



**Food and Agriculture
Organization of the
United Nations**

FIAA/C1183 (En)

**FAO
Fisheries and
Aquaculture Circular**

ISSN 2070-6065

**STRENGTHENING SMALL AQUACULTURE ENTREPRENEURS: THE CASE
OF A WOMEN'S ASSOCIATION IN THE PHILIPPINES**

STRENGTHENING SMALL AQUACULTURE ENTREPRENEURS: THE CASE OF A WOMEN'S ASSOCIATION IN THE PHILIPPINES

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Required citation:

Gonzal, A., Pongthanapanich, T. and Bueno, P. 2019. *Strengthening small aquaculture entrepreneurs: the case of a women's association in the Philippines*. FAO Fisheries and Aquaculture Circular No. 1183. Rome. FAO. 36 pp.

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ISBN 978-92-5-131544-6

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PREPARATION OF THIS DOCUMENT

This case study was conducted from September to November 2017. A draft report and a summary were prepared for the FAO training workshop on ‘Aquaculture Value Chain Development and Participation’ held on 14–16 November 2017 in Lingayen, Pangasinan, the Philippines. Immediate revisions on the draft report were based on the comments and suggestions from the workshop participants. Further revisions were made after ‘The Seventh Gender in Aquaculture and Fisheries Conference’ (GAF7) held at the Asian Institute of Technology in Thailand on 18–21 October 2018, in which the case study was presented.

The guideline for the case study including a draft outline were provided by Tipparat Pongthanapanich of FAO Rome. Advice and assistance on revising and organizing the draft report into a case study format were provided by Edgardo Valenzuela and Cristina Liamzon of the Overseas Filipinos Society for the Promotion of Economic Security (OFSPES). The case report was reviewed by Susana Siar of FAO Regional Office for Asia and the Pacific and Nianjun Shen of FAO Rome. Language edit was done by Pedro Bueno.

The interviews with persons that have direct and indirect roles with the subject of the case study, the Binmaley Rural Improvement Club (BRIC), were arranged and facilitated by Jennie Fernandez of the College of Fisheries of Pangasinan State University.

ABSTRACT

Carried out in September–November 2017, this case study of the Binmaley Rural Improvement Club (BRIC) illustrates the process of building organized producers' capacity to access markets or create a market for, and actively participate in the value chain of their products. It describes the relations of the association with the value chain actors that have a direct role in their farming and processing enterprises and the agencies that have provided assistance. The aim is to identify the factors that have enabled the small aquaculture producers' organization to become an effective actor in the value chain of their products. The case describes the history of the association and its organizational features. Special attention is given to the development of their processing venture from a few simple products to a variety of higher value product forms, and the evolution of their marketing strategy.

BRIC's relations with suppliers of materials for processing and with product buyers are underpinned by mutual trust. It has stimulated interest in the distribution and sale of their products from groceries and institutional buyers that include hotels, restaurants and schools. It has expanded its market to other provinces and the capital city, Manila. To avoid downtime and under-capacity in processing operation, the association needs to build a closer link with fresh milkfish (*bangus*) suppliers because of uncertainties in fish availability. Business arrangements would have to include assured fish delivery in volume, schedule and quality. This requires fish farmers to work out a production cycle, i.e. a pond preparation, stocking and harvesting schedule that matches the needs of BRIC as well as other fish processors.

The municipality has benefited from the BRIC milkfish processing project through the multiplier effect on the economy of higher earnings, more employment and from its being promoted as the 'Home of BRIC Processed Bangus'. The case also illustrates the role of organized and empowered women in earning additional family income and contributing to community development and, at the sector level, in aquaculture-based enterprise development and management. Their initiatives have stimulated a modest rural enterprise to aspire towards participation in the export market.

Government agencies have provided different types of services that include technology in farming and processing, equipment for processing, training and advice in enterprise management, financial management and product promotion, and, from the mass media, public information. A lesson from the government's provision of services is the importance of developing and delivering a support system that encourages farmers to organize and play a stronger role in the social and economic processes that impact on their livelihood, which empowers and keeps them in business, and enables them to earn a justifiable reward. With one caveat: without making them perennially reliant on subsidy.

Recommendations to enable small aquaculture entrepreneurs' effective participation in the value chain are derived and policy and technical support suggested to strengthen and empower them for effective and sustained participation in the value chain.

Keywords: value chain development, farmers' association, women in aquaculture, milkfish products, social enterprise

CONTENTS

	<i>Page</i>
PREPARATION OF THIS DOCUMENT	iii
ABSTRACT.....	iv
TABLES	vii
FIGURES.....	vii
ACKNOWLEDGEMENTS.....	viii
ABBREVIATIONS AND ACRONYMS.....	ix
1. INTRODUCTION	1
2. INDUSTRY BACKGROUND	2
3. CASE SETTING.....	3
3.1 Aquaculture in Pangasinan.....	3
3.2 Market for Pangasinan’s fresh and processed milkfish.....	3
4. CASE CHARACTERIZATION	4
4.1 History and development of the case association	4
4.2 Organizational features	6
4.3 Main activities of the association.....	7
4.3.1 Farming.....	7
4.3.2 Product value addition and processing.....	8
4.3.3 Marketing.....	9
5. PARTNERSHIP AND BUSSINESS RELATIONS.....	10
5.1 Input suppliers.....	10
5.2 Product buyers	10
5.3 Providers of support services.....	11
5.3.1 R and D, technology, extension	11
5.3.2 Regulations	12
5.3.3 Product development, promotion and marketing.....	12
5.3.4 Enterprise management.....	13
5.3.5 Public information.....	13
6. INITIATIVES OF THE ASSOCIATION.....	13
6.1 Business model	13
6.2 Product upgrading.....	13
6.3 Process upgrading	13
6.4 Functional upgrading	14
6.5 Chain upgrading.....	14
7. ACCOMPLISHMENTS AND IMPACTS	16
7.1 On members: income and entrepreneurship.....	17
7.2 On partners: additional business opportunities.....	17
7.3 On community: employment and community development.....	17

8. GAPS AND SOLUTIONS	17
8.1 In farm-input procurement.....	17
8.2 In farming.....	17
8.3 In processing.....	18
8.4 In product development	18
8.5 In value addition	18
8.6 In market and marketing	19
9. CONCLUSION.....	22
10. LESSONS IN EMPOWERING A SMALL FARMERS' ORGANIZATION FOR VALUE CHAIN PARTICIPATION	23
10.1 Generic.....	23
10.2 Specific to being an association of women.....	23
11. RECOMMENDATIONS.....	24
11.1 Action recommendations, addressed to associations, for enabling effective participation in the value chain.....	24
11.2 Policy and technical support for strengthening and empowering farmers' associations	25
REFERENCES	25

TABLES

Table 1. Wholesale and retail prices (PHP per kg) of fresh milkfish in local markets, October 2017 ...	4
Table 2. Regulatory requirements for fresh and frozen fishery products in the Philippines.....	12
Table 3. BRIC’s Business Model Canvas.....	15
Table 4. Prices of BRIC milkfish processed products (as of November 2017)	16

FIGURES

Figure 1. Wholesale (left) and retail (right) markets of milkfish in the Philippines	4
Figure 2. BRIC’s small-scale farming activities, ca 1991–1992	5
Figure 3. Seminar and training of BRIC’s members on milkfish handling, deboning and processing, 1998	6
Figure 4. Founding officers of BRIC	7
Figure 5. BRIC’s milkfish farm operation	7
Figure 6. BRIC’s new organization structure	9
Figure 7. BRIC’s competitive analysis	10
Figure 8. BRIC milkfish processed products (as of November 2017).....	16
Figure 9. BRIC’s new processing plant (left) and officers cum supervisors of specialized processing units (right).....	16
Figure 10. BRIC’s market framework under Porter’s five forces model.....	20
Figure 11. BRIC’s market analysis using SWOT framework.....	21

ACKNOWLEDGEMENTS

We are grateful to Jennifer Fernandez of the College of Fisheries, Pangasinan State University for coordinating the key informant interviews in Sual, Binmaley and Lingayen; all key informants, especially BRIC's president, Milagros Buenafe, Lowie Buenafe and other family members, and various members of BRIC for providing valuable information, opinion and insight on BRIC's history, development, struggles, achievements, and aspirations; Susan Santos and Regino Regpala of the Star Bangus Fry Aquamarine Hatchery for valuable information; the owner of Anak Dagat Farm, Alberto Cruz, and Hoseas Montevilla of HT Montevilla Farm for providing details of their commercial hatchery, nursery and live fish delivery operations. The owners of stalls in the wholesale and retail fish markets at Dagupan Consignacion and Binangonan Fish Port are also much appreciated. We thank Jairus Jesse M. Tubal, lecturer in Agribusiness at the Department of Agri-Management, College of Agriculture, Central Luzon State University for his kind assistance and Josrael Tiraña for the technical and photo documentation during the key informant interviews and visits to the farm and processing facility. Finally, we highly appreciate the improvements made on the manuscript by Edgardo Valenzuela and Cristina Liamzon of the Overseas Filipinos' Society for the Promotion of Economic Security (OFSPES).

