these products (Sadikhov, 2024).

In the Philippines, however, the weaving industry faces pressing threats to its continuity. The decline in traditional weaving stems from the erosion of artisans' skills, modernization pressures, and limited market opportunities (Inovero et al., 2021). To counter these challenges, government agencies and private institutions have introduced programs to strengthen craftsmanship, encourage innovation, and ensure sustainability. In Camarines Sur, the Municipality of Buhi has declared Inabëg Weaving as its One Town, One Product (OTOP), transforming a household practice into a structured industry that contributes to both local economy and cultural identity. The OTOPE entrepreneurs in the province have been encouraged to collaborate with relevant stakeholders in strengthening strategic management and marketing initiatives, as well as to engage in benchmarking activities with other cities and municipalities to learn from established OTOPE best practices (Ramos & Ylagan, 2022). Despite government support, OTOPE enterprises continue to face operational challenges, including low production capacity, workforce reductions, difficulties in financial management, and sustaining operations amid rising production costs (Tadeo & Muralla, 2022).

While global and national literature has examined strategic roadmaps and institutional development in weaving industries, research specifically focused on Buhi's Inabëg weaving remains scarce. This study addresses that gap by presenting the first place-based, policy-oriented roadmap for the Inabëg weaving industry under the OTOPE Program. Unlike earlier works, it integrates cultural heritage preservation with enterprise development by systematically assessing constraints, opportunities, and institutional support mechanisms.

The purpose of this study is to provide a comprehensive understanding of the OTOPE-Inabëg weaving industry in Buhi, Camarines Sur. Specifically, it assessed the industry's current status across cultural identity, products, markets, MSME growth, job creation, and the Value Chain. It also identified its vision, constraints, and opportunities, examined existing and potential support programs, and proposed a roadmap aligned with OTOPE principles. Through this, the study seeks to revitalize the Inabëg weaving industry while promoting sustainable livelihoods, cultural preservation, and inclusive growth in line with national priorities and the Sustainable Development Goals.

## **Methodology**

### **Research Design**

This study used a qualitative-descriptive research design, which is appropriate for capturing the current state of the Inabëg Weaving Industry, its constraints and opportunities, its vision, and the support of various stakeholders. A qualitative descriptive approach is considered the design of choice for describing straightforward phenomena and producing rich, factual accounts of events and experiences (Lambert et al., 2012). This approach enabled the researcher to present a clear, accurate, and organized account of the experiences, programs, and projects, as well as the perspectives of the local weavers and industry stakeholders. Qualitative data were analyzed using thematic analysis. The researcher analyzed the interview, focus group transcripts, and documents using codes to identify recurring patterns that formed the foundation for their thematic analysis.

### **Research Participants**

The respondents in the study were selected through purposive sampling, a non-random method that relies on the researcher's judgement to identify individuals with relevant knowledge and experience in the Inabëg Weaving Industry. This method is appropriate, as the study focused on collecting qualitative data from key stakeholders directly involved in the development, support, and implementation of programs in the weaving sector in Buhi, Camarines Sur.

The interview with key informants was conducted with representatives from the Department of Trade & Industry - Camarines Sur Provincial Office (DTI) and the Local Government Unit of Buhi (LGU Buhi), both of whom play a crucial role in overseeing and promoting the local weaving industry. Additional interviews were carried out from partner government agencies such as the Department of Science & Technology, the Department of Labor

and Employment (DOLE), and the Technical Education Skills & Development Authority (TESDA), as well as from Academe, like the Camarines Sur Polytechnic Colleges (CSPC) and Bicol State College of Applied Sciences and Technology (BISCAST). These agencies and institutions were included to identify existing and potential programs, projects, and activities that may support the industry's sustainability and growth. Furthermore, a Focus Group Discussion was conducted with fifteen (15) selected Inabëg weavers from Buhi, Camarines Sur, who were also members of the Buhi OTOP Key Players Association. The weavers were selected for their active involvement and experience in weaving, enabling the study to capture their perspectives on current challenges and opportunities, as well as on the industry's future directions.

### **Research Instrument**

Data were collected through several qualitative methods, including interviews, focus group discussions, and document analysis, to ensure comprehensive and reliable findings. These methods were chosen to gather both primary and secondary data from various stakeholders, including government agencies, local weavers, and other supporting institutions. Structured interviews were used to gather data on the current state of the Inabëg Weaving Industry, with key informants from the DTI and LGU Buhi. Also, interviews were conducted to gather existing and potential Programs, Projects, and Activities from representatives of partner government agencies, such as the DTI, DOST, TESDA, DOLE, CSPC, and BISCAST.

A Focus Group Discussion (FGD) was also used with fifteen (15) selected Inabëg weavers in Buhi, Camarines Sur, to gather information on the challenges and opportunities of the weaving industry and to define the industry's vision. The discussion aims to examine the weaver's experiences, including issues related to materials, skills, tools, and markets, as well as potential areas for improvement and support. This study also employed document analysis to gather data on the current state of the weaving industry and the policies and programs that support it. Document analysis is defined as a systematic procedure for reviewing or evaluating documents, whether electronic or printed (Bowen, 2009). The documents analyzed included manuals, institutional reports, event programs, brochures, maps, and other publicly available documents from agencies such as DTI, LGU Buhi, DOST, TESDA, and DOLE. The researcher, as the primary analyst, assessed the credibility, relevance, and contribution of each document to ensure that the collected data directly supported the research objectives.

### **Data Gathering Procedure**

The Inabëg weaving industry roadmap was created through three data collection phases, which included key informant interviews with institutional partners, focus group discussions with weavers, and systematic document analysis. Data were collected in accordance with ethical standards, ensuring respectful and collaborative engagement with the Inabëg weaving community and other respondents. Before data collection, the researcher informed participants of the study's purpose and their rights, including confidentiality and the voluntary nature of their participation. To ensure the emotional well-being of respondents, the researcher instructed all participants, before the interviews and group discussions began, that if at any point they felt uncomfortable, they could leave the interview or group discussion. Debriefing was conducted with academic and industry partners and weavers to validate the data from the interviews and focus group discussions. An audit trail was also maintained documenting the data collection and coding process. The research findings were shared with the weaving community and its stakeholders to confirm that the participants had taken part in the research process and had received knowledge about its results.

### **Data Analysis Procedure**

The data gathered from interviews, focus group discussions, and document analysis were analyzed using thematic analysis (Lochmiller, 2021). Thematic analysis is a flexible, systematic method in qualitative research that identifies, organizes, and interprets meaningful patterns and themes within the data. This process involved several stages, including familiarizing with the data through repeated reading of transcripts, coding significant statements, and grouping similar codes to form overarching themes aligned with the study objectives. This process transformed the raw qualitative data into clear, organized findings that reflected the information, perceptions, experiences, and insights of the key stakeholders in the Inabëg Weaving Industry. Through this approach, the study ensured that the emerging themes accurately reflected the industry's status, challenges, opportunities, vision, and support. These provided a solid foundation for developing the roadmap.

### **Ethical Considerations**

The study was conducted responsibly, and the respondents' rights, welfare, and dignity were protected. All

respondents, including the Inabëg weavers, were informed of the study objectives, methods, and possible risks. This study also used Artificial Intelligence (AI) tools responsibly, with ethical considerations in place. AI was used for the literature review, data organization, content proofreading, and thematic analysis, without compromising the integrity or authenticity of the findings. All AI-generated outputs were carefully reviewed and validated by the researcher to maintain accuracy, transparency, and respect for participants' contributions.

