Key Success Factors (KSFs) of Cooperative Feed Mill Enterprises in Batangas Province, Philippines

Maria Noriza Q. Herrera, Dinah Pura T. Depositario, Arlene C. Gutierrez, and Dia Noelle F. Velasco
University of the Philippines - Los Baños
dtdepositario@up.edu.ph
acgutierrez1@up.edu.ph
mqherrera@up.edu.ph
dfvelasco@up.edu.ph

Abstract

The Philippine feed mill industry is an important intermediate industry as it is highly dependent on its backward and forward linkages. Batangas is a host to majority of feed mill enterprises in Luzon island due to the high number of livestock and poultry farms in the area. Currently, there are 89 active animal feed mill enterprises in Batangas with majority located in the municipalities of Lipa, San Jose, Rosario and Padre Garcia. The province is dominated by home mixers but the cooperative feed mill enterprises currently have the largest market share. This prompted the authors to look into the factors that would make the cooperative business model in the feed industry a success. However, the cooperative feed mill industry is beset with challenges and problems that include the following: dwindling number of members with backyard swine and poultry production, the occurrence of African Swine Fever (ASF), increasing volume of accounts receivables among members, higher acquisition cost of raw materials especially yellow corn and lack of laboratory facilities for small and medium scale cooperative feed mill businesses. This study attempted to analyze the key success factors (KSFs) of selected cooperative feed mill enterprises in Batangas province. It specifically aimed to: 1) describe the external (macro and micro) environment of the feed mill industry; 2) present the internal environment of the cooperative feed mill enterprises; 3) analyze the key success factors of the cooperative feed mill enterprises; and 4) recommend strategic directions for the selected cooperative feed mill businesses.

A descriptive research design was employed in the study. Three cooperative feed mill businesses representing various scales of operation were covered in the study: Batangas Bestfeed Multi-purpose Cooperative (BBFMPC) (small-scale), Agro-industrial Cooperative of Mataas Na Kahoy (AICOM) (medium-scale) and Sorosoro Ibaba Development Cooperative (SIDC) (large-scale). The study found that the key success factors (KSFs) of cooperative feed mill enterprises were the following: degree/level of vertical integration, technological capabilities, geographical/market area coverage, adequate and sound financing and professional management. SIDC exhibited a high degree or level of integration, wider geographic market coverage and good professional management. Meanwhile, BBFMC demonstrated adequate and sound financing while AICOM showed partial integration and moderate professional management.

It was recommended that SIDC should continue implementing its current strategies that involve expansion initiatives (i.e., putting up larger warehouse facility, establishing feed mill plants, and having aggressive contract growing (CG) arrangements for yellow corn). SIDC should also elevate its semi-automated feed mill system to a fully automated one to achieve economies of scale and have diversified products. On the other hand, it was recommended that AICOM should divest its feed mill operations due to high accounts receivables and the decreasing number of backyard swine and poultry farms in the municipality where majority of its members are situated. Lastly, it was suggested that BBFMPC implement a market penetration strategy by establishing its own layer and poultry farm.

Key Words: Philippine feed mill industry; cooperative feed mill enterprises; key success factors (KSFs)

Introduction

Animal feed production is an important agribusiness intermediate industry supporting the livestock, poultry and aquaculture sectors locally and worldwide. In 2018, the global feed tonnage grew by 2.76% with feed production of 1.103B MT (Alltech, 2019). Meanwhile, the average growth per annum of the feed mill industry in the Philippines was between 5.5-6% (Esplana and Soliaban, 2004) yielding 27,000MT (Reyes, 2018). One of the major drivers of growth in the feed mill industry is the continuous increase in population. Between 2020-2050, it was projected that an additional 1.305MmT of grains should be manufactured, of which 40% would be intended for livestock feeds (FAO, 2013).

Globally, the top 10 feed-producing countries are China, USA, Brazil, Mexico, Spain, India, Russia, Germany, Japan and France (Alltech, 2018). These countries contributed 86% to the total feed production predominantly for livestock (i.e., swine and ruminants), poultry, and aquaculture (Alltech, 2017). The Philippines, though a small island, ranked 21st among the top 30 feed mill producing countries in the world. The first feed production occurred in the National Capital Region (NCR). In the early 1950s, foreign breeds of livestock and poultry were imported that necessitated the importation of mixed feeds until a number of Filipino entrepreneurs invested in the Philippines to put up feed mills in NCR (Sison, 1996).