ABBREVIATIONS AND ACRONYMS

BFAR	Bureau of Fisheries and Aquatic Resources
BRIC	Binmaley Rural Improvement Club
CLSU	Central Luzon State University
DOLE	Department of Labor and Employment
DOST	Department of Science and Technology
DTI	Department of Trade and Industry
FAO	Food and Agriculture Organization of the United Nations
FDA	Food and Drug Administration
GMP	Good manufacturing practices
HACCP	Hazard analysis and critical control points
LGUs	Local government units
MSMEs	Micro, small and medium enterprises
NIFTDC	National Integrated Fisheries Technology Development Center
PSA	Philippine Statistics Authority
PSU	Pangasinan State University
RICs	Rural improvement clubs
SSF	Shared service facility
SWOT	Strength, weakness, opportunities and threats
TESDA	Technology Education and Skills Development Authority

Unit of measure

USD 1 = Average of 50 Philippine Pesos (PHP) at time of study

1. INTRODUCTION

In aquaculture, the value chain is a way to describe the series of related enterprises or actors conducting activities to add value to a product from the production of inputs, to growing the fish, to processing and marketing, and on to the final sale to the consumer. Production is one of a number of links in the value chain. Each link includes a range of activities including sourcing inputs, producing the product, transforming it into a product form that has a demand, and selling the product to the next segment of the chain.

A value chain is supported by different service providers. They do not take ownership of the product but provide farmers with financial, technical and management advice, information, and other services that enable creating new markets, adding value to products, and facilitating their movement along the chain. Value chains are part of and influenced by the policy, regulatory, physical and socio-economic environments.

This case study examines the fish farming and fish processing enterprises of the Binmaley Rural Improvement Club (BRIC), a women's association in Binmaley Municipality of Pangasinan Province. The Club was formed under the Philippine government's programme to organize rural improvement clubs (RICs). BRIC's primary motive is profit although their farming and processing enterprises also created employment for their members and others. This study also describes their range of activities in a value chain perspective as an exercise in entrepreneurship that relates to their capacity to develop, organize and manage a business venture along with its risks in order to make a profit.

The aim of the case study is to identify and characterize the factors that have enabled a small farmers' association to become a more effective participant in the value chain of their products. Key informant interviews, farm visits, collection and analysis of archive data from BRIC, a desk study, and personal communications were carried out between September and November 2017. The relevant information from these activities were used in developing a descriptive analysis of the case.

This case study was intended to provide an actual example for the learning activities during the FAO training workshop on 'Aquaculture Value Chain Development and Participation' held on 14–16 November 2017 in Lingayen, Pangasinan, the Philippines.¹ It would illustrate the efforts of organized small producers to build their capacity to access and create a market for, and actively participate in the value chain of their products, and describe the relations between the association and the other value chain actors that have a direct role in their farming and processing operations (i.e. their business partners that include the suppliers of inputs and buyers of their products) and the institutional service providers particularly the government agencies and the mass media.

The case traces the history of the organization and describes its organizational features, the culture system followed in producing milkfish from fry to table-size fish, their progress in product value addition from simple forms to a variety of higher value products, and the evolution of their marketing strategy. The study explains how the association: (1) developed a strong partnership and good relations with suppliers of materials for fish processing (i.e. fresh milkfish to augment their own harvest and condiments for the processing of various product forms) to assure the ready availability of the materials, (2) forged good relations with its product buyers and traders, (3) stimulated interest in the distribution and sale of 'BRIC Seafood Products' from institutional buyers that include hotels, restaurants and schools, and expanded its provincial distribution chains and outlets, and (4) established linkages with the fish farm suppliers to assure ready input availability, quantity, and delivery and developed business relations that mutually benefited their partnerships.

The achievements of BRIC in milkfish farming and processing have been driven by numerous factors. A descriptive analysis of the role and contributions of its leadership, members, business partners, and

¹ The workshop report is available at www.fao.org/3/i9600en/I9600EN.pdf.

institutional providers of support services including the local community to the development and management of the association's enterprise can give a better understanding of how small enterprises can take part effectively in the value chain of their products. The study would help define ways to sharpen the competitive advantage of an association of small producers in their product's market and how it can create opportunities to generate mutual benefits with its business partners along the value chain.

While this study focuses on BRIC and the enterprises that have a direct role in their milkfish farming and processing activities and operations, it also describes the interventions from various service providers, mostly government agencies but also the mass media, and the contributions of these interventions to BRIC's growth and achievements. The role of business enterprises with operations that are closely related with the farming activities and food processing ventures of BRIC – i.e. the input suppliers and product buyers – were considered in the analysis. However, no comparison is made with other associations of farmers or with other milkfish processing enterprises in the province, whether under single proprietorship or corporate ownership.

2. INDUSTRY BACKGROUND

According to Fisheries Statistics of the Philippines, total aquaculture production in 2017 was 2.2 million tonnes or around half of the total fishery output (PSA, 2018). This generated PHP 100.7 billion or 41 percent of total fishery value. The three major aquaculture commodities were seaweed, milkfish and tilapia, contributing 63, 18 and 12 percent, respectively, to the total aquaculture output. Milkfish aquaculture contributed the largest share, by value, at 36 percent, followed by black tiger prawn at 23 percent, tilapia at 21 percent and seaweed at 13 percent. Milkfish output of the Philippines comes mainly from brackishwater pond culture. A significant volume is from marine cage culture, much of it from Pangasinan Province, which has a much larger marine cage culture than brackishwater culture output.

A historical account of the development of the country's milkfish aquaculture industry was written by Yap *et al.* (2007). Milkfish is the most important fish species farmed in the Philippines. It is cultivated in freshwater, brackishwater and marine environments. A number of milkfish production technologies have been developed to fit these three culture environments. Highlights of its development into a major farmed species are, briefly: In 1954, the modular system of culture was developed by aquaculture scientist Dr Saturnino Abesamis, who was a native of Pangasinan. This method optimizes pond utilization and natural food production and makes it possible to grow overlapping crops with the use of three progressively larger ponds. The system can produce two to four tonnes per ha per year instead of only 600 to 1 800 kg per ha, as was the norm then. Under an FAO-assisted project in the mid- to late 1960s, the Bureau of Fisheries and Aquatic Resources (BFAR) introduced the shallow water method of milkfish culture into the Philippines from Taiwan Province of China and became widely accepted by farmers (Fortes, 1984). Work at the University of the Philippines' Brackishwater Aquaculture Center in Leganes, Iloilo, in the late 1970s to early 1980s led to a better understanding of the problem of acid-sulfate soil and the development of a method of neutralizing pond acidity using natural chemical processes rather than merely applying lime. BFAR pioneered the development of fishpen culture in the 94 000-hectare-freshwater lake, Laguna de Bay, from 1965 to 1967 which led to its adoption by some small-scale operators during 1967–1971. In 1970, the Laguna Lake Development Authority's (LLDA) successful demonstration of the feasibility of a commercial venture sparked the development and rapid expansion of fishpen culture in Laguna de Bay, a freshwater lake.

BFAR's introduction of milkfish deboning in the 1970s paved the way to the development of processed products such as marinated, smoked frozen, deboned, milkfish belly, milkfish chunks, *bangus sisig* and others. Other products such as canned or in glass jars and in retortable pouches in various flavors followed. This was to meet the consumers' demand for other products of milkfish that come in a more convenient form and may not require further cooking. The delicate flavor of milkfish, which distinguishes it from other local species, created a demand for other product types, which helped create

a new market niche for milkfish products abroad. These products required more sophisticated equipment. As a consistent supplier of safe and high quality products in the world market over the past years, the Philippines milkfish exporters are now able to comply with the standards of food safety and quality assurance generally established by CODEX Alimentarius Commission as well as by those prescribed by the competent authorities of trading partners like the European Union, the United States of America, Australia, Canada and others.

3. CASE SETTING

3.1 Aquaculture in Pangasinan

Pangasinan Province, the third largest in the Philippines in land area, is a major fish supplier in Luzon. The crescent-shaped province occupies 536 818 hectares of land area, which constitutes almost one-half (42 percent) of the total land area of Region 1 (Ilocos) and 2 percent of the total area of the country. It comprises four cities and 44 municipalities. It has borders with six provinces and a long coastline. Agriculture and agro-industries are a major source of income for the majority of the population.² Through the years, as the demand for particular fish species rose and fell, farmers adapted by sticking to traditionally favoured species like milkfish, *malaga* or rabbitfish (*Siganus vermiculatus* and *Siganus guttatus*) and shrimp. With more than half of the province's labour force in agriculture, the current administration has seen the need to boost agro-industrial development.

Pangasinan is the top producing area of milkfish. In 2017, it produced 105 523 tonnes of milkfish or 26 percent of the country's total production. This was valued at PHP 11 billion or 11 percent of total value of aquaculture output (PSA, 2018). Around 70 percent of milkfish production in Pangasinan comes from marine cage culture and 20 percent from brackishwater ponds. Aquaculture in the province includes oyster and sea urchin farming. Salt production is also a major industry, an ancient tradition inspired by Egypt. The province derived its name from the local word for salt, *asin*; Pangasinan means the source of salt. Its rich and fine salt beds are a source of livelihood in coastal communities.

The members of BRIC describe their hometown, Binmaley, as a predominantly fish farming community. The municipality is known as the fishbowl of the province. It was the fifth highest producer of milkfish in the province based on the provincial government's record for 2014–2016. Milkfish aquaculture production elevated the economic status of Binmaley above most of the other 44 municipalities of the province. This achievement earned the municipality the title 'Bangus Queen of The Philippines'.

3.2 Market for Pangasinan's fresh and processed milkfish

Milkfish is the most popularly traded fish in the local market. The major landing site or wholesale market for farmed milkfish in the province is the Dagupan Consignacion locally called '*bagsakan*' (where things are unloaded) located in Dagupan city. Milkfish from around the province are packed in ice and loaded in trucks or stowed in refrigerated trucks for distribution to the major fishing port facilities and wholesale fish markets in nearby provinces and Manila. Milkfish and other marine products are also sold through the many stalls of distributors in the Dagupan Fish Port Complex.