## Results and Discussion

### Current Status of the Inabëg Weaving Industry in Camarines Sur

#### *Cultural Identity*

In the province of Camarines Sur, the Municipality of Buhi declared Handloom Weaving as its One Town, One Product (OTOP). Weaving is not just a form of art but a way of life for the native of Buhi. It is a century-old economic activity known locally as “hinabol” (Gerona, 2024). In the year 2023, the term hinabol was branded by their local term “Inabëg,” which was registered with the Intellectual Property Office as a Collective Mark of Buhi, as recommended by the Department of Trade and Industry, Camarines Sur Provincial Office, and in close collaboration with the Local Government Unit of Buhi through its organization, Buhi OTO Key Players Association. According to the DTI key informant, the collective mark shown in Figure 1 represents the handloom weaving tapestry of the “Inabëg” culture that flourished in Buhi. The square represents the main frame of the handweaving tool and the shape of handwoven cloth. The green vertical lines represent the threads on the horizon, which represent the beginnings of how a weave starts. The green line resembles a mountain, and the green straight line represents the lake, symbolizing Buhi as the heart of handweaving in Camarines Sur. At the center is the shuttle used in handloom weaving; it symbolizes a boat on Lake Buhi, which represents movement and growth. The blue patterns below the shuttle are a simplified tablero weaving pattern, distinct to Buhi, and also symbolize the water of Lake Buhi.



**Figure 1.** *Inabëg Collective Mark*  
Source: Buhi OTO Key Players Association

The collective mark registration of Inabëg indicates that the Local Government Unit of Buhi and DTI Camarines Sur aim to protect, sustain, and strengthen the identity of the Buhi weaving industry. This could be because the collective mark provides distinct branding that helps to make competitive products and promote the industry both locally and nationally. It is also possible that the revival of the “Inabëg” from the native “hinabol” aims to localize their brand identity and preserve the cultural heritage.

The findings suggest that the Inabëg Weaving Industry plays a significant role in sustaining cultural identity and enhancing local economic activity in Buhi. In addition, a collective mark indicates progress toward product standardization, thereby expanding market reach, protection, and the industry's sustainability. Moreover, it ensures authenticity and protects the distinctiveness of Buhi's weaving tradition. Moreover, the use of intellectual property protection in the form of a collective mark resonates with evidence that geographical indications protection can create substantial opportunities for the handloom sector by increasing sales, strengthening pricing power, and improving investment returns (Mishra et al., 2022). In this context, the Inabëg Collective Mark

represents an important step toward strengthening the brand identity of Inabëg weaving and ensuring the authenticity of its products in the national market.

This study recommends future initiatives to increase awareness of the collective mark through academic publications, tourism collaborations, and marketing platforms, thereby reinforcing the cultural identity of Inabëg weaving. This will ensure that the community's heritage remains visible and integrated into local development strategies.

**Products**

Handloom weaving in Buhi has evolved to meet the market's growing and changing needs. There were two types of weave design: the traditional weave and the advanced weave. The key informant from DTI added that some weavers have already adopted innovative approaches in their designs by integrating fresh patterns, motifs, and color combinations. According to the key informant, various wearable and homestyle products were produced from Inabëg textile. The traditional Inabëg products include towels, blankets, scarves, and table runners. However, with a growing focus on market-oriented product development, new and innovative items have been introduced, such as bed sheets and pillow cases, bags, wallets, neckties, slippers, shoes, accessories, headwears, bolero, kinomo, poncho, filipiniana, accents for shirts of men and women, and leis. The weavers also produce "sablay" (sash) used for graduation ceremonies, which various academic institutions order. At present, they have also ventured into creating Filipiniana attire made from Inabëg textile and incorporated it into contemporary fashion designs.



**Figure 2. Sample of Traditional Weave Patterns**  
Source: Hataw Handwoven Products & Buhi OTOP Key Players Association



**Figure 3. Sample of Advanced Weave Patterns**  
Source: Hataw Handwoven Products & Buhi OTOP Key Players Association



**Figure 4.** *Inabëg Products*  
 Source: Hataw Handwoven Products

The presence of both traditional and advanced weaving designs, as well as the creation of additional product lines, reflects the weavers' innovativeness and adaptability to consumer preferences. The existence of two kinds of weave designs demonstrates that the weavers maintain cultural authenticity while integrating innovation. This could be due to product development interventions by various government agencies. The diversification of products from traditional household items to wearable items illustrates their adaptation to market demands and suggests they are expanding their target market.

The study further indicates that Inabëg weaving has shifted from traditional household products to innovative product lines, including apparel, accessories, and Filipiniana attire. This transition suggested that the weavers are responding to evolving market trends and preferences and are utilizing the product development assistance prototypes provided by DTI. Furthermore, the integration of Inabëg textiles into modern fashion designs and Filipiniana uniforms for NGAs, LGUs, and academic institutions shows a significant market opportunity for the product. These traditional textiles are rooted in strong cultural values (Parameswara et al., 2022). Moreover, innovation in weaving is vital to ensuring its lasting legacy, and partnerships with government agencies and universities are important for developing new market-oriented products (Casimiro et al., 2024). These woven products continue to evolve through functional and aesthetic applications in contemporary living (Hidayani, 2024).

This study recommends ongoing collaboration with National Government Agencies and the local government unit to conduct product development activities that will produce more market-oriented products. Moreover, it encourages weavers to further develop advanced weaving designs and explore new patterns and color combinations that align with current market trends. They may also explore other wearable and homestyle items that are both functional and aesthetic.

### **Market**

The Inabëg products were sold in the domestic market, catering to buyers within the Municipality of Buhi, the province of Camarines Sur, the Bicol Region, and other parts of the Philippines, particularly Metro Manila. The customer base includes tourists, households, fashion designers, national government agencies (NGAs), and local government units (LGUs). According to one of the key informants, *"May mga local designs sa Camarines Sur na ginagamit ang Inabëg Textile sa kanilang mga creations"* (There are local designers in Camarines Sur who use Inabëg textile in their creations). NGA and LGUs procure these products for their uniforms, particularly the Filipiniana attire, which is required every Monday for all government employees. These are given as tokens and distributed by private institutions, NGOs, and LGUs. These products are also available at various pasalubong and OTOP shops, such as OTOP Hub-FSJ Pasalubong.

The Inabég products have established a broad domestic market, both locally and nationally. Its customer range illustrates the diverse demand for these products. The growing number of market channels, such as pasalubong shops, OTOP Hubs, and trade fair participation, may suggest an expanding market reach of Inabég products. Participation in trade fairs can increase brand awareness and reflect strategic efforts to expand the product's market reach and visibility. The findings indicated that the Inabég weaving industry combines the cultural heritage with market responsiveness. The use of Inabég textiles by local designers, their use as “sabláy” for academic ceremonies, and their use in Filipiniana attire for NGAs and LGUs indicate that the weaving craft is both culturally significant and adaptable to diverse market needs. The marketing activities demonstrate that Inabég products have established a growing market exposure and opportunity in both regional and national markets.

These handwoven products have significant market potential at both the national and international levels (Boruah, 2021; J. Memon et al., 2020). Furthermore, locally handwoven bags possess functional, cultural, aesthetic, and social value, which influence consumers’ repurchase intentions (Malinao et al., 2022). Consistent with these insights, woven fabrics are often purchased for cultural events, formal occasions, and personal appreciation, reflecting consumers’ valuation of their cultural meaning and craftsmanship (Mardatillah et al., 2020). These findings support the results of the present study, which indicate that Inabég products attract buyers due to their cultural significance and unique craftsmanship.

This study recommends intensifying the OTOP Program's marketing component to enhance market visibility and thereby increase weavers' income. Furthermore, market linkages should be strengthened by establishing partnerships with other fashion designers, souvenir shops, and institutional buyers to expand market coverage and increase sales. Moreover, the number of participating MSMEs during trade fairs should be increased. They may also consider joining international expositions or trade fairs to broaden their market reach.

**MSME Growth and Job Creation**

According to a key informant from LGU Buhi, there are approximately 200 weavers, most of whom are women. Most of these weavers are located in Barangay Lourdes and Sta. Justina, Buhi, Camarines Sur, most of whom lack business registration. In addition, there is no available official directory of the weavers in the municipality. Moreover, the number of DTI-registered assisted MSME weavers in Buhi is lower than the actual number of active weavers. Shown in Table 1 is the data on the DTI-assisted MSMEs and jobs generated from 2023 to 2025 (As of August). The number of MSMEs assisted increased from 32 in 2023 to 67 in both 2024 and 2025. Additionally, the number of jobs 74 generated increased from 89 in 2023 to 123 in 2024 and to 174 as of August 2025. These figures indicate a consistent growth in enterprise support and employment opportunities within the local weaving sector.