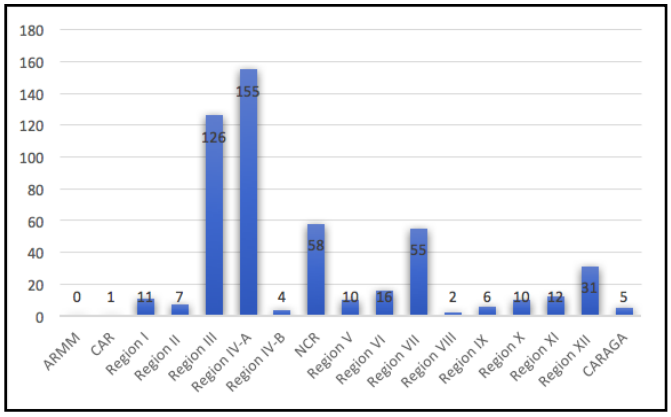
Philippines' top 10 commercial feed mill players are the following: San Miguel Foods (B-meg), Charoen Pokphand Foods Philippines Corporation (CPF), Cargill, Sunjin, Universal Robina Corporation (URC), Unahco, CJ, Pilmico, General Milling Corporation (GMC) and Philippine Foremost Milling Corporation (PFMC), of which majority are Filipino-owned. These companies capture an estimated of more than 50% of the market share from the total domestic production. All of them are also members of the Philippine Association of Feedmillers, Inc. (PAFMI), an association responsible for ensuring production of affordable feeds to swine, poultry, other livestock and aquaculture sectors (Reyes, 2018).

Moreover, the Bureau of Animal Industry (BAI) in 2018 recorded a total of 486 feed mill businesses nationwide. The Luzon feed millers manufactured majority of the animal feeds

contributing more than 84% of the total mixed feed produced in the country. Majority come from NCR, Batangas, Bulacan, Cavite, Laguna and Quezon feed mill plants (Sison, 2014). Regions IV-A and III dominated the feed mill industry with 155 and 126 feed mills, respectively. The dominance of feed mill enterprises in the said regions is attributed to the high number of commercial and backyard swine and poultry farms present in the area. Figure 1 shows the regional distribution of the commercial feed manufacturers in the Philippines (BAI, 2018).

Figure 1

Regional Distribution of Registered Commercial Feed Mill Companies in the Philippines (as of 2018)



Source: BAI, 2018

Among all provinces in CALABARZON, Batangas recorded the highest number of feed enterprises. There are currently 89 feed mill plants registered in Batangas: 81 are commercial businesses while 8 are under the cooperative model. The reason for prevalence of feed mill enterprises in Batangas is due to the high number of commercial swine and poultry farms as well as backyard farms. In 2016, Batangas remained as the top swine and poultry producer in CALABARZON (PSA, 2017). The province is the top layer producer in the country accounting for 27.51%. Layers are good sources of chicken eggs. Hence, the province has been dubbed as the "egg capital" of the Philippines. It was estimated that about 75% of total chicken egg production come from commercial layer farms (Sison, 2014). Moreover, Batangas is the 4th top broiler producer in the country accounting for 5.78% (3, 609, 587 birds). The province is also a home to 1, 481 commercial swine farms with a total farm capacity of 695, 520 (PSA, 2017).

Despite the dominance of the commercial feed mill companies in the country, a unique business model was found to exist only in Batangas province, the cooperative business model. Batangas province is dominated by home mixers but it is interesting to note that the cooperative feed mill enterprises currently have the largest market share. At present, however, the cooperative feed mill industry is beset with challenges and problems that include the following: dwindling number of members with backyard swine and poultry production, the occurrence of African Swine Fever (ASF), increasing volume of accounts receivables among members, higher acquisition cost of raw materials especially yellow corn and lack of laboratory facilities for small and medium scale cooperative feed mill businesses. Hence, this prompted the authors to look into the factors

that would make the cooperative business model in the feed industry a success. Hence, a study on the analysis of the key success factors (KSFs) of selected cooperative feed mill enterprises was conducted. The specific objectives of the study are to: 1) describe the external (macro and micro) environment of the feed mill industry; 2) present the internal environment of the cooperative feed mill enterprises; 3) analyze the key success factors (KSFs) of the cooperative feed mill enterprises; and 4) recommend strategic directions for the selected cooperative feed mill businesses.