Large volumes of milkfish from Dagupan Consignacion are forwarded to the Navotas Fish Port Complex, the central fish landing site of the country. This large complex is located in Navotas, Metro Manila. Other major milkfish producing provinces in Luzon also ship their harvests to the Navotas fish landing and trading complex through their local landing sites such as at Laguna de Bay for harvests from freshwater pen culture and Taal Lake for those from freshwater cage culture. Milkfish harvest volume and pricing are largely influenced by demands from Navotas.

² Refer to the official website of Pangasinan (<http://pangasinan.gov.ph/the-province/about-pangasinan/>)

Appraisal of current wholesale and retail prices of milkfish are presented in Table 1. Price differs with size, quality, volume being traded, and market demand. In fresh markets, vendors charge another PHP 15 per kg for deboning service. Occurrence of off-flavor during the drier and warmer months because of algal bloom, and urgent harvest during extreme weather events like typhoon are natural factors causing marketing problems and economic losses in the milkfish industry.

Table 1. Wholesale and retail prices (PHP per kg) of fresh milkfish in local markets, October 2017

Province/fish size	200–250 g/pc	300–500 g/pc	Over 600 g/pc
Wholesale			
Pangasinan	100	110	120
Batangas	93–98	105–107	110–113
Rizal	60–75	80–85	90–100
Retail			
Pangasinan	120	140	140
Batangas	100–110	120	130
Rizal	75–80	90–95	100–110



Figure 1. Wholesale (left) and retail (right) markets of milkfish in the Philippines

A wide range of product forms is sold in local markets. These include plain deboned milkfish, plain marinated deboned milkfish, smoked (*tinapa*) deboned milkfish, spring roll (*lumpiang shanghai bangus*), milkfish belly, bottled milkfish in oil, stuffed milkfish (*rellenong bangus*), milkfish bone candy (*polvoron*), milkfish fried skin (*chicharon bangus*) and a milkfish-flavored ice cream. The product forms sold to international markets are fresh frozen milkfish, plain deboned milkfish, marinated deboned milkfish, and belly (F. Lorezco, Department of Trade and Industry, personal communication, 2017).

4. CASE CHARACTERIZATION

4.1 History and development of the case association

The rural improvement clubs of the Philippines are non-government village (*barangay*)-based organizations. The programme started in 1953 under the Bureau of Agricultural Extension. The objectives of the clubs are to: (1) uplift the living condition of rural women, (2) enable participants to develop self-confidence and acquire skills that are essential to self-reliance, and (3) gain experience in a simple livelihood operation.

BRIC is a women's association under the RIC programme. It was organized in 1989 with support from the Local Government Unit (LGU). To the three RIC programme's objectives was added a fourth: "make the club an effective and productive partner of the government in community development".

Initially, the association's main activity was small-scale farming of milkfish (Figure 2). They gradually increased their membership from 15 at its founding to 120 in 2017. Noteworthy is their progressing from peddling the fresh harvest around the neighborhood to simple processing of their harvest (i.e. de-boned and marinated fish) sold in the local market and, eventually, to diversifying into higher value processed products and expanding their market to a variety of end markets in various provinces and Manila.



Figure 2. BRIC's small-scale farming activities, ca 1991–1992

Among the achievements of the association are improvement of family income and creation of more livelihood opportunities in the community. The members had acquired, from training programmes and participation in agricultural exhibitions, the knowledge and skills to process and operate a small processing plant (Figure 3). An essential equipment was provided under the Government's Department of Trade and Industry (DTI) programme for micro, small and medium enterprises (MSMEs) called 'shared service facility' (SSF). Processing was done in a plant initially with a capacity of 10 000 kg per month. The plant has expanded and undergone facility upgrade and became operational in early 2018. They manage both the farming and processing enterprises with technical assistance from various government agencies, including the LGU and the Pangasinan State University (PSU), a regional university whose fishery college is located in the municipality. They now purchase additional fish from other farms as well as traders in the area. They accredit the suppliers for reliability of supply and quality and safety of product.



Figure 3. Seminar and training of BRIC's members on milkfish handling, deboning and processing, 1998

BRIC has been featured as a success story in the print and broadcast media. They have received several recognition awards from the provincial and national governments for the “successful promotion of livelihood and sustainable development relevant to aquaculture”. They participate in local and national agri-business and trade exhibitions. The BRIC story also showcases the challenges and opportunities in empowering women in aquaculture.

4.2 Organizational features

Under the RIC structure, the association functions more as a social enterprise governed by the elected president and officers, assisted by LGU. Funds came from soft loans provided by the local government and a modest membership fee (this fee was later abolished and membership is now free).

Initial activities were in backyard scale nursery and grow-out of milkfish and sale of the harvest to the neighborhood. Revenue from milkfish farming was accounted appropriately and used to pay back loans and to top up the revolving fund. After taking a short training course, the members started home-based simple processing such as deboning, marinating and smoking of milkfish from the association's own farm and selling the products to friends and neighbors. Knowledge learned from the technical assistance agencies were shared among members through ‘echo’ seminars and training. These were meant to improve members' skills in fish processing and enterprise management. These improved the processing business as a whole. Trained members were also accorded priority use of the BRIC's processing facilities. From there, the association moved into more diversified milkfish processing activities. The members undertook more training to enhance knowledge and skills that improved the quality of their products.

A unique feature of the club is the continuous tenure of its leader since its founding. The president and the other pioneer members who also have remained as officers adhere to good management practices heavily infused with interpersonal relations. It may not be consistent with the democratic procedure of electing an association's leader, but the members' tacit acceptance or approval of the leader's continuing tenure, uninfluenced by coercion, has had some advantages. The club has a complete set of officers including an auditor and assistant auditor (Figure 4).

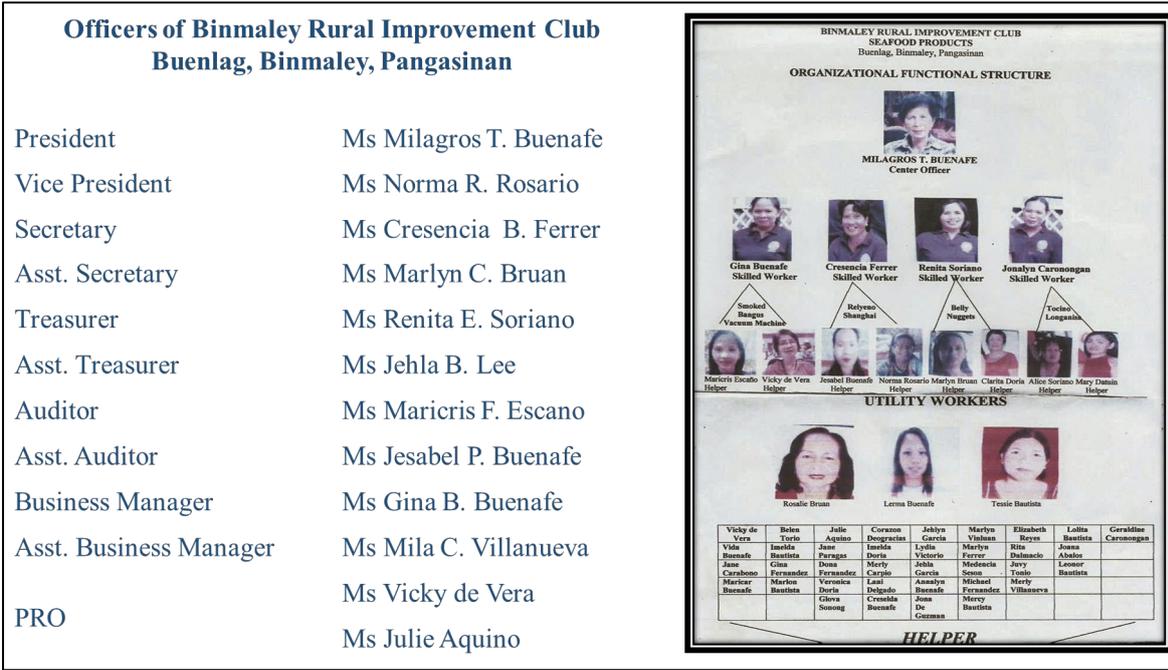


Figure 4. Founding officers of BRIC

4.3 Main activities of the association

4.3.1 Farming

The farming system followed by the association is illustrated in Figure 5. Milkfish fry from any of the three sources (Alsons in Sarangani Province in Mindanao, Indonesia, and a nearby private hatchery in Sual Municipality in Pangasinan) are purchased through a fish hatchery broker. The fry are delivered to the farm and stocked and reared in the nursery pond to fingerling size. The nursery pond is prepared to promote growth of natural food composed of algae, *lumot* (filamentous algae), *lab-lab* (a mat of zooplanktons and phytoplanktons) and detritus particles. There is no supplemental feeding on the first month. In succeeding months, the fish are given supplemental formulated diet (commercial feeds) until the desired fingerling size is attained.