**Table 1.** DTI Assisted MSMEs & Jobs Generated from 2023 to 2025 (As of August)

Indicator	2023	2024	2025 (As of August)
MSME Assisted	32	67	67
Jobs Generated	89	123	174

Source: DTI Camarines Sur

The data on MSME growth and job creation indicate a steady increase in the number of assisted MSMEs and in employment generated from 2023 to 2025. This may be due to continuous support from DTI, LGU Buhi, and other partner institutions. However, the number of registered MSMEs, which is lower than the actual number of weavers, may indicate that some operate informally or require assistance with business registration. The findings suggest that, based on interviews and data collected, there are approximately 200 weavers, indicating that weaving remains a primary livelihood for many households in the town. Moreover, the industry is predominantly female, aligning the study with Sustainable Development Goal (SDG) 5 on gender equality and women's empowerment. The gap between the actual weavers and MSMEs highlights untapped potential within the sector and points to challenges in formalization, including limited awareness and resource constraints. Addressing this gap could enhance the industry's overall economic impact.

The findings of this study align with evidence from India and Pakistan, which shows that the weaving industry contributes to local employment and income generation for weaving communities (Boruah, 2021; J. Memon et al.,

2020; Rao, 2022). Similarly, the Inabëg weaving industry was found to contribute to poverty alleviation by creating employment opportunities in rural areas, consistent with previous findings (Boruah, 2021). Moreover, the predominance of women weavers observed in this study is also consistent with evidence that women constitute the majority of participants in the weaving sector (Rao, 2022).

This study recommends that the Local Government Unit, in collaboration with DTI and the Academe, gather data on the profiles of all the weavers in Buhi and develop a directory of active weavers. This will determine the approximate number of weavers and help them register their businesses, enabling them to access support programs from other stakeholders. This will help close the gap between the actual number of weavers and the registered MSMEs. Lastly, future research may focus on the economic impact of the Inabëg Weaving Industry.

### Value Chain

According to the informant, most weavers used thread cones (Astra) and upcycled shirt-cotton collars, whereas only a few used waterlily and abaca. These raw materials are sourced from two suppliers in Caloocan City: thread cones from Divisoria, Manila, and water lilies and abaca are sourced locally. The production stage comprises ten major activities: designing or selecting patterns; unraveling collars; yarn spinning; warping on a warping frame and threading; chain cast-on; handloom weaving; finishing by sewing or tasseling; converting into other products; and packaging. During the marketing stage, woven products are consolidated and displayed at pasalubong centers and at trade fairs. They are also sold through online platforms such as Facebook and Shopee, as well as through wholesale and retail channels. The final sale of woven products includes towels, blankets, accessories, scarves, pillowcases, neckties, bags and wallets, apparel, table runners, slippers or shoes, placemats, and sablay. The main buyers and users are tourists, households, designers, institutional buyers, national government agencies (NGAs), local government units (LGUs), the National Grid Corporation of the Philippines (NGCP), the Department of Tourism (DOT), and academic institutions. The enablers supporting each stage include the LGU, DTI, DOST, TESDA, DOLE, academe, NGOs, and financing institutions, which support textile studies, design, training, and enterprise development. Shown in Figure 5 is the Value Chain Map of Inabëg Weaving Industry from the DTI Camarines Sur. It illustrates the sequence from input provision to sale.



Figure 5. Inabëg Weaving Industry Value Chain Map  
Source: DTI Camarines Sur

In the value chain map, the dependence on two suppliers of upcycled shirt collars in Metro Manila could be due to limited contact with other raw material suppliers or a lack of direct linkage to the factories. The inclusion of multiple enablers, such as LGU Buhi, DTI, DOST, TESDA, Non-Government Organizations (NGOs), and academic institutions, may reflect the necessity of interagency collaboration to sustain the weaving industry.

As reflected in the value chain map and confirmed through the interview, the weavers are responding to evolving market trends and preferences. They are utilizing the product development assistance prototypes provided by DTI. Moreover, the production process relies heavily on raw materials sourced from Caloocan City and Divisoria, indicating a supply chain vulnerability stemming from the lack of locally available inputs. This indicates the need for intervention by DTI and LGU to link them to factories in Bulacan. The marketing of handloom fabrics is handled by various actors, including weavers, middlemen, and pasalubong shops (Dietrich Wielenga, 2020; Faruque & Islam, 2021).

Moreover, this study recommends exploring and identifying additional raw material suppliers to establish a sustainable supply of inputs. Direct sourcing from factories, facilitated by LGU Buhi and DTI Camarines Sur, can help reduce raw material costs by eliminating intermediaries. Moreover, this study recommends strengthening the relationship value chain enablers to support the effective implementation of the proposed roadmap.

## **Industry Vision, Constraints, and Opportunities of the Inabëg Weaving Industry**

### ***Industry Vision***

During the focused group discussion (FGD), the key informants were asked to write their individual vision for the future of Inabëg weaving industry. Some of the respondents' statements were, "*Idtong sumikat lalo na sa ibang bansa*" ("*One that is recognized especially in other countries*"), "*sustainable weaving industry*", "*preservation of cultural/traditional weaving practices*", "*5 years from now, makilala sa fashion industry*" ("*5 years from now, to be celebrated in the fashion industry*"). Their responses were consolidated and summarized to capture the group's collective vision.

Below is the vision crafted for the industry:

**Vision Statement:** "*To be a globally recognized weaving industry that thrives through innovation, preserves cultural heritage, and empowers local weavers.*"

The data revealed that the collective vision formulated during the focus group discussion reflects the stakeholders' strong aspiration to transform the Inabëg Weaving Industry into a globally recognized, sustainable industry that values both innovation and cultural preservation. The shared statements of respondents, such as "*to be known internationally*", "*sustainable weaving industry*", and "*preservation of traditional practices*", could mean that the stakeholders are not only aware of the potential of the industry globally but also mindful of the importance of maintaining and preserving the cultural heritage of the industry.

The findings of this study indicated that the weaving community envisions development that balances economic advancement and cultural preservation. This showed that the respondents not only perceive weaving as a livelihood but also as a form of expression and empowerment. Establishing a clear vision has been emphasized as a vital component of effective roadmapping (Contreras Medina et al., 2020; Koens et al., 2021; Okada et al., 2020). Consistent with this perspective, the present study used the stakeholders' collective vision as the foundation for formulating the Inabëg Weaving Industry Roadmap. This approach is further supported by evidence that a roadmap must be anchored in a clear vision to effectively facilitate collaboration and alignment among stakeholders (Koens et al., 2021).

Based on these findings, this study recommends that industry development plans be grounded in this vision. Moreover, the strategies should combine modernization to compete in international markets with the preservation of traditional weaving. Proposed industry programs should focus on developing innovative, marketable products. They should also focus on activities to increase brand and product visibility, both online and offline, to expand their market reach.

### ***Constraints***

The data gathered from the focus group discussion revealed the existing constraints of the Inabëg Weaving Industry. Table 2 summarizes the existing constraints of the Inabëg Weaving Industry, organized through a thematic analysis based on the Value Chain Map.