Three (3) cooperative feed mill enterprises, representing three scales of operation, were focused on in this study: Batangas Bestfeed Multi-purpose Cooperative (BBFMPC), Agro-industrial Cooperative of Mataas Na Kahoy (AICOM) and Sorosoro Ibaba Development Cooperative (SIDC). SIDC is the second oldest cooperative feed mill enterprise which was established in 1987 and is currently the known market leader among cooperative feed mill enterprises in the province and the whole country. On the other hand, BBFMPC started operating in 2008 while AICOM was established in 1991.

Review of Literature

Studies related to the key success factors (KSFs) of cooperatives were reviewed as part of this research. In 2003, Castillo conducted a study on the 4 successful cooperative feed mill enterprises in Region IV-A, namely: LIMCOMA, Sorosoro Ibaba Development Cooperative (SIDC), both based in Batangas province. CAFFMACO in Cavite province and Luntian in Quezon province. The Lipa City Multi-purpose Cooperative (LIMCOMA) is the oldest known cooperative feed mill enterprise founded on 25 March 1970. LIMCOMA attributed its success to technological advancement and high asset and inventory turnover. In 1994, LIMCOMA was the first cooperative feed mill business to utilize the automated and computerized feed mill system.

Furthermore, although the Sorosoro Ibaba Development (SIDC) was established in 1969, the cooperative only started to produce animal feeds in 1987. The success of SIDC is attributed to great leadership as exemplified by its founder, Mr. Victoriano Barte who dedicated his time, talent and treasure along with the Board of Directors (BOD). The officers, employees and members' continuous patronage, cooperation and unity in carrying out all activities contributed to what SIDC is right now (Castillo, 2003). In October 1989, PADECO operated its feed mill in a lot donated by its founder Alejandro Reyes. It struggled during the first few years but managed to earn Php 2,579, 291 by the end of 1991. Meanwhile, the Cavite Farmers and Feedmillers and Marketing Cooperative (CAFFMACO) started to produce animal feeds in the 1970s. CAFFMACO attributed its success to the concerted efforts of the pioneers, members, officers and management staff. The cooperative has good leadership and is composed of committed employees. Other success factors were the continuous education and training program, transparency and competent and dedicated directors and employees (Castillo, 2003). Lastly, the Luntian Multipurpose Cooperative (Luntian MPC) located in Quezon was established in 1995. It attributes its success to the good selection process of members. Members with a good track record, with integrity and with capital became part of the cooperative. In another study, Castillo and Mendoza (2006) summarized the success factors for the cooperative business operations under these categories: 1) sound management; 2) sufficient volume of business; and 3) adequate and sound financing.

Meanwhile, Bruynis et. al. (2001) studied the key success factors among 52 emerging agricultural marketing cooperatives in the United States. The independent variables were longevity, member business growth, profitability and member satisfaction. The change in probability of success attributed to the independent variables was determined. Different variables such as business volume, total equity, financial statement, marketing agreement, board experience, management training, management person and feasibility study were also considered.

Further, Baseman (2012) conducted an internet survey to find globally a consensus response on the question regarding cooperative success. He found 175 success factors and grouped them according to 13 categories. These 13 categories were the following: supportive environment, sound advance planning, real economic benefits for members, skilled management, belief in cooperative concepts, grassroots development and leadership, financially self-sustaining, innovation and adaptation, effective structure and operations, networking with other cooperatives, communications, common member interests and education.

On the other hand, Pefindo (2018) asserted that the key success factors for animal feed mill companies and husbandry were: market position, vertical integration, diversification, operating management, financial policy, capital structure, cash flow protection and liquidity and financial flexibility.

The above studies related to the key success factors (KSFs) among cooperatives were general. So far, no studies yet have been conducted specific to the KSFs among cooperative feed mill enterprises and this is the area where this study hopes to make a contribution to.

Methodology

Research Design

The study employed a descriptive research design. It discussed the macro and micro-environment and analyzed the KSFs of the of the animal feed mill industry. The researchers also examined the internal environment of the selected cooperative feed mill enterprises in Batangas province. This enabled them to assess how the enterprises faired in terms of the different KSFs.

Methods of Data Collection

Key informant interviews (KIIs) were conducted among the production managers and key staff of the selected cooperative feed mill enterprises. The list of the cooperative feed mill enterprises in Batangas were obtained from the provincial planning and development office (PPDO) in Batangas City and the Cooperative Development Authority (CDA) Region IVA-Extension office in Calamba City, Laguna. Moreover, KIIs were done among other stakeholders of the enterprises- animal nutritionists, sales manager and government employees of the key institutions in-charge of the feed mill business, the director of the Bureau of Animal Industry (BAI) and also selected staff from the Cooperative Development Authority (CDA). Meanwhile, secondary data were gathered from internal documents such as operating manuals, financial

statements and other related documents of the cooperatives. Lastly, external sources such as graduate and undergraduate theses and/or special problems were also utilized.