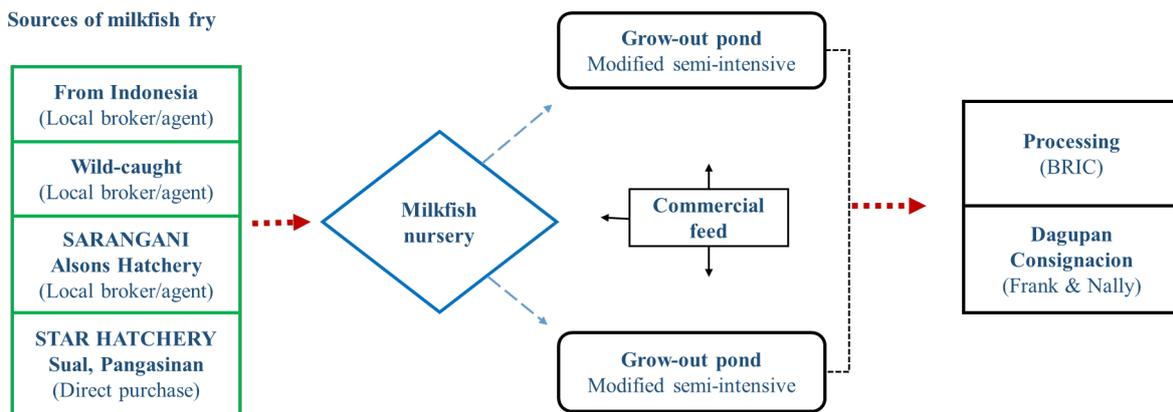


Figure 5. BRIC's milkfish farm operation

Simultaneous with fry-to-fingerling production in the nursery pond, is the preparation of the grow-out ponds for the production of the natural food. Devised by farmers, this innovative practice makes use of the natural food produced in pond supplemented with *lumot* (*Chaetomorpha linum* and *Buteromorpha*

intestinalis) (J. Fernandez, personal communication, 2017). The ponds are filled with water as soon as the natural food is growing in abundance. Fingerlings are counted and released into the grow-out ponds to graze on the natural food during the first phase of the grow-out period (two months) after which commercial feed is given until harvest (White *et al.*, 2018). This second phase of the grow-out period usually lasts for four months. This practice is called ‘modified semi-intensive culture system’. The natural food keeps feed cost down. Based on the survey conducted in Binmaley, a significant number of milkfish pond-farmers (40 percent) have adopted this system.

4.3.2 Product value addition and processing

To earn more from the harvest, the association diversified from peddling fresh milkfish into value addition through simple processing. Selected members undertook training in milkfish deboning under the BFAR Regional Fisheries Office in Region 1 and taught the skills to the other members. The group specialized in home-based milkfish deboning, marinating and smoking. They continue to sell whole fresh milkfish from the club’s small farm.

For product improvement and quality assurance, the more active and competent members were tasked to supervise groups of members that specialize in deboning, marinating or smoking. Additional training were undertaken on improvement of product quality. Encouraged by the results, mainly from higher earnings, of the simple and home-based processing, the association increased their output and expanded their market to other areas outside the community including neighboring provinces. Spurred by the government’s acknowledgement and the community’s appreciation of their achievements, the organization embarked on an accelerated programme of value addition and product promotion.

‘BRIC Seafood Products’ processing was established in 1998. Remarkably, they had zero starting capital. They purchased fresh milkfish on credit or deferred payment from local fish vendors and later from a wholesaler-retailer, Frank & Nally Consignacion. The small output of processed products was sold directly to neighbors or sold by members who went to nearby towns to hawk the processed products that they labelled ‘Delicious, Nutritious Food for Everyone’. Timely payment of all purchases on credit plus quality and safe products earned the trust of business partners (raw material and fresh fish suppliers) and customers. This was the modest beginning of the association’s milkfish processing enterprise.

Their earnings were placed in a revolving fund. When the fund was sufficient, they invested some of it in a small processing building on No. 68 Barangay Buenlag. The structure served as their production area for the, by then, more diverse processed products forms. The increasing demand and expanding market of these products became a leverage for the association to access facilities from government agencies through the SSF programme of the DTI, and processing tools and equipment from the Department of Science and Technology (DOST) and the regional office of BFAR in Region 1. Members were granted the use of the facilities at a minimal fee for maintenance and repair of the tools and equipment including sanitation of the processing area. With these, their processing capacity increased to 18 000 kg per month.

To cope with the increasing demand and to adhere to food quality and safety standards, the association rationalized its organizational structure to improve operational efficiency. Details of the set of new officers and their specific product responsibilities are presented in Figure 6. This new administrative structure is meant to boost production capacity and assure quality and safety of each specialized processed product form. It also enhanced competitiveness. The operational scheme followed standards of keeping records of accounts, audits, registration and certifications. It served as a check and balance mechanism within the organization and for the enterprise.

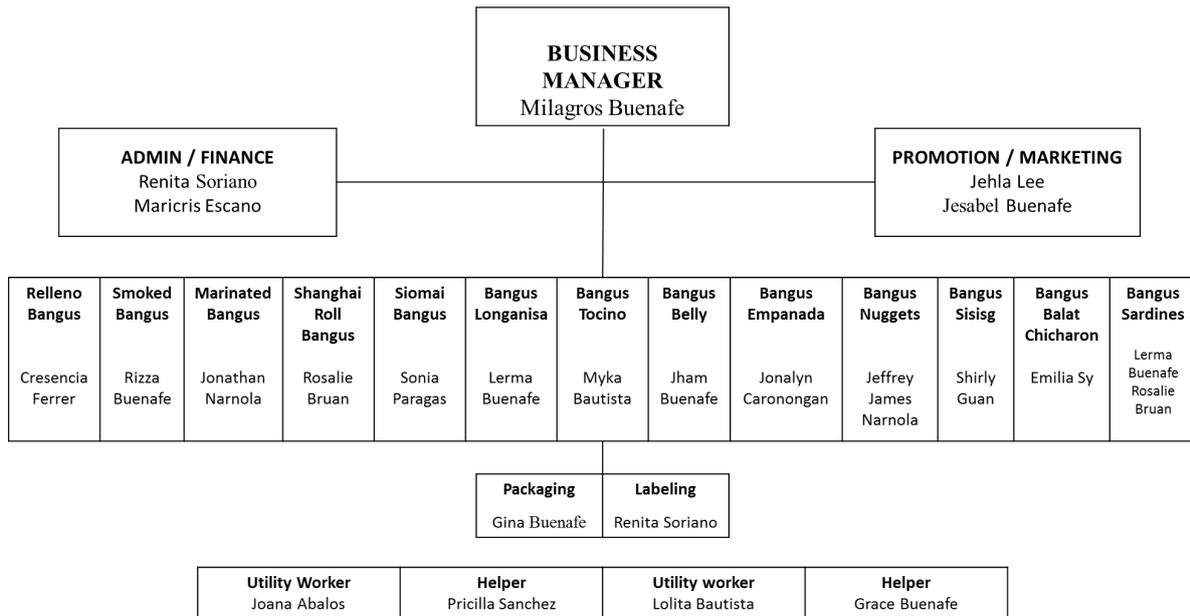


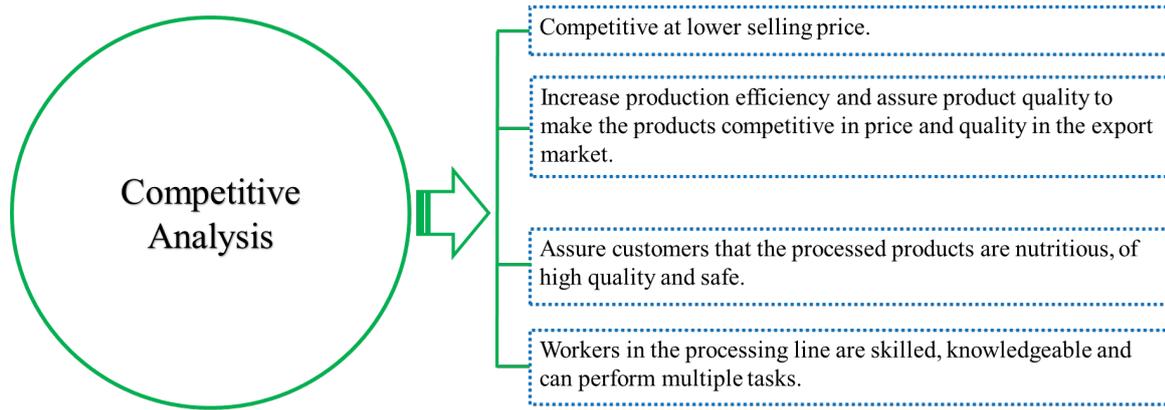
Figure 6. BRIC's new organization structure

4.3.3 Marketing

The organization developed and sustained their markets through various ways. Participation in trade fairs and agricultural food products exhibitions and seminars has been an effective means for them to promote and expand their market. It gave them the ideas and opportunity to develop new business prospects. BRIC has been able to penetrate the markets that comprise small and big groceries and institutional buyers that include hotels, restaurants, and public and private schools.

BRIC had a specific marketing and sale strategy that covered (1) the construction of a new processing plant (it was finished and became operational in early 2018); (2) application for license to operate (LTO) from the Food and Drug Administration (FDA); (3) improving the label, (4) adding value to the basic product, (5) TV promotions and distribution of flyers, and (6) promoting the cooked products by offering free samples, which they call 'promo-free taste-word of mouth'.

At the time this case study was being carried out, BRIC reported an increase in sales and profitability from the above strategic approaches (3) to (6). Registered sales for the year 2016 was PHP 2 165 500 (around USD 46 000 in that year). This earned a net income of more than PHP 167 000 compared to PHP 104 000 in 2015 and PHP 69 000 in 2014. The competitive analysis made by BRIC reflects the current competition and potential competitors, which has spurred the association to eye the export market and offer high quality products at comparatively lower prices (Figure 7).



Data credit: Milagros Buenafe

Target Customers:

In addition to current customers, BRIC targets small and large groceries and similar establishments, restaurants, hotels, and public and private schools.