**Table 2.** Constraints of the Inabëg Weaving Industry

Theme	Constraints
Input Provision	<ul style="list-style-type: none"> <li>• Limited supplier of raw materials (upcycled cotton collars)</li> <li>• High cost of raw materials due to middlemen</li> <li>• Inconsistent thread colors and limited availability</li> </ul>
Production	<ul style="list-style-type: none"> <li>• Manual labor-intensive process, especially for unraveling and spinning of collars (e.g. one day to produce 2 kilos of unraveled thread from upcycled collars, depending on the skills and motivation)</li> <li>• Lack of interest in handloom weaving among younger generations</li> <li>• Dependence on traditional wooden handlooms</li> </ul>
Marketing	<ul style="list-style-type: none"> <li>• Lack of digital marketing skills among the weavers</li> <li>• Weak online visibility/ presence</li> <li>• Absence of Pasalubong Center in Buhi</li> <li>• Unavailability of Inabëg fabrics in local textile stores in Naga</li> <li>• Absence of standardized weave designs for wearable and homestyle products</li> <li>• Absence of standardized pricing and sizing of products</li> <li>• Low brand awareness for Inabëg Collective Mark compared to other traditional fabrics in the Philippines</li> </ul>
Final Sale & Others	<ul style="list-style-type: none"> <li>• Lack of product portfolio</li> <li>• Insufficient capital</li> <li>• Unable to join the government bidding due to a lack of PhilGEPS registration</li> </ul>

The data revealed that the industry has several constraints across its value chain. In the input provision, the industry relied on two middlemen-suppliers of upcycled collars, which may be attributed to limited capacity to source new suppliers and to their reliance on existing, familiar, and trusted suppliers. Likewise, this issue may stem from the difficulty of obtaining direct access to large factories in Bulacan, as one weaver testified, citing restrictions and the need for personal connections. Moreover, the high cost of raw materials could be attributable to sourcing through intermediaries, which adds costs relative to purchasing directly from the factory. In addition, the inconsistencies in thread color and limited availability may be connected to the limited number of suppliers they have. Furthermore, data from the production process indicate that the industry remains labor-intensive, with substantial time required to produce its products. In addition, declining interest among younger generations may be due to weaving being perceived as time-consuming and low-income. Moreover, the continued reliance on the traditional wooden handlooms may preserve cultural practices. However, it may result in slower production, limited output, design variation, and greater susceptibility to damage than metal handlooms. From a marketing perspective, the findings indicate that the industry may be struggling with visibility and market positioning. The lack of digital marketing skills and a weak online presence could limit its reach among broader audiences, particularly compared with more established traditional fabrics such as Inabel and T'nalak. This may be due to limited brand exposure and the absence of industry-wide marketing plans. The unavailability of Inabëg fabrics in commercial centers such as Naga hinders existing buyers in Naga City from purchasing them. Also, the absence of the Pasalubong Center in Buhi could reduce its market visibility. In addition, the lack of standardized weave designs, product sizes, and pricing structures could lead to inconsistent product identity and hinder the product's competitiveness and access to export markets. Lastly, the industry may be experiencing growth constraints due to an insufficient product portfolio, insufficient capital, and an inability to participate in government procurement. These barriers could restrict their access to institutional buyers.

The findings of this study indicated that weaving faces several constraints rooted in its traditional production process, limited raw material sources, limited brand and market access, and weak institutional linkages. The results showed that reliance on a middleman for thread suppliers increases production costs and limits color options. The labor-intensive unravelling and spinning processes constrain efficiency and productivity, discouraging the younger generation from engaging in weaving. Weaver's statement, such as "*Depende po yan sa kakayananan, kung mabilis ka magpuron*" ("it depends on the ability and how fast you can spin") and "*Ang mga kabataan kasi ngayon mas gusto ninda mag gadget*" ("The youth today prefer to use gadgets"), suggests that the lack of modern equipment affects both productivity and interest among the younger generation. This means that, because weaving still relies on manual labor, weavers prefer other work or activities, leading to fewer individuals engaging in the traditional Inabëg weaving over time. Moreover, this study revealed that, despite the presence of the collective mark, the industry lacks brand visibility and promotional strategies, which is why it remains unfamiliar

to many consumers. This implies that it should be supported by strong marketing and branding initiatives to increase brand visibility and consumer awareness. Nonetheless, the absence of standardized weave designs, pricing, and sizing for wearable and homestyle Inabëg products indicates a lack of uniformity and consistency, which may later affect product quality, brand image, and competitiveness and marketability. Apart from that, limited capital and the inability to participate in government bidding due to a lack of PhilGEPS registration highlight the industry's financial and administrative constraints, which limit its market growth and potential. These challenges indicate the need to strengthen financial capacity and ensure compliance with government requirements to access broader market opportunities.

High raw material costs remain a major challenge in the weaving industry, consistent with previous findings (Boruah, 2021). Moreover, the results of this study align with evidence that low productivity in the weaving industry is largely attributed to the lack of capacity upgrading, continued reliance on manual labor, and limited access to modern equipment and technological resources (Casimiro et al., 2024; Memon et al., 2020). A declining interest among the younger generation has also been widely observed, driven by generational gaps, shifting career preferences, and the perception that weaving offers limited livelihood opportunities, particularly for low-income individuals (Alauya, 2021; Boruah, 2021; Inovero et al., 2021; Wanniarachchi et al., 2020). In addition, the low level of digital presence and weak brand visibility identified in this study are consistent with findings that many weaving communities in the Philippines exhibit low brand awareness and limited digital marketing engagement, which constrain industry growth (Casimiro et al., 2024; Malinao, 2025). Furthermore, the challenge of limited capital remains persistent across weaving communities, as similarly reported in other studies, which identified insufficient financial resources as a major barrier to productivity, innovation, and expansion within the industry (Boruah, 2021; Casimiro et al., 2024).

This study recommends the following strategies to address the industry's identified constraints. First, the creation of a Technical Working Group for the Inabëg Weaving Industry to strengthen institutional synergy and develop plans to address the Industry's problems. To address challenges in input provision, DTI Camarines Sur and LGU Buhi are recommended to coordinate directly with factories in Bulacan. They can facilitate partnerships that enable weavers to source upcycled collars directly from factories and negotiate specific requirements, such as color preferences. By doing so, the cost of raw materials can be reduced, as they will be freed from intermediaries. Also, DOST and the academe can assist by conducting research on alternative raw materials. They can establish a local fiber database and, in collaboration with DOST or DTI, set up a facility to process fibers into usable threads for weaving and apparel production. This initiative would help ensure a sustainable and accessible material source for the industry. In the production process, the industry should focus on increasing youth engagement in handloom weaving. This can be achieved by integrating weaving in the school curriculum at BISCAS and CSPC, and by offering it as an elective course in both basic and higher education institutions. Moreover, weaving skills training can be organized for out-of-school youth. To increase the number of active weavers, they can conduct training in each barangay to raise awareness and build the women's capacity, especially solo parents who need a livelihood for their families. Additionally, they can partner with the academic community to develop a website and product portfolio that will increase their brand visibility. LGU Buhi can also establish a Pasalubong Shop or an OTOP Hub, both of which are components of the OTOP Philippines Act. This hub will serve as a venue to promote and showcase locally made OTOP products to both tourists and other potential buyers. In addition, the LGU can include an Inabëg Heritage section in their local museum to preserve and showcase the rich weaving history. They may also develop a coffee table book showcasing stories, products, and the evolution of Inabëg.

Furthermore, the LGU can organize an annual Inabëg Festival and Weaving Competition, in partnership with DTI, to celebrate the weaving tradition, showcase weavers' skills, and further inspire the younger generation to continue the tradition. Similarly, DTI and LGU Buhi are recommended to continue implementing and expanding their other OTOP-related activities, such as trade fair participation and participation in international exhibitions. Fashion shows can be held annually in partnership with renowned designers, such as Avel Bacudio, from Buhi. Linkages with well-known brands can be established to increase visibility and market value. Finally, to address the challenges under the final sale and other concerns, weavers should be assisted in PhilGEPS registration to enable them to participate in government procurement opportunities. The Small Business Corporations (SB Corp) financing programs under DTI may be promoted to help them access capital for expansion.

### ***Opportunities***

The data gathered from the focus group discussion identified the current opportunities of the Inabëg Weaving

Industry. Table 3 summarizes the current opportunities of the Inabëg Weaving Industry, organized through thematic analysis based on the industry's value chain map.