Methods of Data Analysis

Figure 2 below presents the analytical framework of the study. The collected secondary data from various reference materials and the key informant interview (KII) conducted among feed industry practitioners and government agencies such as Bureau of Animal Industry (BAI), Cooperative Development Authority (CDA), Provincial Planning and Development Office (PPDO) served as input for the assessment of the external environment. The information enabled the conduct of external environment analysis, specifically PESTE analysis (i.e., politico-legal, economic, socio-demographics, technological and environment/natural). The data also facilitated the examination of the key economic dominant forces of the Batangas feed mill industry such as the growth rate, existing cooperative feed mill enterprises, distribution channel, customers and suppliers were also discussed. More importantly, the external analysis contributed to the identification of the KSFs of the industry. On the other hand, the primary data from the KIIs with the cooperative feed mill enterprises' generated information for the internal analysis, in particular the identification of the enterprises' strengths and weaknesses. The matching of the strengths and weaknesses from the internal analysis and the KSFs from the external assessment led to the determination of the scores per KSF of the enterprises. The rating of each cooperative feed mill enterprise for each KSF was based on a rubric formulated by the researchers (Table 1).

Figure 2

Analytical Framework of the Cooperative Feed Mill Enterprises in Batangas Province, Philippines

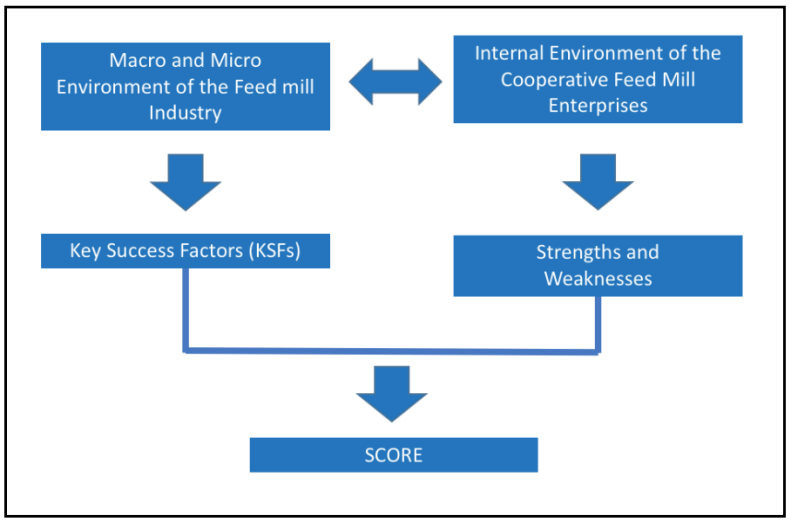


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Table 1

Rubric Used for the Scoring of Enterprises per KSF

Key Success Factor	3 (High)	2 (Moderate)	1 (Low)
Degree/ level of vertical integration	Full integration (presence of backward and forward linkages)	Partial integration (presence of either backward or forward linkage)	Not integrated
Technological capabilities	Automated feed mill system	Semi-automated feed mill system	Traditional feed mill machineries
Geographical Area coverage	Calabarzon (Region IV-A) and other regions	Calabarzon (Region IV-A)	Provincial level
Sound and Adequate financing	sufficient volume of business, good cash flow management and raising capital from members	Moderate volume of business, cash flow management and raising of capital from members	low volume of business, poor cash flow management and inability to raise capital from members
Professional Management	A well-defined organizational structure. Regular meeting of the Board of Directors (BOD) and implementation and monitoring of the cooperative's plans and programs.	Moderately professionally managed cooperative.	Poorly managed cooperative. No plans and programs implemented (no strategic direction)

After the enterprises were assigned scores per KSF, their overall KSF scores were determined. The total scores of the cooperatives covered in the study were then interpreted based on the classification scheme of the overall KSF score (Table 2).