Figure 7. BRIC's competitive analysis

5. PARTNERSHIP AND BUSSINESS RELATIONS

5.1 Input suppliers

The association has no direct business relations with producers of milkfish fry and suppliers of other materials needed in farm operations. Purchase of fish seed, feed, fertilizer and other farming materials is made mostly through sales agents. Terms of payment and assurance of the availability of supplies are the main basis of purchase orders from specific suppliers. Repeat orders depend on the quality of the delivered input. A poor quality batch would preclude a repeat order. Based on the association's experience and assessment, the quality of seeds supplied by the milkfish hatchery in Sual is much better than those from the other, more distant, sources. This has been attributed to the similarity in the quality of water used in both the hatchery production of fry and BRIC's milkfish farm. Besides, Sual is much nearer and transport time of the fry is considerably shorter. The fish farm manager has maintained good relations with contract workers, who provide services in pond preparation and water supply.

In the fish processing business, BRIC has maintained good relations with business partners that include, among others, the suppliers of fresh milkfish, other raw materials and condiments. This ensures availability of inputs anytime. Frank & Nally Consignacion, which has wholesale and retail stalls at the Dagupan Fish Port Complex, provides BRIC – under a purchase-on-account or a deferred payment agreement – freshly harvested milkfish for processing. This company has been a partner of BRIC for a long time and trusts the organization's ability to settle liabilities. Joemil Aqua-farm, a family farm is also providing assistance to the association under a similar arrangement. Similarly, Lenny Sari-Sari Store supplies, on credit, condiments and other processing ingredients. These three input providers are important partners of BRIC in the food processing business.

5.2 Product buyers

The first few years of BRIC's processed product trading had been critical; a verbal agreement was all that was made with members and selected vendors who acquired the products on consignment, i.e. payment after sale. This scheme almost led to the association's insolvency because of non- or much delayed payment of goods by consignees. The association had to revise its trading scheme from a buy-now-pay-later to cash-on purchase arrangement. The organization has maintained good relations with traders and buyers of their products. There is an increasing interest in the distribution and sale of 'BRIC Seafood Products'. Recently, the association has expanded its clientele by entering into business relations with a wider range of clients that include institutional buyers. Their current clients include the

Gulf Air Hotel and Restaurant (Manila), FMC Corporation (Manila), La Concepcion College (Pasig City), Literacy Coordinating Office (Pasig City), Dindo Bautista Restaurant (Laguna Province), SPO Carlos Rivera Canteen (Tondo, Manila), Light House (Cagayan Province), Myleen Canteen (Benguet Province and Baguio City), BWAD (Dagupan City, Urdaneta City and Binmaley) and trade fair in SMX.

5.3 Providers of support services

5.3.1 R and D, technology, extension

The farm and processing plant benefit from their proximity to offices of some of the government agencies and institutions for research and development, education and extension. The agencies and institutions that have been providing services to the association include BFAR in Region 1, DTI in Region 1, DOST, the Department of Labor and Employment (DOLE)'s Technology Education and Skills Development Authority (TESDA), LGUs at provincial and municipality levels, BFAR's National Integrated Fisheries Technology Development Center (BFAR-NIFTDC), and PSU College of Fisheries. The campus of the fisheries college is a short walk from the processing plant and the communal fishpond.

The BFAR in Region 1 supports farmers' associations in the region through research, technology development, training and extension as well as project partnership. The regional office provides technical training on milkfish farming, processing, packaging, product labelling and entrepreneurship. It has provided the association with a fish processing kit and equipment through its Gender and Development Programme. Technical advice on farming includes good management practices, water quality management and health management. BFAR-NIFTDC is accessible to BRIC for consultation, updates on aquaculture research results, and training.

DTI creates a business friendly environment. It promotes fair and robust trade in goods and services within and outside the Philippines. The Department coordinates all government activities related to trade, industry and investments, promotes trade and investments, and, as a regulatory body, ensures fair competition. Its key result areas are to: (1) attract and direct investments to areas leading to balanced agro-industrial development; (2) reinforce the country's competitive advantage in the world markets; and (3) ensure that the benefits of economic progress spread to the countryside.

DTI's SSF project is a major component of the 'Micro, Small and Medium Enterprise Development Program', which aims to uplift the economic condition in the countryside by generating more jobs. It aims to improve the competitiveness and productivity of MSMEs by providing them with machinery, equipment, tools, systems, skills and knowledge under a shared system. A total of 205 SSF projects have been established by DTI throughout Region 1 (and nearly 2 300 in the entire country) by 2016. The established SSFs in Region 1 have 35 836 beneficiaries with a total project cost of PHP 122 million.³

Seeing the group's achievements despite modest resources, the DTI's provincial office through the department's SSF project equipped BRIC with an upgraded set of processing facilities such as food grade stainless steel smoking house, stainless tables, double chamber vacuum packaging machine, freezer, industrial pressure cooker, as well as tools. This grant increased the club's monthly average production capacity from 3 000 kg to 10 000 kg (it is now 18 000 kg) of fresh milkfish processed into different forms of vacuum-packed quality products.

³ More information on the DTI's programmes and projects can be found in: www.dti.gov.ph/programs-projects/shared-service-facilities

5.3.2 Regulations

BFAR is both a development and a regulatory agency for the aquaculture farming and processing sectors. It requires and issues several certifications for farming and processing. A summary of the list of regulatory agencies and their requirements for certification and processing time appears in Table 2. BFAR guides and supports BRIC in the proper documentation, registration and acquisition of licenses and certifications from different agencies needed to legally operate its fish farming and fish processing enterprises.

Table 2. Regulatory requirements for fresh and frozen fishery products in the Philippines

Requirements	Regulatory agency	Fee (PHP)	Processing time
A. Fish processing plants			
1. License to operate	FDA		
2. Product registration	FDA		20 days
3. Issuance of certification HACCP approval, certificate of recognition for HACCP implementation and certificate of inspection	BFAR	No fee	
4. Chemical and microbiological testing	BFAR	Depends on the type of analysis	7–10 days
B. Importer of frozen/chilled fishery products			
1. License to operate	FDA		
2. Issuance of sanitary and phyto sanitary (SPS) clearance to import frozen/chilled and fishery products	BFAR	Application fee PHP 150	1 hour
		Importation fee PHP 1 500	
3. Issuance of SPS clearance of fishery/aquatic products	BFAR	150	1 hour
4. Inspection and clearance of imported /incoming fish and fishery products via the MDA/NAIA	BFAR	No fee	1 hour
C. Exporters of fisheries products			
1. License to operate	FDA		
2. Issuance of sanitary/health certificate of accredited exporter to international markets	BFAR	No fee	2 working days
3. Chemical and microbiological testing	BFAR	Depends on the type of analysis	
4. Issuance of export permit for fresh/frozen fishery products	BFAR	No fee	30 minutes
5. Export commodity clearance	BFAR	No fee	20 minutes to 1 hour
6. Issuance of clearance for outgoing fish and fish products	BFAR	No fee	1 hour

Source: Manalili (2017)

5.3.3 Product development, promotion and marketing

The services of DTI, DOST and BFAR support the association in product development, processing, promotion and marketing. BRIC has been the subject of their interest; they have made it their model group at agriculture and food exhibitions. DOST in Region 1 provides awareness training on food safety that involves the deployment of food safety experts to food processing firms to advise on compliance to good manufacturing practice (GMP) standards. It benefitted BRIC in terms of (1) an improved plant layout, (2) better GMP compliance, (3) process standardization, and (4) more training opportunities on entrepreneurship, book-keeping and product labelling.

5.3.4 Enterprise management

The Livelihood Assistance Programme (LAP) of the provincial government, launched in October 2008, is designed to aid Pangasinan residents with their livelihood ventures and enterprises. BRIC availed of the assistance from this programme and was subsequently recognized as one of the most responsible beneficiaries for promptly repaying the loans from the programme. The DTI monitors and updates the association on matters associated with enterprise management and development as part of its continuing assistance that complements the local government's.

DOLE's TESDA facilitates the provision of technical education and skills development. It was created by Republic Act 7796, the Technical Education and Skills Development Act of 1994. It has provided training to BRIC officers on management and operation, health and sanitation, and food safety.

5.3.5 Public information

The association's awards of recognition have been publicized by the government agencies supporting them. BRIC has been featured in the publication, *Ramdam*. This magazine features inspirational and success stories of MSMEs supported by the DTI. The association has been featured in the broadcast and print media for their achievements as an organization of smallholders.

6. INITIATIVES OF THE ASSOCIATION

6.1 Business model

The organization's long experience in milkfish farming, processing and marketing has helped develop their products' chain. BRIC's frequent participation in local and national agriculture and food exhibitions enables them to compare and assess their competitive advantage with manufacturers of similar products. Their long-standing business relations with the local fish landing wholesale and retail establishments and suppliers of condiments have been important in the association's value chain. 'BRIC's Business Model Canvas' portraying the organization's business activities and participation is presented in Table 3. This represents the current value chain of the association. It may need further analysis to enhance its efficiency, sharpen competitive advantage, and improve profitability.

6.2 Product upgrading

The increasing demand for their products spurred BRIC into testing a variety of other milkfish products like *bangus relleno*, *tocino*, *nuggets*, *siomai*, *longanisa*, *shanghai*. After trials with consumers and product improvements suggested by the tests had indicated acceptability, they proceeded to produce these product forms in commercial volume. They were assisted in this process by the College of Fisheries of PSU. The new products are now available along with their original and still best-selling products, the deboned and smoked milkfish. The association upholds putting a reasonable price on high quality, better tasting and safe products. Some of BRIC processed products and prices are in Figure 8 and Table 4.