**Table 3. Opportunities of the Inabëg Weaving Industry**

Theme	Opportunities
Input Provision	<ul style="list-style-type: none"> <li>• Availability of local fibers and trusted suppliers</li> <li>• Potential for direct supplier partnerships</li> </ul>
Production	<ul style="list-style-type: none"> <li>• Possibility of mechanized unravelling and spinning</li> <li>• Possible collaboration with the academe for time and motion study and efficiency improvement for weaving</li> <li>• Possible assistance of DTI under the Shared Service Facility (SSF) Program</li> </ul>
Marketing	<ul style="list-style-type: none"> <li>• Market expansion through the use of digital marketing platforms (TikTok, Shopee, Instagram, Facebook, and Amazon)</li> <li>• Collaboration with the academe for website development</li> <li>• Inclusion of Inabëg in the Tourism Development Plan</li> <li>• Availability of Product Development Activities of NGAs and Research and Development of Academe</li> <li>• Potential linkages with well-known brands like Bench, Kamiseta, and specialty shops</li> </ul>
Final Sale & Others	<ul style="list-style-type: none"> <li>• Collaborations among LGUs, NGA,s and the academe for sustainability</li> <li>• Available loan facility for MSMEs of the Small Business Corporation</li> <li>• Existence of Municipal Ordinance 24-301 Declaring Inabëg as OTOP of Buhi, Approving Its implementing Rules and Regulations, and Allocating Funds Thereof</li> </ul>

The data revealed that the presence of alternative local fibers, such as abaca and water hyacinth, could provide opportunities for raw material diversification and localization. With the support of DTI Camarines Sur and the LGU of Buhi, it may be possible to establish direct supplier linkages and reduce production costs in the long term. Moreover, their production process could be improved through collaboration with academic institutions to research mechanizing raveling and spinning. In addition, they may conduct a time-and-motion study of the actual weaving process to determine the duration of each stage and identify areas where production delays occur. Weavers may access assistance from DTI under the Shared Service Facility Program, which may help improve their productivity by providing modern equipment that enables faster, more efficient production. From a marketing perspective, it is possible to expand its market reach through digital platforms such as TikTok, Amazon, Shopee, and Facebook. Additionally, a potential partnership with academic institutions for the website and product portfolio could increase its brand visibility and improve sales performance. The weavers may benefit from product development activities under the OTOP Program and academic research to create innovative, market-oriented products that can strengthen brand identity and attract a wider customer base. Establishing linkages with well-known brands like Bench and Kamiseta may create sustainable marketing channels and increase its commercial visibility nationwide. Weavers may avail themselves of the Small Business Corporation's online loan facility program to address their capital constraints. The Municipal Ordinance for OTOP could support the industry's sustainability through its development projects, with allocated funding. Lastly, stakeholder collaboration could play a vital role in addressing these gaps.

The findings of this study indicated that the weaving has potential for sustainable growth through innovation, research, and collaboration. The study suggested that they may use available digital marketing platforms and explore potential collaboration with the academic community for website development, which could be a practical project for students. Additionally, the inclusion of Inabëg Weaving in the Tourism Development Plan of LGU Buhi presents an opportunity to promote the industry through OTOP marketing activities, such as trade fairs, weaving demonstrations, and other tourism-related initiatives, thereby highlighting its cultural heritage. The potential linkage with well-known brands such as Bench, Kamiseta, and other specialty shops presents valuable opportunities for market expansion and co-branding. The availability of product development programs, particularly under the OTOP Program, and the potential for research and development initiatives by academic institutions create opportunities to develop new marketable products, which may increase weavers' sales. Through collaborative efforts, academic institutions can help establish design standards and develop market-oriented, innovative products. Weavers may avail themselves of the Small Business Corporation's online loan facility program. The presence of collaborative programs among LGUs, national government agencies, and

academic institutions offers pathways to sustainability through shared resources, technical assistance, and capacity-building initiatives. Lastly, the enactment of a Municipal Ordinance for Inabëg as an OTOP of Buhi demonstrates strong institutional support and allocates funds for its implementation and ongoing development.

Opportunities for adopting digital marketing and computer-aided design (CAD) through collaboration with academic institutions were also identified in this study, consistent with previous research emphasizing the role of technology in enhancing design innovation, improving production efficiency, and expanding market reach (Concepcion et al., 2023; Memon et al., 2022). Unlike earlier findings highlighting the lack of government support and its demotivating effect on the weaving industry (Memon et al., 2020), this study found that several government agencies now provide interventions and policy support to develop and sustain the industry. However, consistent with evidence from recent studies, these interventions have not fully addressed the structural and operational barriers that continue to hinder the full development of the weaving industry (Casimiro et al., 2024).

With these findings, this study recommends leveraging available resources, government support, and collaborative opportunities to strengthen its raw materials supply, improve production efficiency, expand market reach, and ensure industry sustainability. It is recommended that a designated barangay in Buhi, with available raw materials such as abaca and water hyacinth, be developed as a livelihood hub focused on processing these materials. This approach will enable weavers to focus on weaving while a community prepares the raw materials. Consequently, this strategy could create additional livelihood opportunities while ensuring a reliable, sustainable supply for the industry. Furthermore, a collaborative partnership with academic institutions can be explored to mechanize the unravelling and spinning processes. These institutions can also conduct a time-and-motion study to improve weaving process efficiency. Weavers may also take advantage of DTI's Shared Service Facility (SSF) Program to access upgraded equipment and training. To support market expansion, this study recommends leveraging existing digital marketing platforms. Facebook, Instagram, and TikTok accounts can be created for the Inabëg Brand to be operated by the Buhi OTOP Key Players Association, with assistance from LGU Buhi and DTI. Furthermore, DTI may assist the industry in marketing the Inabëg products through Shopee, TikTok Shop, and Amazon. In addition, a collaborative project with academic institutions can be undertaken to develop the website and further promote Inabëg products. Moreover, as part of the Tourism Development Plan of LGU Buhi, it is recommended that an Inabëg Showroom and Cultural Gallery be established within the local museum and that the Annual Inabëg Festival be conducted, which may include fashion shows and weaving competitions. Additionally, they may collaborate with the Department of Tourism to feature Inabëg textiles in tourism promotion programs and cultural showcases. These will attract tourists and raise awareness of the industry. Weavers should actively participate in product development activities offered by NGAs, such as DTI, and in research and development conducted by academic institutions to create more innovative and marketable products. Collaborative efforts among LGU Buhi, National Government Agencies, and academic institutions are encouraged to ensure the development and sustainability of the traditional weaving. Weavers may avail themselves of the Small Business Corporation's online loan facility program. However, for weavers who may encounter difficulties completing the online application, assistance may be requested from the DTI Negosyo Center in Buhi, which can facilitate their registration and the online submission of requirements. Lastly, the study recommends that the Local Government Unit of Buhi use the roadmap as the basis for prioritizing and funding activities within its mandate. This may be supported by the approved Municipal Order 24-301, which allocates resources to the development and promotion of the Inabëg Weaving Industry.

### **Existing and Possible Programs, Projects, and Activities (PPAs) of Various Organizations Supporting the Weaving Industry**

The data show that, among national government agencies, only the Department of Trade & Industry (DTI) and the Department of Science and Technology (DOST) have existing programs for the Inabëg Weaving Industry. As one of the DTI key informants said, *"We have been assisting the weavers even before the establishment of the OTOP program in 2006."* As added by the DTI key informant, *"We really make a point that Inabëg has a special place on every occasion. In fact, ang Feria de Camarines featuring Pustoriosa, ang pirmi dyan bida, Inabëg (the one that takes the spotlight is Inabëg)".* Several interventions under the OTOP program have been implemented, including product development activities aimed at creating market-driven, innovative products. From the homestyle products, they helped create various product lines, including recent ones such as accessories and apparel. Moreover, the agency has been organizing a series of trade fairs at which Inabëg products have been showcased. In 2022, they launched the Feria de Camarines featuring Pustoriosa, during which Inabëg products were also promoted and sold at

Robinsons Place, Naga City, Camarines Sur.