Table 2

Classification Scheme of Overall KSF Score

Category	Total Score
High	11-15
Moderate	6-10
Low	1-5

Results and Discussion

Macro-environment Analysis

Politico-legal Aspect

The Philippine laws identified to have the most impact on the operations of feed mill enterprises were the Livestock and Poultry Feeds Act (Republic Act 1556) and the Philippine Cooperative Code of 2008 (Republic Act-RA 9520). As for the environmental laws, the clean water act of 2004 (RA 9275), clean air act (RA 8749), solid waste management act (RA 9003) and hazardous waste management act (RA 6969) were found to govern the feed mill industry, regardless of whether the player was a commercial or a cooperative. Certifications and quality standards were also found to have a significant effect on feed mill enterprises. These quality standards and certifications include ISO 9001:2008 and ISO 9001:2015 (Quality Management System), ISO 22000-2005 (Food Safety Management System), HACCP/ CODEX Alimentarius Commission, and Good Manufacturing Practices (GMP). These certifications and quality standards were set to ensure the production of good quality feeds that can greatly affect the quality of meat of the livestock and poultry industry.

Economic Aspect

The inflation rate in the Philippines during June 2018 reached 6.7%, the highest for the past nine years (PSA, 2018). Inflation had a domino effect in increasing prices of all commodities, particularly the prices of yellow corn and other feed ingredients for the feed mill industry. This led to an increase in the cost of production among feed mill players, influencing the increase in the selling price of feeds. Along with the inflation, was the occurrence of typhoon *Ompong* (Mangkhut) which occurred in September 2018 and which damaged about Php 8B worth of yellow corn investment in Luzon. This jacked up the yellow corn price to almost double, from Php 13.50/ kilogram to Php 22/kilogram. Further, yellow corn farmers in Mindanao, the source of yellow corn among Batangas-based feed millers, declined to plant the crop due to the changing climate. This contributed to a low volume of yellow corn produced. Feed mill companies were thus forced to import more feed wheat which was priced higher. Feed wheat is a close substitute to yellow corn but is not comparable to the latter in terms of nutritive value. As a result of the low supply of yellow corn from local producers, feed millers planned to import 2.6MmT of feed wheat by June 2019 (Miraflor, 2018).

Socio-demographic/ Cultural Aspect

Swill feeding or feeding of livestock (swine) with leftover food is still being practiced mostly by backyard farm owners to reduce expenses from buying animal feeds (Tomacruz, 2019). However, it is not advisable to practice swill feeding because the animals will not reach the desired market weight. In addition, they will be more prone to diseases and other complications. In the case of swine, diseases like foot-and-mouth and the African Swine Fever (ASF) will likely occur. The Philippines has been very vigilant since the ASF outbreak that started in 2018.

Technological Aspect

The animal feed industry is highly connected to its backward linkage, the yellow corn industry. GM (genetically modified) corn is widely-adopted domestically and globally as a safeguard against the negative impacts of droughts, typhoons and pests and diseases.

On the other hand, commercial feed mill plants in the Philippines have been utilizing the automated feed mill system. Improved process technology and precision feeding can lead to cost efficiency and effectiveness in the long-run as has been observed among developed nations. The use of computer-aided "least-cost" formulation and the shift to customization process has led to a growing demand in the swine and poultry sectors. Furthermore, precision feeding can provide wide options and specifications of different feedstuffs and substitutes that can exactly target the nutritive requirements of certain animals. There will be lesser wastes utilizing the least-cost method. Nevertheless, small and medium feed producers in the country have been noted to be still utilizing the traditional hammermill and machineries due to high cost of adopting the automated feed mill system.

Natural/Environment Aspect

Some of the factors that beset the feed mill industry in relation to natural or environmental factors are the changing climate, waste management and quality standards. The feed mill industry needs to comply with waste water treatment and reduction of noise and air pollution. There is also a growing concern to decrease environmental footprint from the production of the major feed ingredients namely: yellow corn, wheat, soybean and other grains. Reduction of environmental footprint from feed crops can only take place by decreasing the greenhouse gas (GHG) emission by lowering fertilizer and pesticide use. This is difficult especially as high-yielding varieties/ GM crops rely heavily on inorganic fertilizer and pesticides. The use of GM feed crops is inevitable since it is more sustainable. There is however a trade-off between economics and the environment. Reduction of ecological footprint can be Thus, precision agriculture (PA) should be adopted to reduce environmental footprint.

Microenvironment Analysis

Moreover, the microenvironmental factors found most relevant to the Batangas feed mill industry were: industry growth rate, existing cooperative feed mill enterprises, market distribution channels, customers and suppliers.