6.3 Process upgrading

The humble processing structure built in 1998 is now part of BRIC's history. The association's savings and 'volunteered loan' (interest-free, from Joemil Aqua-farm) provided the capital to build a new processing plant with a higher turnover and a capacity to process higher-value and better quality

products. The plant was designed to increase their processing capacity to 30 000 kg per month from the present 18 000 kg per month (Figure 9).⁴

6.4 Functional upgrading

The development of higher-value products, for which they have created a demand and are now supplying to their end markets, required functional upgrading. This status needs to be sustained. To attain the projected capacity of the new processing plant for the higher-value products, BRIC has constituted task forces, each task force led by an officer with a specialized unit assignment. Individual unit heads are assigned to supervise the good manufacturing process and quality control for a particular product form. This supervisory arrangement, the batch production process for each higher-value product form, and the upgraded processing facility enhanced the efficiency of the overall operation. The new facility also provides the opportunity for training and the hand-over of the management, supervisory and operational functions to the younger members.

6.5 Chain upgrading

Value chain upgrading through the expansion of the market for processed milkfish products is part of BRIC's current initiatives. Business partnership with big grocery stores, restaurants, and hotels as well as schools has been initiated. The association has applied and is waiting for the LTO from FDA. This would also improve its competitiveness in the export market.

⁴ The construction is finished and it has been operational since early 2018; they have a Municipal Government Business Permit to operate the plant meanwhile they are awaiting FDA's approval of their application for an LTO.

Table 3. BRIC's Business Model Canvas

Key partners	Key activities	Value proposition	Customer relationship	Customer segments
<p><u>Suppliers of fresh milkfish</u></p> <ul style="list-style-type: none"> Joemil Buenafe Aqua-Farm Buenlag, Binmaley, Pangasinan Frank & Nally Consignacion, Dagupan City <p><u>Supplier of condiments</u></p> <ul style="list-style-type: none"> Lenny Sari-Sari Store Binmaley Pangasinan <p><u>Product distributors</u></p> <ul style="list-style-type: none"> Tuguegarao (1) Manila (4) Baguio (2) Laguna (1) Zambales (1) Palawan (1) <p><u>Outsource partners</u></p> <ul style="list-style-type: none"> Relative- Antipolo City Relative- Pasig City Relative- Baguio City Relative- Undaneta City 	<p><u>Operations</u></p> <ul style="list-style-type: none"> BRIC started milkfish processing business under mango tree, later built a makeshift house behind residence of Ms Milagros Buenafe. Operates on limited budget, acquire milkfish raw materials on credits from local fish vendor to process marinated, smoked and relleno bangus and sold to neighbours. BRIC has progressed since then. <p><u>Marketing mode</u></p> <ul style="list-style-type: none"> Products delivery Pick up Shipping <p><u>Resources</u></p> <ul style="list-style-type: none"> Initial capital on credit, now revolving own capital Labour and personnel from the association BRIC's fish farm supplies milkfish raw material. 	<p><u>High demand products</u></p> <ul style="list-style-type: none"> Marinated milkfish Smoked milkfish <p><u>Scheme</u></p> <ul style="list-style-type: none"> Increased productivity meeting the local emerging demand. Increased level of awareness on importance of producing quality products by advanced technology and modernized innovation. Always fresh, no preservative Over 18 years of experience Packaging by DOST set up Foreign market looks for nutritious and delicious food to boost good health. Vacuum packed for longer shelf life. 	<p><u>Bulk buyers</u></p> <ul style="list-style-type: none"> On-time delivery/shipping of unlabelled bulk orders like 300 packs or more especially in far locations like Tuguegarao, Cagayan. In supermarket consignment: terms of 15–30 days. Unsold products are taken back for replacement. <p><u>Market channels</u></p> <ul style="list-style-type: none"> Walk-in customers Word of mouth Distributors Small to Bigger <i>Pasalubong (gift)</i> centers Advertising media-leaflets Personal selling Free publicity 	<p><u>Customer distribution</u></p> <ul style="list-style-type: none"> Local 50% Other town 10% Other province 10% <i>Balibbayan</i> 10% Walk-in customers, including tourists 20% <p><u>In trade fair</u></p> <ul style="list-style-type: none"> Most customers are the 30 years and above age group and are health conscious Another important group are the 20–30 year olds who buy the products for home consumption.



Figure 8. BRIC milkfish processed products (as of November 2017)

Table 4. Prices of BRIC milkfish processed products (as of November 2017)

Product	Price (PHP)
Marinated (2 pieces/pack)	120
Relleno (1 piece)	120
Smoked Tinapa (2 pieces/pack)	120
Shanghai roll (60 sticks/pack)	100
Tocino (350 g/pack)	90
Longanisa (350 g/pack)	90
Bangus belly, medium (5 pieces/pack)	90
Bangus belly, large (4 pieces/pack)	100



Figure 9. BRIC's new processing plant (left) and officers cum supervisors of specialized processing units (right)

7. ACCOMPLISHMENTS AND IMPACTS

Developing the value chain for certain goods is a priority tool for many governmental, private and development organizations. Through developing a value chain these entities assist in poverty reduction, income generation, and employment creation. The development of a value chain builds entrepreneurial dynamics that increases competitiveness and value addition at each stage of production (UNIDO, 2011). The achievements of BRIC reflect these outcomes.

7.1 On members: income and entrepreneurship

BRIC's milkfish processing project eased the economic burden of women members through part-time employment close to their home during idle time and earning additional family income (PHP 200 per day plus health insurance benefit). They were able to acquire knowledge on entrepreneurship, book-keeping, accounting as well as food pricing and costing, labelling and food safety from the training activities conducted by DTI. They also learned how to start a home-based business. The skills acquired from the training entitle each trained member priority use of the SSF facilities for a minimal fee. In other words, they could process their own products (other than the association's 'corporate' products) which they can sell on their own.

All these have strengthened their work values and developed an appreciation for responsible and ethical behaviour as a member of the association and in business relations. The BRIC experience reflects the multiple roles of organized women in improving family welfare and contributing to the development of the community. In this regard, BRIC's farming and processing ventures could be seen in the context of a 'social enterprise' for improving the lives and economic opportunities of its members, their families and the community, and empowering women. As well, the various products make use of almost all parts of the fish, which reduces food waste, minimizes the environmental impact of processing, and increases the value of a fish.

7.2 On partners: additional business opportunities

Intensified production and sale of BRIC products have increased demand for raw material for the fish processing operation. This has had a positive impact on the business of BRIC's regular input suppliers. Downstream, the improvement of the processing facility has produced better quality products and promoted an increased and steady supply of these processed products to BRIC's trading partners and end markets.

7.3 On community: employment and community development

The local economies of Barangay Buenlag and the Municipality of Binmaley have benefited from the BRIC through more employment, increased family earnings, payment of taxes, license and permits, and the promotion of the reputation of the municipality as home of BRIC processed bangus. The seasonal need for contract labour for pond preparation and maintenance, and fish harvesting in the association-owned fish farm provides employment and additional income for farm workers, who are from the community.

8. GAPS AND SOLUTIONS

8.1 In farm-input procurement

In the milkfish production system, the innovative approach of stocking bigger-sized fish has to be trialled and then adopted by BRIC to shorten the growing period of table-size milkfish. This approach mitigates the negative effects of extreme weather events like typhoons and those spawned by El Niño and La Niña and other hazards brought about by climate change. Sources of bigger-sized fingerlings are available and efficient delivery of live fish is now possible.

8.2 In farming

Based on experience and observations, milkfish fry produced by the hatchery located in the nearby municipality of Sual perform better than the imported stocks and those from other local sources. However, the limited quantity and availability from this source creates uncertainty during periods of

rotational or seasonal stocking in grow-out ponds. Hence, the farmers use fry from a very distant source, i.e. Indonesia. This observation is corroborated by the results of milkfish fingerling productions from commercial sources in the provinces of Bulacan and Rizal. Based on interviews and data from Anak Dagat Farm in Bulacan and HT Montevilla Hatchery in Rizal, there is an increasing demand for bigger-sized milkfish fingerlings from the Taal Lake cage farms and other farms around Luzon. Transport of larger-sized fingerlings within Luzon and parts of Leyte Province is no longer a problem with the retrofitting of a transport truck into a more efficient and bigger-capacity live fish truck.

Results of the feeding trials conducted on milkfish and tilapia show that the stocking of larger fish in the pond and cages (pre-ongrown fish) and the use of feeding nets within the cages significantly improved yields. The use of 20–40-gram fingerlings during the warm season (March–September) and 50–100-gram fish during the colder periods (September–February) allows a much shorter growing period and earlier harvest (White *et al.*, 2018). This new approach could improve the performance of BRIC's farm.

Other farming problems are poor water quality because of extreme weather events. One of the impacts was a drastic reduction in the country's milkfish production in 2015 (PSA, 2016). BFAR's monitoring team assists BRIC in water quality analysis and assessment of fish health. However, having its own water testing equipment would be very helpful in an emergency and when the association expands its farming operation.

8.3 In processing

The LTO granted by FDA is a prerequisite for product registration and HACCP recognition and certification. The LTO is essentially a permit for the association to operate the newly built processing facility. BRIC is awaiting approval of their application for the LTO. They have been applying HACCP protocols, which they have learned from the training courses conducted by BFAR, DOST and TESDA.