Furthermore, during the trade fair, the Pustoriosa Fashion Show was held, highlighting the Inabëg creations of local fashion designers such as Renee Llagas, Faridah Goh, Rommel Del Valle, Alex Buena, Bert Salvador, Julix Temperante, Mark James Portugal, Juan Conde, and Jerome Villanueva. This fashion show is in partnership with various organizations, whose members also served as the models and Inabëg Brand Ambassadors. These partners were the Camarines Sur Chamber of Commerce and Industry (CSCCI), Zonta Club of Naga and Camarines Sur, Metro Naga Chamber of Commerce and Industry (MNCCI), and the Bankers Association of Camarines Sur. Inc. (BACSI), local chief executives, provincial board members, and other public officials joined the advocacy.

On the production side, the agency also provides metal handlooms through the Shared Service Facility (SSF) Program. Furthermore, the agency will continue to implement its OTOP Program for the coming years. However, their informant highlighted that, *"We need cooperation, commitment, and enthusiasm in the heart of the weavers."* The DOST informant reported that they had already conducted training in traditional and advanced weaving for artisans in Buhi. They also provided the Handloom for Advanced weaving in partnership with the National Grid Corporation of the Philippines. Moreover, a training program on natural dye extraction and textile application was conducted on February 18-20, 2025, in partnership with various stakeholders. He added that they will establish a Natural Dye Hub at the Buhi Campus of Camarines Sur Polytechnic Colleges (CSPC), in partnership with the Department of Science and Technology - Philippine Textile Research Institute and the Camarines Sur Polytechnic Colleges (CSPC).

Meanwhile, the Department of Labor and Employment (DOLE) - Camarines Sur and the Technical Education and Skills Development Authority (TESDA) - Camarines Sur have existing projects that the weavers can access. According to the DOLE informant, they can avail of their DILP, wherein she shared, *"Ang DOLE po igwang DOLE Integrated Livelihood program kun sain nagtatao po kita mga starters kits and ang maximum po per individual is P50,000 depende sa itataong equipment"* (*"DOLE has the DOLE Integrated Livelihood Program where we provide starter kits and the maximum amount per individual is P50,000, depending on the equipment to be provided"*). She added that, since there are many weavers, the project can be implemented through LGU Buhi, which will receive the downloaded funds and procure equipment for the weavers. For TESDA Camarines Sur, the National Certificate Level II for Handloom Weaving (Upright) and Handloom Weaving (Backstrap Loom) is not yet available in the province. However, these courses are available at other locations where they are currently offered.

Among academic institutions, Camarines Sur Polytechnic Colleges (CSPC) and Bicol State College of Applied Sciences and Technology (BISCAST) have existing research related to the Inabëg weaving Industry. In fact, one BISCAST alumnus used Inabëg fabric as an accent in their sustainable footwear creations. Moreover, they identified several possible projects and programs for the industry. For CSPC, the key informant said, *"Since si DTI will be providing us with an embroidery printing machine, saro po sa plano mi para ma enhance ang marketability kang product is customization by putting embroidered logo"* (*Since DTI will be providing us with an embroidery printing machine, one of our plans to enhance the marketability of the product is customization by adding embroidered logos*). She also added that the Inabëg products will be among the tokens for the guest and may be used as sablay during graduation. Moreover, given the marketing constraints of the weavers, the informant added that students undertaking capstone projects can assist them with website development, social media promotion, and product portfolio creation. Meanwhile, BISCAST also assists the industry by conducting research and studies to improve the weaving process. The informant added that, to mechanize the unravelling and spinning processes, researchers will engage with weavers to observe the weaving process. This will also be done to conduct the study on improving the weaving process efficiency. Furthermore, they will assist in product development to create products that meet consumer needs.

The data revealed that support from National Government Agencies may be limited and concentrated on initiatives of the Department of Trade & Industry and the Department of Science & Technology. This may be because their mandates align with industry development. The active engagement of DTI through its OTOP Program suggests a strong commitment to the program's objectives of providing a package of assistance to MSMEs and promoting market-oriented, innovation-driven businesses to foster local economic growth. Meanwhile, DOST's interventions in advanced weaving and natural dye extraction may indicate the agency's focus on technological advancement and sustainability in textile production. The involvement of academic institutions such as CSPC and BISCAST could be a strong indication of growing interest in the education sector in bridging

the gap between academia and industry. Their proposed initiative could improve weaving process efficiency and strengthen the industry's competitiveness through strategic marketing initiatives. Additionally, LGU Buhi demonstrates strong support for Inabëg Weaving, as evidenced by its current and proposed municipal ordinances governing the industry and by a series of training and marketing activities under the OTOP Program. Moreover, the inclusion of Inabëg weaving in the Tourism Development Plan may reflect a strong commitment to promoting the industry while preserving its culture. Lastly, government-academic collaboration could mean that aligned interventions and the integration of technology and marketing strategies are essential to sustaining the Inabëg Weaving Industry.

The findings suggest that the collaborative approach to supporting the industry aligns with the principles of Sustainable Development Goal (SDG) 17, which emphasizes partnership and Goals, requiring inter-agency cooperation to foster innovation and improve market access. The statement from a DTI key informant, *"We really make it a point that Inabëg has a special place in every occasion,"* reinforces the commitment to preserving and promoting the weaving tradition as an OTOP of LGU Buhi. The yearly fashion show held as part of the Feria de Camarines, featuring Pustoriuosa, indicates strong support of the agency in promoting the Inabëg weaving industry. This initiative raises awareness among local designers in Camarines Sur and engages brand ambassadors who take pride in showcasing locally woven textiles during the fashion show. Moreover, the registration of the collective mark demonstrates the agency's and LGU Buhi's clear commitment to protecting the industry and establishing Inabëg as the recognized local brand for the weaving sector in Camarines Sur. The Natural Dye Hub is to be established in Buhi, which signifies DOST's involvement in the OTOP Program's implementation, specifically in its vital role in introducing innovation and improving the Industry's production process. However, the absence of DOLE and TESDA initiatives in the industry reveals a gap in livelihoods and in weavers' potential access to local certification. The statement from a DOLE informant on the availability of the DOLE Integrated Livelihood Program (DILP) suggests a potential intervention for the weaving industry that could be integrated into the roadmap. Meanwhile, the participation of the selected academic institutions signifies the growing engagement of the education sector, especially as partners in research and development, innovation, and marketing of its products. Additionally, it demonstrates their effort to produce meaningful studies that industry can use rather than keep in the library. Furthermore, the assistance provided by LGU Buhi aligns with the OTOP Program's implementation, which aims to promote its culturally rooted products through market competitiveness, innovation, and cultural brand identity. The creation of a Municipal Ordinance to include Inabëg weaving as an elective subject in schools ensures the transfer of traditional handloom weaving knowledge to the younger generation, thereby strengthening the sustainability of this industry.

This study is consistent with research emphasizing the critical role of institutions in supporting the weaving industry. The importance of government-led marketing activities is evident, as initiatives such as trade fairs, fashion shows, and market matching activities have been conducted to promote woven products, increase brand awareness, and enhance sales for weavers (Sadikhov, 2024). Similarly, the efforts of the Department of Trade and Industry and the local government unit of Buhi reflect this approach through various promotional activities aimed at strengthening market presence. The registration of the Inabëg Collective Mark in Buhi serves a parallel function to the Geographical Indication (GI) protection discussed in previous studies, as both mechanisms aim to safeguard authenticity, standardize production, and reinforce the cultural identity of traditional products (Mishra et al., 2022). Institutional interventions focused on innovation, continuous training, and education further support these efforts, aligning with findings that organized education and systematic capacity-building programs are vital for developing a sustainable and competitive weaving industry (Memon et al., 2022). The planned integration of Inabëg weaving as an elective subject is particularly significant in ensuring the intergenerational transmission of traditional skills. Moreover, the collaborative initiatives of the local government unit of Buhi and the Department of Trade and Industry parallel successful strategies documented in other contexts, where consistent promotional activities and structured education systems were identified as key drivers of industry sustainability (Memon et al., 2022). The plan to link weavers directly to manufacturing partners in Bulacan also aligns with evidence emphasizing the importance of protecting weavers' interests by reducing dependence on middlemen and strengthening their position within the value chain (Faruque, 2021).