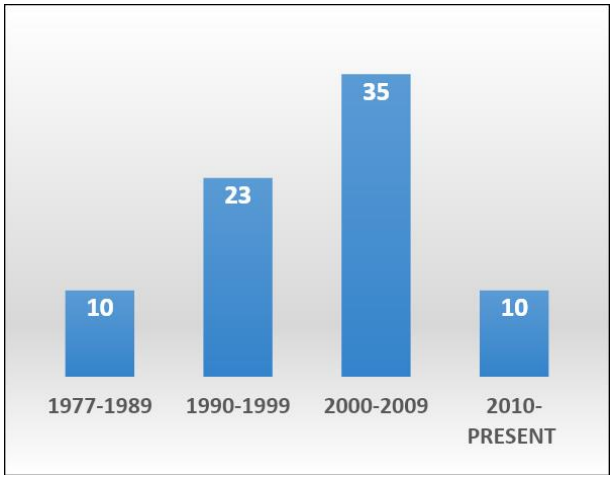
Growth rate of Batangas feed mill industry

The Batangas feed mill industry has had a steady growth since it was started in 1970. Most of the new feed mill enterprises were established between 2000-2009 due to the perceived lucrativeness of the industry. However, between 2010 until now, only 10 feed mills have been established (Figure 3). The continuous increase in costs of inputs and threats of laws and policies related to animal feed milling are the major reasons for the slowing down of the growth of the industry. Despite current challenges, the Batangas feed mill industry is still positively growing at

a rate of 5-7% per annum with the increase in production capacity of existing feed mills and establishment of new feed mill plants (Reyes, 2018).

Figure 3

Number of Feed Mill Enterprises Established in Batangas in Different Time Periods



PPDO, 2018

Cooperative feed mill enterprises and relative size

From among the 89 feed mill plants registered in Batangas, 81 are commercial businesses while 8 were cooperatives. The cooperative feed mill businesses are categorized according to their size: 4 are small (0-25MT/8hr operation); 2, medium (25-50MT/8hr operation); and 2, large (>50MT/8hr operation). Small and medium feed mills still employ the manual hammermill and mixer machineries. In 2017, the total rated capacity (Table 3) per day of the 8 registered cooperative feed mill enterprises in Batangas was 524.5MT (8-hr operation) which is 13% relative to the total rated capacity of the commercial feed mill enterprises in the province. Its monthly average corn utilization was 4, 615.60MT. At present, among all the cooperative feed mill businesses in Batangas, SIDC has the highest utilization rate of 96% as it employs the automated feed mill system. At present, SIDC and LIMCOMA are still the biggest producers of animal feeds in Batangas.

Table 3

List of Cooperative Feed mill Enterprises in Batangas with Corresponding Daily Rated Capacity and Corn Utilization in a Month's Time, 2017

	Cooperative	Rated Capacity (MT) per 8-hr shift	Estimated corn utilization (MT) per month
1	Buklod Unlad Multi-purpose Cooperative	10	88
2	Batangas Bestfeeds Multipurpose Cooperative	12	105.6
3	Batangas City Federation of Cooperative Federal	12.5	110
4	Lobo Agro-industrial Development Multi-purpose Coop (LADEMCO)	20	176
5	Agro-industrial Cooperative of Mataas Na Kahoy		
6	Brilliant Multi-purpose Coop	25	220
7	LIMCOMA multi-purpose cooperative	195	1,716
8	Sorosoro Ibaba Development Cooperative	225	1,980
	TOTAL	**524.5**	**4,615.60**

PPDO, 2018

Customers

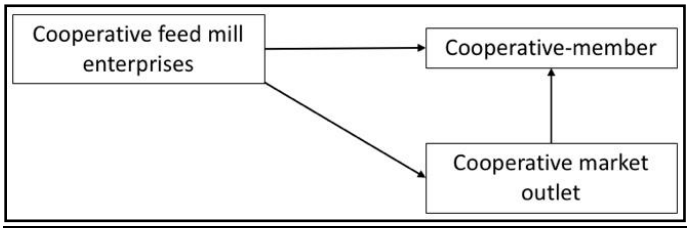
The cooperative feed mill enterprises in Batangas employ capture marketing wherein members of the cooperative are usually the customers for the animal feeds produced. The cooperative members are commonly engaged in backyard poultry and swine farming. With the reduction of backyard animal farms, cooperative feed mill enterprises need to identify other geographic markets for their animal feeds aside from Batangas province. As of the moment, SIDC and LIMCOMA are the only ones serving other geographic markets outside the province. It is foreseen that it will be the larger players who will experience growth in the Batangas feed mill industry. In the past decade, structural changes in the swine and poultry farms were taking place, specifically the establishment of commercial farms. This trend is expected to continue in the coming years and the number of backyard farms will decrease. It is likely that with the increase in number of commercial swine and poultry farms, huge feed mill companies will be forwardly integrated to the animal farms.