8.4 In product development

To develop new products and improve on them, BRIC has set up a small laboratory in the newly constructed processing plant. Testing, auditing and inspection of their own products, and product research and development are to be done in this laboratory under the supervision of DOST and BFAR.

Ongoing product innovation is geared towards zero waste, in which parts of the fish that would otherwise be discarded are utilized as raw material for formulating other products such as fish paste, fish flavor enhancer, fishbone-powder calcium supplement and liquid foliar fertilizer.

8.5 In value addition

Additional equipment were being set up, the major one being the blast freezer and cold storage room. DOST had committed to support the construction of the cold storage room. Similarly, packaging has to be improved to further add value, increase marketability and engender customer loyalty. Value adding increases margins, from the higher selling price and a better competitive advantage in the value chain of the product. Value adding however should not end up making the cost of the product uncompetitive in terms of its price compared to directly competing products as well as substitutes.

The BRIC products are competitive with other local brands in terms of price. However, considering the selling price of their banner product, the marinated boneless *bangus*, being PHP 120 for a 1-kg pack, a cost-and-return estimate that accounted for all inputs used (including own labour and other opportunity costs of investment) suggests that the selling price was rather low.⁵

⁵ J.J.M. Tubal of the Department of Agri-Management, College of Agriculture, Central Luzon State University, personal communication, 2017.

The inconsistent recording of cost items and not placing a value on some inputs obviously throws off the reliability of cost-and-return estimates and renders product pricing at best intuitive and based on their experience, or a guesswork. This stresses the need for systematic data recording and keeping, especially now that they are expanding production.

8.6 In market and marketing

BRIC has devised its own Porter's five forces (Figure 10), a tool for understanding business competitiveness and potential profitability, and market SWOT (Figure 11) to assess competition, develop a strategy to compete in the processed fish products industry, and identify their weaknesses and strengths. BRIC's planned entry into the export trade will depend on a number of requirements. The key is the LTO from FDA, which is a prerequisite to being able to apply for the various permits and obtain the required certification including health clearance.

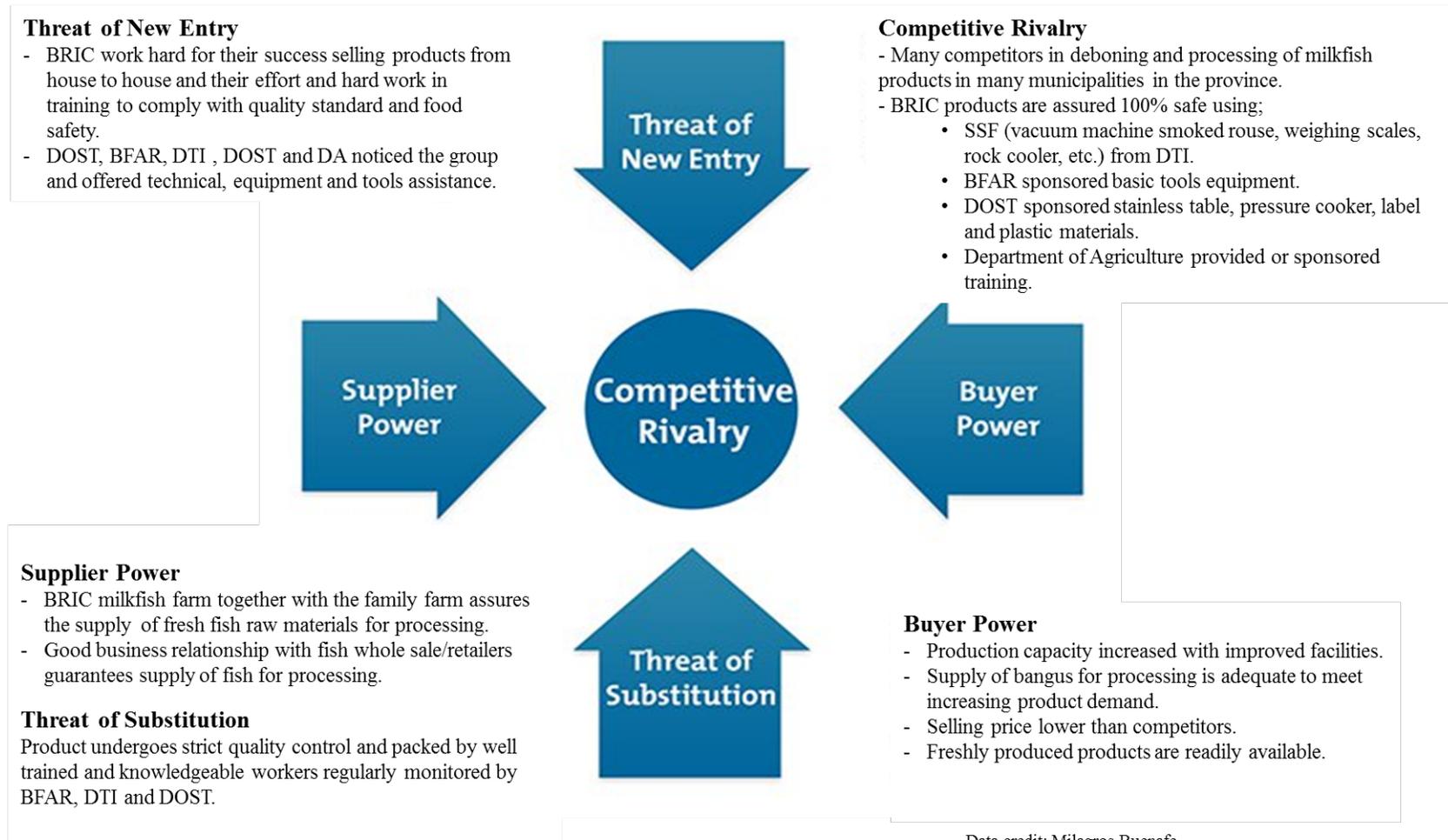


Figure 10. BRIC's market framework under Porter's five forces model

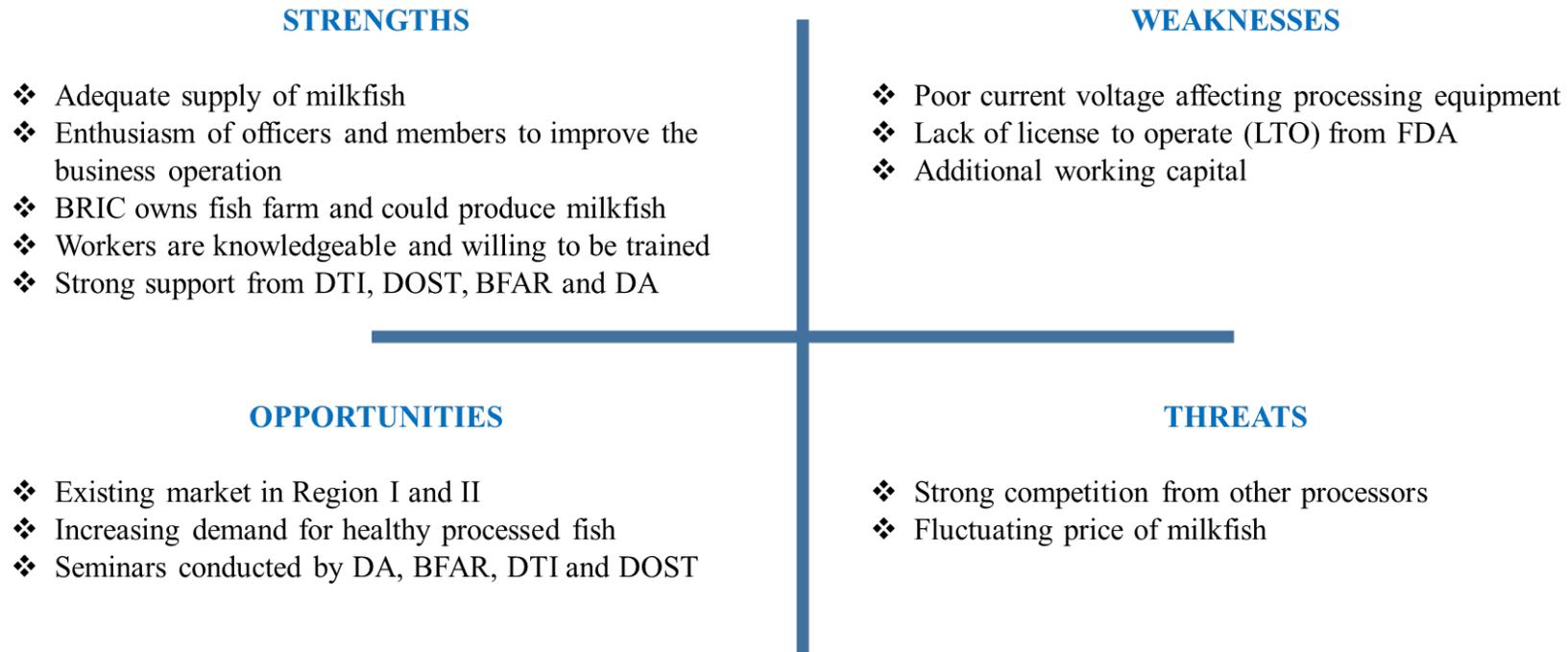


Figure 11. BRIC's market analysis using SWOT framework

9. CONCLUSION

“A little job well done is the first step towards a bigger one”. This credo of the association embodies their struggle towards economic viability, association empowerment and enterprise sustainability.

Success did not come easy to this women’s association with a modest beginning of farming milkfish and selling the fresh harvest in the neighbourhood, then processing it – initially under a mango tree then a makeshift structure – and peddling the product from house to house.