Based on the findings, this study recommends stronger interagency collaboration among DTI, DOST, DOLE, TESDA, LGU Buhi, and the academe to strengthen the Inabëg Weaving Industry. Furthermore, DTI and DOST should continue implementing their OTOP-related initiatives and ensure effective monitoring to assess their impact and inform future interventions. Moreover, DOLE should include weavers in its livelihood program, DILP,

to provide starter equipment. Additionally, TESDA should offer NC II weaving within the province so that weavers no longer need to travel to other regions to obtain certification. Moreover, academic institutions should continue their research and development efforts not only to mechanize the weaving process but also to introduce innovations and develop new, market-oriented products that can be utilized by industry. Lastly, the Local Government Unit of Buhi should continue implementing its OTOP-related activities and strengthen policy support through local ordinances. Additionally, it should ensure that Inabëg weaving is included as an elective subject to preserve their traditional knowledge and increase youth interest in the weaving industry.

### **Roadmap of the Inabëg Weaving Industry Aligned with the OTOP Program**

Industry roadmapping is a strategic and systematic planning process that aligns an industry's goals, vision, and policy interventions with long-term growth and sustainability. It provides a structured, visual chronology of strategies, serving as a powerful, practical planning tool for organizations (Kerr et al., 2022). The proposed Roadmap for the Inabëg Weaving Industry was developed using the Input-Process-Output (IPO) framework and grounded in the study's findings. The roadmap serves as a strategic guide for sustaining and developing the Inabëg weaving Industry, aligning with the objectives and components of the One Town, One Product (OTOP) Program. It presents a strategic, long-term development plan aligned with the OTOP Program objectives. It has three components, such as "Where do we want to go?", "Where are we now?" and "How can we get there?" (Contreras-Medina et al., 2020). It is guided by the collective vision "to be a globally recognized weaving industry that thrives through innovation, preserves cultural heritage, and empowers local weavers."

This roadmap was formulated by using the findings to develop strategic interventions, represented by the acronym Inabëg, where each letter stands for a developmental strategy. Each component addresses challenges, leverages opportunities, and aligns with the major OTOP program components. The strategies are categorized by implementation timeframe: short-term (1-2 years), mid-term (3-5 years), and long-term (6-10 years). Below is the explanation of each letter in the Inabëg acronym:

#### ***I - Institutional Synergy for Industry Development***

This strategy is anchored in Section 10 of Republic Act No. 11960 (OTOP Philippines Act of 2023), which mandates the convergence of various agencies and institutions for the efficient use of resources. It promotes strong collaboration among agencies, including DTI (the lead implementing agency), DOST, DOLE, TESDA, LGU Buhi, and academic partners such as CSPC and BISCAS. Through this institutional synergy, these stakeholders will align their policies, programs, projects, and activities to strengthen and develop the Inabëg Weaving Industry.

#### ***N - Nurturing Innovation and Product Development***

In line with the OTOP component of product development, this strategy aims to create innovative products, enhance packaging, and improve product attributes, all driven by the market. It also aims to create new weaving patterns and motifs to diversify product lines. New weaving patterns will also develop. This strategy will be implemented in collaboration with various stakeholders, including DTI, LGU Buhi, and the academe, to support their industry research and development plans.

#### ***A - Advancement through Technology and Capacity Building***

As part of improving the human dimension of OTOP Philippines, this strategy focuses on strengthening weavers' capabilities through entrepreneurial seminars, skills training, and business counseling. Furthermore, this strategy incorporates technological advancements, given that the current process is highly labor-intensive. With support from various organizations and academic institutions, innovative technologies will be introduced to enhance the process's effectiveness. This strategy will not only enhance operational productivity but also strengthen the weavers' capacity to adapt to evolving industry standards and technological advancements.

#### ***B - Brand Promotion and Market Expansion***

Another OTOP component is market access and product promotion. Thus, this strategy will focus on continuously promoting Inabëg as a brand and increasing its market reach locally and internationally. It also addresses the industry's key challenge: the lack of a digital market presence. This strategy encourages participation in diverse marketing activities and establishes a robust digital presence in collaboration with government agencies, academic institutions, and other stakeholders. The short-term plan focuses on enhancing its visibility through trade fair participation, branding seminars, social media creation, and collaboration with CSPC to promote products. The proposed mid-term plan aims to further expand its market reach through digital marketing initiatives, the



Figure 6. Roadmap of Inabëg Weaving Industry

establishment of an OTOP Hub, the creation of a coffee table book, and a partnership with well-known brands. For the long-term plan, it is proposed that the industry expand its global reach by participating in international exhibitions, collaborating with DOT on cultural and tourism promotion, and marketing its products through global online platforms such as Amazon.

### ***E – Ensuring Sustainable Supply***

This strategy focuses on securing a stable, affordable supply of raw materials to strengthen the industry's production capacity and competitiveness. It addresses the challenge of input provision, which increases costs and affects product quality. This strategy will help improve product quality, increase production efficiency, and offer more competitive prices.

### ***G – Grooming Future Weavers***

This strategy emphasizes the importance of grooming the next generation of weavers. Its goal is to ensure the continuity of the Inabëg weaving tradition by inspiring youth to appreciate the beauty and importance of preserving their culture and to recognize its potential for livelihood opportunities.

## **Conclusion**

This study assessed the current status of the Inabëg weaving industry in Buhi, established its vision, and identified its constraints and opportunities. The study evaluated both current institutional support systems and future support options to create a roadmap aligned with the One Town One Product program.

The Inabëg weaving industry in Buhi, Camarines Sur, remains a culturally significant livelihood while gradually adapting to modern market demands. The registration of its collective mark reflects a strong institutional commitment to protect identity and enhance competitiveness. Creativity is evident in both traditional and modern designs, with expanding market channels reinforcing cultural relevance. Despite this progress, challenges persist: reliance on external raw materials, high production costs, weak online visibility, low brand awareness, and limited business formalization. Declining youth interest and labor-intensive processes further constrain growth. The absence of standardized designs, pricing, sufficient capital, and access to government procurement also hinders competitiveness. Nevertheless, the industry shows strong potential for sustainable development through innovation, product diversification, digital marketing, and interagency collaboration. Stakeholders envision transforming Inabëg weaving into a globally recognized enterprise that balances cultural preservation with economic growth. Current partnerships among DTI, DOST, LGU Buhi, and academic institutions exemplify SDG 17 on collaboration, while future involvement of DOLE and TESDA can further strengthen training, technology adoption, and market expansion.

This study provides a strategic guide for stakeholders of the Inabëg weaving industry, including National Government Agencies (NGAs), private institutions, MSMEs, and other players, to conduct unified activities aligned with the OTOP Program objectives. The proposed roadmap serves as a concrete development framework to enhance MSME growth, generate employment, particularly for women, strengthen enterprise competitiveness, and ultimately contribute to the economic development of Buhi and the Philippines while ensuring the sustainable preservation and commercialization of Buhi's cultural heritage.

Moreover, the study contributes to advancing several Sustainable Development Goals, particularly SDG 8 (Decent Work and Economic Growth) through employment generation and MSME development, SDG 5 (Gender Equality) by supporting women-led livelihood activities, and SDG 17 (Partnerships for the Goals) through multi-sectoral collaboration.

Future research may focus on conducting a quantitative impact assessment of the proposed Inabëg Industry Roadmap to measure its effects on MSME growth, income levels, employment generation, and market expansion over time. Future research may focus on the economic impact of the Inabëg Weaving Industry.

## **Contributions of Authors**

The author is responsible for writing the entire paper.

## **Funding**

No external funding was involved in the study.

## Conflict of Interests

No conflict of interest.