Market distribution

The cooperative feed mill enterprises marketing and distribution channel framework is shown in Figure 4. From the cooperative feed mill processing plants, the cooperative members either pick up the animal feeds or the feeds are delivered to the members. For large cooperative feed mill enterprises such as SIDC and LIMCOMA, the cooperative brings the finished goods to the market outlets located mostly in Region IV-A.

Figure 4

Marketing and Distribution Channel of Cooperative Feed Mill Enterprises in Batangas



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Suppliers of yellow corn and other raw materials

There are eight other crops planted in the province and sugarcane is highly prioritized. The feed mill establishments in Batangas usually purchase from the consolidators/ traders to meet the desired volume, cost, and quality of feeds. About 80% of the yellow corn needs in the province, both for the commercial and cooperative feed mill businesses, come from Isabela and 15% from Mindoro. The remaining 5% of yellow corn is sourced from other areas.

Key Success Factors in the Batangas Feed Mill Industry

From the macro and micro environmental analysis, the identified key success factors (KSFs) in the Batangas feed mill industry were identified as follows: degree/ level of vertical integration, technological capabilities, geographic market coverage, adequate and sound financing and professional management. SIDC, AICOM and BBFMPC were evaluated based on the identified KSFs.

Degree/ Level of Vertical Integration

A feed mill enterprise can be successful in the industry if it has a high level/ degree of vertical integration. This is because an enterprise can gain control of the key participants in the supply chain. Sexton and Iskow (1988), Castillo (2003), Pefindo (2018) and Bhasin (2018) found that a highly-vertically integrated organization reduces its costs by being closely linked to its suppliers and its end-users. A high vertical integration (Figure 5) was seen to be exhibited by SIDC. About 15% of SIDC's total yellow corn needs were procured from farmer-members from Aklan, Bicol and Palawan. SIDC has this contract-growing arrangement with its farmer-members wherein the latter's harvested yellow corn were to be sold exclusively to SIDC. The remaining 85% of SIDC's corn needs came from consolidators. On the other hand, SIDC is also highly integrated in terms of forward linkages via its marketing agreement with the feed market outlet owners. About 65% of its total feeds are absorbed by the market outlet owners while the remaining 35% can be attributed to in-house sales. SIDC's competitive approach is cost leadership-best value. As a market leader, SIDC offers high quality feeds to customers at a lower price. For degree of vertical, SIDC was given a score of 3 for this KSF.

Figure 5

SIDC's Supply Chain Management Framework

On the other hand, AICOM and BBFMPC were linked to its members only via marketing agreements. Both cooperatives purchased from consolidators their required yellow corn and other macro and micro ingredients as these intermediaries can provide the required volume, quality and competitive prices. BBFMPC's competitive approach was focus-low cost strategy while AICOM was cost leadership-low cost strategy. For the KSF of vertical integration, AICOM and BBFMPC were given a moderate score of 2.

Technological Capabilities

Utilizing modern technology can help achieve economies of scale. A high utilization rate would mean better production efficiency. Esplana and Soliaban (2004) declared an average of 43% utilization rate among commercial feed mill companies. Among the cooperative feed mill enterprises, only SIDC was noted to employ the semi-automated feed mill system. Meanwhile, BBFMPC and AICOM were still using the traditional systems. SIDC's utilization rate was 96%; AICOM, 60% and BBFMPC, 50%. For technological capability score, SIDC was given a score of 3 and both AICOM and BBFMPC, 1.

Geographic Market Coverage

SIDC catered to a wider geographic market with most of the members coming from Region IV and still some from Regions III, IV, V and VII. In comparison, BBFMPC and AICOM's market reach was only limited to those who were in Batangas. As SIDC had a wider geographic market coverage, serving Northern and Southern Luzon, as well as the Visayas, it was rated 3 in terms of market coverage. Meanwhile, AICOM and BBFMPC were both rated 1.