Attaining a status that has been duly recognized as a success story by a number of government agencies and the local government (with awards and citations that had been widely publicised) demonstrates the important role of organized women in improving family livelihoods and contributing to community development. The women established an enterprise, took on production and marketing risks, forged business relations with input suppliers and product buyers, reached out to service providers that are mostly government entities, and persevered in improving the viability of the enterprise while keeping the association cohesive.

The technical training, study visits and exposure to various aspects of production, processing and marketing have been complemented by a programme to professionalize its management and operation. The organizational structure was revised and made more sophisticated to cope with production increase, market expansion and compliance with more certification standards. A task force system organized to take care of the production of specific items in their product lines suggests a systematic approach to managing the processing operations.

Acquiring the technical and management expertise and applying these in business planning and decision-making have promoted the viability of their enterprise. The management strategy and operational procedures that they have evolved facilitated access to a variety of assets, resources and services. These strengthened the association and the members’ capabilities, which in turn enabled them to harness the institutional services and utilize the assets effectively. Participation in organized activities, workshops, public relations, and product promotions has upgraded their technical expertise and, overall, empowered even more the association and the individual members.

They explored and established new business opportunities with other value chain actors and developed mutually beneficial partnerships. The encouraging results have made them aspire to participate in a wider market that includes the export market.

The association not only made good use of offered opportunities, they created many of them. BRIC has been cited in a number of awards from national and local governments for the successful promotion of livelihood and sustainable development relevant to fisheries and aquaculture.

A value that is key to value chain development and resilience is trust. Trust among the players along the chain is probably the most significant manifestation of socially responsible behaviour. It also underpins the credibility of the institutional support system, which comprises government agencies, the local government units, NGOs and other civil society organizations, technical assistance agencies and private providers of inputs and other support services.

BRIC’s experience demonstrates that small aquaculture farmers that are organized, and whose organization is strengthened and empowered, can better realize their organizational objectives. They generate more economic and social benefits for their families and community. Creating a market for their products and then participating more actively in the value chain of the products (by among others adding value to it, increasing the volume and variety of marketable products, and becoming more competitive in the market) is a pathway to improving the livelihood of small farmers. It also has a positive impact on the other players along the value chain and the community. They increase the volume

of inputs they need for farming and fish processing, and generate local employment in farming, processing and marketing. They avoid being marginalized in a modernizing value chain, avoid a possible consolidation of their small farm holdings and, by creating livelihood opportunities in the rural area, help reduce outmigration to urban centers.

10. LESSONS IN EMPOWERING A SMALL FARMERS' ORGANIZATION FOR VALUE CHAIN PARTICIPATION

10.1 Generic

- Building up the association's capacity and eventual empowerment are largely owed to the system of support provided by the government as well as the mass media. This has included training and technical advice on various skills, physical assets, market access, information and public relations. Their relations with the government and other agencies are technical, regulatory, policy and public relations. Their participation in organized activities, workshops, trade fairs, product promotions as well as their media exposure and skills built up their social capital as well as their brand.
- A notable outcome of an association's empowerment is its becoming a stronger partner of the local government unit in community and sustainable rural development.
- An empowered association has greater prospects of sustainability. Evidence of the association's sustainability, other than their having continuously operated since 1989, is their progress from production to processing two simple products to processing a greater variety and higher value product forms and expanding their market. Initiating and sustaining the association's projects as well as its basic organizational functions depend much on a network of linkages – which is a social capital – with the other principal stakeholders.
- A resilient value chain makes small-scale producers resilient to risks. A value chain that possesses these attributes – mutual trust among actors, equitable sharing of benefits, empowered producers, efficient processes, and democratic procedures – imparts resilience to the individual actors of the entire chain. As well, a well-managed value chain would engender closer cooperation, opens up communication and raises customers' satisfaction.
- Mutual trust, on which their business relations is founded, had imparted on the association the 'social license to operate', which, for sustainability, is as critical as a legal license to operate.

10.2 Specific to being an association of women

- An organized women's group can play a strong role in market development and access. The case demonstrates that:
 - 1) Women can, in a suite of multi-tasks, perform all these effectively: farm and process farm products, procure and organize inputs, and market products.
 - 2) As farmers, women are very much conscious of the importance of good quality fresh farm outputs and as processors, they appreciate the importance of a reliable – that is, delivered in time and in the required quantity – supply of quality raw materials;
 - 3) As entrepreneurs – who buy inputs, farm, process and sell – they are keenly aware that any inefficiency upstream or downstream affects their own efficiency and profitability.
 - 4) Their cooking skills readily translated to value addition of farm outputs. BRIC members' familiarity with popular ready-to-cook products from poultry, pork, beef and fish led them to experiment with milkfish as the main ingredient. This diversified their product forms, added value to the fish, and increased its utility, which reduces food waste.
- Women participation in the aquaculture value chain promotes the fundamental objective of gender equity. While the case is of a women's association, the reality is most farmers'

associations are composed of men. The case highlights the contributions women can bring into a small farmers association's efforts at value addition, market access, market creation, and enterprise management. Their interpersonal and social skills facilitate linkages and business relations with suppliers and buyers. In addition, their traditional role as keeper of the household money was effectively applied in the careful disbursement of association funds and accumulation of savings. It seemed easy for them to internalize the social values created by environmentally responsible production and processing.

- Women's leadership is enhanced as their vision and shared goals bind them in solidarity. Problems and challenges are resolved through their commitment to achieve their goals, which is embodied by the triple bottom line of people, profit and planet.

11. RECOMMENDATIONS

11.1 Action recommendations, addressed to associations, for enabling effective participation in the value chain

- It is essential for small farmers to be organized and trained in technical and management skills and aptitudes for effective participation in the value chain. A requisite is small farmers are organized so that capacity building can be efficiently directed towards professionalization and upgrading of technical skills. Professionalization of leaders, members and the association's systems and operating procedures is crucial to sustaining an association of small producers. It should include leadership skills and values, members' attitudes and values, and financial literacy and prudence. The case also points out the need to groom future leaders and distribute tasks and responsibilities.
- The association should nurture and promote a product image that reflects quality, safety, and environmental and social responsibility in its production and in the association's actions. The marketing strategy and message should highlight the product attributes that make it highly desirable and distinct from similar products. For instance, BRIC's economic empowerment of women and its contribution to community development should be reflected in the marketing message. The value proposition should be easily understood and should have clear target markets.
- The leadership of the association should foster an environment that encourages every member to share her ideas on ways to innovate products and services, develop new products, improve management and raise operational efficiency. Whoever is the proponent of a new idea, considering her idea and subjecting it to members' and other people's critical views and then assessing its value, practicability and contribution to the association's business objectives is a desirable process. Additionally, the association should solicit ideas and opinions of partners along the value chain. An institutionalized process of generating, sharing and evaluating ideas among the members and the community about products and processes would enhance the association's and its enterprise's innovativeness and efficiency.
- Transparency begets trust. And trust, among its many positive effects, reduces cost of transaction. This should pervade the management of the association and its business practices. Internally, the association has to follow standards of keeping accounts, auditing and reporting of financial transactions and status. With its buyers and distributors, the quality of its products can be assured by being certified according to prescribed standards. Reliability of product delivery should be assured. Upstream of the chain, the association should pay its suppliers in time and in full.
- Finally, associations should effectively harness information technology particularly the social media to promote their services and products, and for public relations. It would, for one, facilitate their understanding of demographics of the market and the preferences and behaviour

of the target market segment. For example, the younger generation prefers to purchase convenience products, i.e. ready-to-cook forms and from outlets other than the wet market.

11.2 Policy and technical support for strengthening and empowering farmers' associations

- The various kinds of technical assistance from different government agencies have contributed significantly to building the capabilities of the association. But they are delivered separately by each agency. It would be more economical and efficient if the various types of support (e.g. new knowledge, skills, technology, and facilities and equipment) are integrated into a package of services and channeled through a competent authority designated as the focal point for delivery. This could be the local government unit or even a civil society organization.
- The delivery of an integrated package of services to organized small-scale producers is much more effective and economical than delivering separate components of those services to individual unorganized farmers. As well, an innovation is usually subjected to more critical evaluation by a group than by separate individuals and its adoption more sustained by organized farmers.
- There is a growing trend in 'impact investments', which is basically investing in a venture that not only provides a financial return to the investor but also generates social and environmental benefits. The DTI could include the promotion of this type of investment in its programme and provide stimulus for associations such as BRIC to explore 'social innovations' and develop and position their enterprises for impact investments. Another possibility is promoting the farm and processing enterprise as a stop in an agro-tourism itinerary and developing the area (i.e. the town) into an agro-tourism hotspot. This would increase the opportunities for local employment and business development.
- Related to the preceding recommendation is for the relevant government agencies to strengthen and integrate their services and programmes for quality, environmental and social responsibility certification of a producers association's products, services and processes.
- Trust is very important but the law is also needed to encourage responsible behaviour. In this regard, the support services should include legal advice to associations in applying for licenses and permits, complying with legally set standards, and in developing agreements with input suppliers, distributors and buyers.
- A streamlined one-stop service for filing of applications and issuance of permits should be instituted. The focal agency for this streamlined scheme could be the municipal or provincial government.
- Support from the government is necessary for analytical laboratory services, by a well-equipped and staffed laboratory in the province, for testing for food safety and quality, input quality, as well as for fish health and pond culture water quality, and for a periodic inspection and certification of the production facilities and procedures.

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ISBN 978-92-5-131544-6 ISSN 2070-6065



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CA4982EN/1/06.19