## Acknowledgment

The researcher extends sincere gratitude to all individuals and institutions who contributed to the successful completion of this study. In particular, deep appreciation is extended to the thesis adviser, Ms. Edna S. Tejada, Dean Florabel O. Nieva, and DTI CamSur Provincial Director Jay Percival S. Ablan for their invaluable guidance and support. The author likewise expresses heartfelt appreciation to the study's informants, especially the Inabëg Weavers, for generously sharing their time, knowledge, and experiences.

## References

- Alauya, C. (2021). A preliminary study on the Meranaw traditional Balod "Tie-Dye" technique in weaving. *Journal of Humanities and Social Sciences Studies*, 3(4), 33–45. <https://doi.org/10.32996/jhsss.2021.3.4.4>
- Boruah, R.R., Konwar, M., Yasmin, S.S., & Doley, S. (2021). Handloom and handloom industry: A review. *Indian Journal of Pure & Applied Biosciences*, 9(3), 136–139. <https://tinyurl.com/bdxx9xdr>
- Bowen, G. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), pp.27–40. <https://doi.org/10.3316/QRJ090207>
- Casimiro, J.A., Romualdo, K., & Santiago, V.S. (2025). Innovation strategies in traditional cultural expressions MSMEs in the Philippines: A case study. *Philippine Institute for Development Studies*. <https://doi.org/10.62986/dp2024.48>
- Concepcion, J., Vilbar, A., Camello, L.M., & Cabrera, C.L. (2023). Integrating CAD to university's social enterprise to promote local weavers' livelihood and traditional craft preservation. In: Kabassi, K., Mylonas, P., Caro, J. (eds) *Novel & Intelligent Digital Systems: Proceedings of the 3rd International Conference (NiDS)*. Lecture Notes in Networks and Systems, vol 783. Springer, Cham. [https://doi.org/10.1007/978-3-031-44097-7\\_30](https://doi.org/10.1007/978-3-031-44097-7_30)
- Contreras-Medina, D.I., Contreras-Medina, L.M., Pardo-Núñez, J., Olvera-Vargas, L.A., & Rodríguez-Peralta, C.M. (2020). Roadmapping as a driver for knowledge creation: A proposal for improving sustainable practices in the coffee supply chain from Chiapas, Mexico, using emerging technologies. *Sustainability*, 12(14), 5817. <https://doi.org/10.3390/su12145817>
- Dietrich Wielenga, K. (2020). Weaving histories. *British Academy*. <https://doi.org/10.5871/bacad/9780197266731.001.0001>
- Faruque, S., & Islam, B. (2021). Evolution of handloom weaving activity in India. *Journal of University of Shanghai for Science and Technology*, 23(09), 1069–1072. <https://doi.org/10.51201/IJUSST/21/09627>
- Gerona, D. (2024). El Pueblo de Buhí: A town by the lake. Copyright by Danilo M. Gerona and the Local Government Unit of Buhí.
- Hidayani, N. (2024). Cultural heritage preservation: The art of traditional weaving is applied not only in clothing. *Jurnal Impresi Indonesia*, 3(2), 128–138. <https://doi.org/10.58344/jii.v3i2.4636>
- Inovero, J., Salvador-Amores, A., & Pagaduan, J. (2021). Physiological aspects of Cordillera weaving in the Philippines. *Philippine Journal of Science*, 150(5). <https://tinyurl.com/k367ussc>
- Kerr, C. (2023). Presenting possibilities, plans, pathways, programmes: NASA's use of strategic roadmapping visuals. *Technology Analysis & Strategic Management*, 35(5), 538–557. <https://doi.org/10.1080/09537325.2021.1979209>
- Koens, K., Smit, B., & Melissen, F. (2021). Designing destinations for good: Using design roadmapping to support pro-active destination development. *Annals of Tourism Research*, 89, 103233. <https://doi.org/10.1016/j.annals.2021.103233>
- Lambert, V., & Lambert, C. (2012). Qualitative descriptive research: An acceptable design. *Pacific Rim International Journal of Nursing Research*, 16(4):255–256. <https://share.google/6KRqB05cBjwamdPT>
- Lochmiller, C. (2021). Conducting thematic analysis with qualitative data. *The Qualitative Report*. <https://doi.org/10.46743/2160-3715/2021.5008>
- Malinao, C.W. (2025). From tradition to innovation: Examining Ifugao's local weave products as One Town One Product – Next generation. *Masyarakat, Kebudayaan Dan Politik*, 38(2), 105–121. <https://doi.org/10.20473/mkp.V38I22025.105-121>
- Malinao, C.W.M., Imapi, S., Tindungan, F., & Napadawan, L. (2022). Repeat purchase intentions: Exploring the perceived values of locally-made hand-woven bags in Lagawe, Ifugao, Philippines. *IJEED (International Journal of Entrepreneurship and Business Development)*, 5(3), 536–544. <https://doi.org/10.29138/ijeed.v5i3.1853>
- Mardatillah, A., Rosmayani, & Ramadan, S.A. (2020). Sustainable competitive advantage of Riau Malay weaving industry based on local wisdom. *International Research Journal of Business Studies*, 13(3), 227–240. <https://doi.org/10.21632/irjbs.13.3.227-240>
- Memon, H., Ranathunga, G.M., Karunaratne, V.M., Wijayapala, S., & Niles, N. (2022). Sustainable textiles in the past "Wisdom of the past: Inherited weaving techniques are the pillars of sustainability in the handloom textile sector of Sri Lanka." *Sustainability*, 14(15), 9439. <https://doi.org/10.3390/su14159439>
- Memon, J.A., Aziz, A., & Qayyum, M. (2020). The rise and fall of Pakistan's textile industry: An analytical view. *European Journal of Business and Management*. <https://doi.org/10.7176/EJBM/12-12-12>
- MiShra, A., Mohapatra, C.K., Pattnaik, P.K., & Satpathy, S.P. (2022). Issues and challenges of the Indian handloom sector: A legal perspective. *Rupkatha Journal on Interdisciplinary Studies in Humanities*, 14(3). <https://doi.org/10.21659/rupkatha.v14n3.15>
- Okada, Y., Kishita, Y., Nomaguchi, Y., Yano, T., & Ohtomi, K. (2022). Backcasting-based method for designing roadmaps to achieve a sustainable future. *IEEE Transactions on Engineering Management*, 69(1), 168–178. <https://doi.org/10.1109/TEM.2020.3008444>
- Parameswara, A., Sankara, I.A.N., Utama, I.M.S., & Setyari, N.P.W. (2022). Exploring cultural value and its sustainability of Balinese handwoven textiles. *TEXTILE*, 21(1), 174–197. <https://doi.org/10.1080/14759756.2022.2043517>
- Ramos, E. C., & Ylagan, A. (2022). Key success factors and entrepreneurial orientation of one town one product in the province of Camarines Sur. *International Journal of Research Studies in Management*, 10(2). <https://doi.org/10.5861/ijrsm.2022.18>
- Rao, B. (2022). Sustainability and gender inequality within handloom value chains. *ECS Transactions*, 107(1), 15053–15069. <https://doi.org/10.1149/10701.15053ecst>
- Sadikhov, S. (2024). Possibilities of creating clusters in the weaving industry of the Republic of Azerbaijan. *Economics Entrepreneurship Management*, 11(1), 17–24. <https://doi.org/10.56318/eem2024.01.017>
- Tadeo, J., & Muralla, D. (2022). Opportunities and challenges of selected One Town One Product Enter-prises in selected towns of Cavite amidst pandemic. *International Journal of Multidisciplinary: Applied Business and Education Research*, 3(11), 2255–2265. <https://doi.org/10.11594/ijmaber.03.11.12>
- Wanniarachchi, T., Dissanayake, K., & Downs, C. (2020). Improving sustainability and encouraging innovation in traditional craft sectors: The case of the Sri Lankan handloom industry. *Research Journal of Textile and Apparel*, 24(2), 111–130. <https://doi.org/10.1108/RJTA-09-2019-0041>