Adequate and Sound Financing

Adequate and sound financing in the feed mill business was identified to be another key success factor in the industry. To achieve adequate and sound financing, the following should be

present: sufficient volume of business, good cash flow management and raising capital from members. However, achieving this KSF is more challenging to cooperatives because of the service-over- profit concept (Castillo, 2006). Among the cooperative feed mill enterprises, BBFMPC was assessed to have the most sufficient capital and positive financial ratios. It was thus given a score of 3. Meanwhile, SIDC was evaluated as being highly leveraged with a 75% debt ratio in 2018. The cooperative used the loaned amount to support its agri-trading and financing program (i.e., contract-growing agreement with the yellow corn farmers-cooperators) and expansion activities (i.e., construction of warehouse facility, newly-built feed mill plant in Palawan, etc.). SIDC thus was assigned a moderate score of 2. Lastly, AICOM exhibited a poorly managed collection of accounts receivables (A/R) which totaled Php 22.5M whereas its available cash was only Php 10.3M. This represents more than 50% of the total available cash. The problem on collection of payments adversely affected the operation of the cooperative's feed mill plant. AICOM therefore was rated a score of 1 in terms of adequate and sound financing.

Professional Management

Professional management is one of the key success factors of any organization. Aside from demonstrating administrative and technical skills, good leadership is needed to have professional management (Castillo, 2006). This KSF can also help an organization establish its strategic directions. Many cooperatives in the Philippines do not succeed due to poor management.

SIDC prides itself in its having consistent good leadership for the past decades. It is the BOD members' role to set the direction and craft strategies for the cooperative, especially in attracting members as it would determine the volume of business. Having quality members is the reason for SIDC's success and continued existence. Quality members are generally loyal members availing the cooperative's products and services. SIDC was rated 3 in terms of professionally management. Meanwhile, at BBFMPC, there is no clear delineation of work. The general manager of the cooperative also serves as the treasurer which can be a source of conflict of interest. Interestingly, the cooperative can afford to hire an additional staff based on the analysis of its financial capability. BBFMPC was assigned a score of 2 for professional management. Finally, AICOM was given a score of 1 for professional management. The cooperative was noted to not having reinvented itself and craft strategies to sustain its operations. Internally, the cooperative had a high level of account receivables (A/R) which had remained uncollected for several years. Moreover, AICOM faced a threat emanating from the announcement of the LGU that the municipality where the backyard swine and poultry farms it is catering to will be converted to an eco-tourism site. This will lead to the dwindling of the number of backyard swine and poultry farms and will result in a decrease in sales.

The results of the assessment (Table 4) showed that SIDC had the highest score of 14, followed by BBFMPC (10) and lastly, AICOM (7).

Table 4

Summary of Scores of the Cooperative Feed mill Enterprises Relative to the Key Success Factors

Key Success Factors	SIDC	BBFMPC	AICOM
Degree/ level of vertical integration	3	2	2
Technological capabilities	2	1	1
Geographical area coverage	3	2	1
Adequate and sound financing	2	3	1
Professional management	3	3	2
Total	**14/15**	**10/15**	**7/15**

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Conclusion and Recommendation

The results of the study showed that SIDC exhibited a high degree or level of integration, wider geographic market coverage and good professional management. Meanwhile, BBFMC demonstrated adequate and sound financing while AICOM showed partial integration and moderate professional management. On the overall, SIDC score can be considered high (14/15) while BBFMC's (10/15) and AICOM's (7/15) scores were moderate.

It is recommended that SIDC engage in continuous expansion via contract growing arrangements, the construction of larger warehouse facility, the establishment of a new feed mill plant, among others. SIDC should also elevate its semi-automated feed mill system to an automated one to achieve economies of scale and have diversified products. It is also suggested that SIDC adopt a new "corporative" model. This model marries the features of corporate farming and cooperatives and can help the smallholder farmers organize themselves to become a major player in the agricultural food markets. The corporative model can be engaged into between SIDC and Monsato (Bayer). Monsanto is a private company involved in hybrid yellow corn production. SIDC can be in charge of organizing the small farmers while Monsato can take care of the financing and extending technical assistance to the small farm holders.

AICOM and BBFMPC currently employ the traditional/manual-operated machineries catering mostly to small and medium swine and poultry farms in Batangas. In order for the two cooperatives to become relevant, AICOM and BBFMPC can enhance their capabilities through market penetration (i.e., establishing cooperative-owned layer farm), market development and technology improvement, among others. Further, AICOM should divest its feed mill operations due to high accounts receivables and the decreasing number of backyard swine and poultry farms in the municipality where majority of its members are situated.

Finally, it is recommended that a comparative study of the KSFs for all types of feed mill business segments (i.e., cooperative, commercial, home-mixer, and toll-operated) operating in Batangas province be done to determine the similarities and differences in KSFs among these segments.

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